# Inventing a Bountiful Earth

Settler Science in the Making of New Brunswick,
*1763-1859*

by

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"That each of those wonderful grains,
Which they strew in the *bountiful earth*,
Yields straightway a thousand for one?"
…
"The race of the eaters of corn
Will replace all the eaters of flesh"

"As population increases Agriculture keeps pace with it; the forests are burnt down; marshes are drained and become verdant meadows; river courses are narrowed and restrained, while even the sea itself is staid and limited by dykes and dams. Neptune is dethroned by Ceres, and, instead of marine weeds, sea bottoms at length bear waving crops of yellow grain."

-James Robb, *Agricultural Progress*, 1856

For Elizabeth, whose guidance and friendship helped me through the most difficult parts of this process.

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# Abstract

*Inventing a Bountiful Earth* explores the ways in which the production of natural and/or scientific knowledge shaped the development of the British settler colony of New Brunswick. It examines the ways in which both the British Imperial government and, after 1786, the House of Assembly of New Brunswick employed science, both its practical application and as an idea, in state formation. Science was an important tool used in the service of empire: through exploration; processes of drawing, surveying, or collecting; and disseminating knowledge about a particular locale via a web of scientific networks circulating across Britain's expanding empire. Doing so gave Britain an invented dominion over vast swaths of land, including New Brunswick, and projected a form of sovereignty that reinforced the empire's claim and access to resources across the globe that settler colonies later reproduced.

Using individual settler scientists as case studies, this dissertation locates New Brunswick's colonial past in the mid-eighteenth century. Cartographic analysis shows how Europeans and Euro-Americans imagined the portions of Peskotomuhkati, Wolastoqiyik, and Mi'kmaq territory that later white Loyalist refugees and other white settlers claimed as New Brunswick. Tracing the careers of these scientists, and their interactions with the imperial and colonial state, shows how the production of scientific knowledge was concurrently a production of settler colonialism on unceded lands. How this knowledge was to be produced, and who controlled its production, shaped the development of the colony's system of government.

This dissertation argues that the production of scientific knowledge in the region from 1763 to 1859 relied on Indigenous technologies and natural knowledge. At the same time, settler scientists and the institutions that supported or commissioned them actively worked to erase the presence of Indigenous peoples. Through the collection of data about the natural components of New Brunswick, its lands and rivers, flora and fauna, and mineral composition, settler scientists promoted the occupation of stolen land by Europeans and Euro-Americans. Their labours reinforced the colonial state's claim to jurisdiction over resources that settlers sought to extract, furthering New Brunswick's making as a British settler colonial project.

# Acknowledgments

When I began my PhD in September 2018, I never imagined completing the degree in a different city, at a different university, and with a different supervisor. Looking back at the chain of events that led me to where I am, there were moments when roads diverged, and I often chose the one less traveled. Those choices had profound effects, not only on this project but for me personally, and I have learned to embrace that change. As for those roads not taken, I have no regrets.

Reaching this point required more than a little time and hard work. It also required a lot of help from family and friends, different mentors, patient readers, and institutional supports that supplied intellectual as well as financial aid. The Lab of the Atlantic Canada Studies Centre provided a space for many unforgettable moments and lasting friendships. Stephanie Pettigrew, Erin Isaac, and later, Zach Tingley, brought the joy, laughter, and sarcasm that sustained me through the earliest stages of this project at the University of New Brunswick. Others, including Christine Lovelace at the UNB Archives and Special Collections made it possible to continue the work of research and writing despite pandemic lockdowns. At the Provincial Archives of New Brunswick, I found not only the resources to further this project but also meaningful employment that gave me invaluable experience and a deep appreciation of the work of Government Records archivists. The friendships I made while at PANB, with Emma Hourihan, Britany Sparrow, and many others, will always be the best thing that I ever found in the archives.

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Finally, I wish to thank my family. My father, Richard, who has read just about everything I have ever written and taught me that love and respect is something you give freely. My mother, Lorraine, who was in my corner no matter what and taught me that love and respect is something that I deserve in return. My brother, Manny, whose encouragement was always a constant and only ever a phone call away. And Tyson, my partner, who was there during the best and worst parts of grad school, listened to me vent, and held me together when the pressure almost broke me. You reminded me that there is a life after the PhD, and I am so happy that I get to share it with you.

# **Chapter One**:

## Introduction

In April of 1855, having nearly completed his first year of lectures at King's College Fredericton, Henry Ketchum wrote that "knowledge is power," and argued in a short unpublished essay that simply a glance at a globe would "be sufficient to prove the truth of the assertion." At just sixteen years of age, Ketchum's estimation about the utility of knowledge, specifically scientific knowledge, was embedded in the predominance of British imperialism and the parts of the globe claimed by the lion served as his evidence that knowledge was indispensable to the spread of empire. Indeed, Britain's transcontinental empire was a laboratory for the systematic exploration of nature and its colonies provided spaces for the collection of information with respect to the natural state, capabilities, and extractable resources of its many peripheries. Despite his young age, Ketchum clearly saw the results of the relationship that developed between science and British imperialism, and the part that science played in colonial expansion in places such as his home of New Brunswick. Reconnaissance done through surveys and mapping, the collection of flora and fauna specimens, and the unearthing of new minerals produced knowledge that reinforced imperial, and later settler claims in unceded Indigenous territories. "All those things which we see, hear or feel," formed a practical means that settlers exploited and used to dominate the spaces that they came to occupy.[1] Likewise, this knowledge facilitated the growth of resource extractive economies, formed the basis

[1] H.G.C. Ketchum, "Knowledge is power," 14 April 1855, *Henry George Clopper Ketchum fond*, MG H 53, Series 4, University of New Brunswick Archives and Special Collections.

of colonial governance and institutions, and disrupted existing non-European social and political structures. The natural world, Ketchum concluded, provided "all the materials of knowledge, [its] soil endowed with a thousand capabilities of production," while dominion over the natural world belonged to "those nations whose scientific and literary qualities are superior."[2]

Ketchum's bold theory about the nature of power, and the power in knowing nature, was more than simply a product of the hubris of youth. This confidence stemmed from both his instruction at King's College Fredericton and experience of colonial life in New Brunswick. Scientific knowledge was instrumental in the consolidation of British imperial power in the northwest Atlantic in the wake of war, political instability, and in the aftermath of revolution over the course of the long eighteenth century. The territory that settlers would claim as New Brunswick was no exception to the legacies of science in the making and unmaking of empire. In the years after the Seven Years' War advancements in technology enabled the British to improve their military capabilities, enhance navigation, and exploit resources in their colonies more efficiently. Advancements in navigation, such as the invention of the chronometer, improved accuracy in determining longitude at sea, crucial for maritime dominance and expanding patterns of settlement in newly acquired territories along the eastern American seaboard. This acquisition of territory, particular around the Gulf of St. Lawrence, necessitated an investment on part of the British government in the meticulous collection of information about the marine and terrestrial spaces seized from their Spanish and French rivals and

[2] H.G.C. Ketchum, "Knowledge is power," 14 April 1855, University of New Brunswick Archives and Special Collections.

brought under their jurisdiction by the first Treaty of Paris in 1763.[3] Peace brought a wave of practitioners to the continent in the form of disbanded military engineers, surveyors, hydrographers, and officers seeking to capitalize on demands for strategic information. This migration boosted the circulation of knowledge in the British Atlantic world through the movement of peoples between the metropole and colonies and between colonies themselves as practitioners drew, crossed, and redrew multiple political boundaries in the service of empire. When war again broke out, this time between Britain and her American colonies, these practitioners and the knowledge that they produced were no less significant. However, the signing of the second Treaty of Paris in 1783 and exodus of thousands of political refugees from the independent United States transformed the strategic needs of Britain in the latter half of the century. The migration of American Loyalist refugees created a new set of questions that required and utilized natural and scientific knowledge in the establishment of new colonial projects such as New Brunswick.

As a descendent of those refugees who arrived in New Brunswick, Ketchum was the product of this period of forced migration when natural knowledge was key to building a settler colony. After New Brunswick was partitioned from Nova Scotia in 1784, it became the first political entity in the world to be made both by and for refugees. This fact carried with it an urgency that placed significant demands on the British

[3] Joyce E. Chaplin, "Knowing the Ocean: Benjamin Franklin and the Circulation of Atlantic Knowledge," in James Delebourgo and Nicholas Dew, eds., *Science and the Atlantic World* (New York: Routledge, 2008), 81. See also Stephen Hornsby, *Surveyors of Empire: Samuel Holland and J.F.W. Des Barres, and the Making of the Atlantic Neptune* (Montreal & Kingston: McGill-Queen's University Press, 2011); Max Edelson, *The New Map of Empire: How Britain Imagined America Before Independence* (Cambridge: Harvard University Press, 2017).

government, as well as the settler colony itself, because the resettlement of thousands required surveyors to carve out lands for settlers and settlers with enough practical skill to farm it. Natural knowledge was necessary to the preservation of New Brunswick's fragile food economy, and this was reflected in actions taken by its fledgling House of Assembly. From its first sitting in 1786, the House passed acts for the preservation of wild game, such as moose, and other legislation designed to prevent the disruption of river and in-shore fisheries by poorly placed weirs and nets.[4] Early legislation utilized natural knowledge, protecting seasonal hunting and spawning grounds, to prevent starvation in the first years of resettlement. In later years, the development and deployment of natural knowledge within the province became more systematic, relying on empirical evidence and data collection that drew authority from a more scientific method. Legislators cited different British and American studies, including works by the President of London's Royal Society Sir Humphry Davy, in reports on the state of various fisheries throughout the province. Other leading Loyalists sought out the assistance of trained practitioners and their instruments to confirm the boundaries of the colony so to cement its jurisdiction over resources in defense against increasing American incursions.[5] Science and the

[4] "An Act for the Preservation of Moose," *Acts of the General Assembly of His Majesty's Province of New-Brunswick passed in the year 1786* (Fredericton, NB, 1787), 87-88; "An Act to prevent nuisances by Hedges, Wears, Seins, and other incumbrances obstructing the passage of Fish, in the Rivers, Coves and Creeks of this Province," *Acts of the General Assembly of His Majesty's Province of New-Brunswick passed in the year 1786* (Fredericton, NB, 1787), 71-73. These acts are accessed through the British North America Legislative Database, (www.bnald.lib.unb.ca).

[5] Jon Allen, Et al., "Reports of the Commissioners appointed by the House of Assembly to Procure Information Respecting the State of the Herring Fishery at Grand Manan," in *The Journal of the House of Assembly of the Province of New Brunswick* (Fredericton: John Simpson, 1837). See also, Humphry Davy, *Salmonia: Days of Fly Fishing. In a Series of Conversations; with Some Account of the Habitats* (London: Carey and Lea, 1832).

production of knowledge was an important foundational tool in building New Brunswick, and remained so throughout the nineteenth century as restive settlers sought out new means for making the province an economically significant part of the British Empire through the gathering, collecting, and processing of resources that supported settler-colonial enterprise.

This dissertation examines the role that science, and the production of scientific knowledge, played in the development of the settler colony of New Brunswick. Beginning in 1763 (the end of the Seven Years' War), and ending in 1859 (the formation of the University of New Brunswick), this project traces the labours of individual settler scientists, their efforts in New Brunswick to expand scientific knowledge, and how the settler state leaned into what Andrew Gross describes as "connections, exchanges, and networks" of science produced by these settler scientists and the "learned societies, universities, gardens, laboratories," and centres of research that they operated in, creating a transatlantic–global even–web of knowledge circulation in the vehicle of British imperialism.[6] New Brunswick was one node in this weblike structure that comprised a larger framework from which to view the relationship between metropole and colony. As David Lambert and Alan Lester succinctly observe, the British Empire's weblike spatiality was comprised of "a complex mesh of flows, exchanges, and engagements that linked" to other colonies as well as to Britain.[7] Viewing empire as weblike disrupts the notion that British colonisation acted as a ripple centred in London and flowed outward.

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[6] Andrew Goss, "An Imperial Turn in the History of Science," in Andrew Goss, eds., *The Routledge Handbook of Science and Empire* (New York: Routledge, 2021), 1.
[7] David Lambert and Alan Lester, "Introduction: Imperial Spaces, Imperial Subjects," in Lambert and Lester, eds., *Colonial Lives Across the British Empire: Imperial Careering in the Long Nineteenth Century* (London: Cambridge University Press, 2006), 10.

Rather, this web better resembles an eddy–a swirling of a fluid and a reverse current–rejoining the flow of water at different and often unpredictable points.

Science is but one lens through which to see that colonialism is New Brunswick, indeed British North America writ-large, was not simply another stone laid in "the distant foundations from which an increasingly confident independent nation developed, but rather as part of the larger dynamics of British empire-building."[8] Both the settler state in New Brunswick and imperial state in London had expectations of developing scientific knowledge in the colony, for entangled political and commercial reasons that justified a continued investment in practitioners and institutions to produce it. These practitioners, or settler scientists, forged links that increased the circulation of knowledge between New Brunswick and Britain, other British colonies, and between New Brunswick and the United States. Similarly, institutions such as King's College Fredericton were created to foster and control the production of knowledge about the lands and waters that settlers came to occupy; all the while instilling an idea of British predominance within its pupils.

Science can also be a lens that disrupts the idea of the region and regional history as parochial or antithetical to the study of the larger British Empire. Settler scientists operating in New Brunswick developed working relationships with their peers that transcended political boundaries and oceans through their correspondence, published works, collaboration, and even competition to unpack the mysteries of, and to foist an invented order upon, the natural world around them. Successes and failures made in another part of the world contoured the efforts of settler scientists in New Brunswick while they laboured in unceded Wolastoqiyik, Mi'kmaq, and Peskotomuhkati territory

[8] Tony Ballantyne, *Webs of Empire: Locating New Zealand's Colonial Past* (Vancouver: UBC Press, 2012), 14.

seeking to produce scientific knowledge that supported an invented imperial or colonial sovereignty within those spaces. Scientific inquiry was often wedded to the political and commercial interests of the state; however, this relationship remains understudied within the historiography of the province of New Brunswick.

### 1.1 The Loyalist's Laboratory

Historical scholarship about New Brunswick before 1867 is comprised of political, and, to a lesser extent, economic histories. Chronicling the actions of members of the province's governing class, British militarism, Saint John merchants, and guided by a teleological march toward responsible government and Canadian Confederation. These works produced a powerful, narrow, and enduring metanarrative of the Nova Scotia hinterland-turned Loyalist colony that recoiled from an idea of republicanism vis-à-vis the United States and instead turned toward Britain, axe and bible in hand.[9] Central to

[9] I borrow loosely from the title Lucille H. Campey's study, *With Axe and Bible: The Scottish Pioneers of New Brunswick, 1784-1874* (Toronto: Natural Heritage Books, 2007). Campey's focus was on newly arrived migrants from Britain, their interactions with Loyalist refugees, and the communities built by Scottish migrants in coastal and parts of central New Brunswick in response to the growth of the timber trade. Earlier works prior to 1963 have certainly re-enforced this metanarrative. See Peter Fisher, *Notitia of New-Brunswick, for 1836, and extending into 1837: comprising historical, geographical, statistical, and commercial notices of the province* (Saint John: Henry Chubb, 1838); Moses Henrey Perley, *On the Early History of New Brunswick* (Saint John: Barnes & Co., 1891); James Hannay, *History of New Brunswick*, Volume 1 (Saint John: John A. Bowes, 1909); A.G. Bailey, eds., *The University of New Brunswick Memorial Volume* (Fredericton: University of New Brunswick, 1950). More contemporary works continue to express this view of New Brunswick, although their publication before the settler-colonial turn in Canadian history and challenges to more national histories after 2010 is important context. There is also a notable shift toward Loyalist Studies after 1970. See, Irene Etta McAfee, *Johnathan Bliss: A Loyalist Success Story* (MA Thesis: University of New Brunswick, 1973); Robert Dallison, *Hope Restored: The American Revolution and the Founding of New Brunswick* (Fredericton: Goose Lane Editions, 2003); W.E. Campbell*, The Road to Canada: The Grand*

both the histories of New Brunswick and its place in the regional history of Atlantic Canada is the work of W.S. MacNutt. His tome, *New Brunswick, A History: 1784-1867*, broke down the development of the province almost by decade, detailing events such as the foundational years of the original Loyalist old guard, the Crown Lands Affair that brought about the "self-governing province of the Smashers," eventually concluding with an "uncheerful resignation as Confederation came."[10] MacNutt's conservative interpretation of New Brunswick laid a ground work for the broader development of regional history, and made the Department of History at the University of New Brunswick an epicentre for the wider study of the Atlantic Region.[11]

Conceptualizing Atlantic Canada as a region and historical unit, rather than solely of individual provinces, came in response to the erasure of the Maritimes and Newfoundland from more national narratives written in the post-Second World War era. Frank Underhill, chair of the Department of History at Carleton University in Ottawa, casually remarked in his 1964 study, *The Image of Confederation*, that nothing of consequence happened east of Quebec after 1858.[12] Underhill's sentiments underscored an important moment when Canadian historians were responding to the Marxist turn and the centrality of social relations that emphasised class and economic constraints in

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*Communications Route from Saint John to Quebec* (Fredericton, Goose Lane Editions, 2005).

[10] W.S. MacNutt, *New Brunswick, A History: 1784-1867* (Toronto: Macmillan of Canada, 1963), 459.

[11] Judith Fingard, "Focusing on their Roots: University of New Brunswick Historians and Regional History," *Acadiensis* XXX, no. 1 (Automn/Automne, 2000): 38-44.

[12] Underhill leaves off the Maritimes in 1858 and turned toward the United Province of Canada for the remainder of his analysis of the nation. Frank Underhill, *The Image of Confederation* (Toronto: McClelland and Stewart, 1964), 63.

historical writing.[13] In the Maritimes and Newfoundland, according to D.A. Muise, "the outcome was an historiography that established [that the region] had confronted the industrial age much like other parts of America," but left others asking how it diverged from national norms and to explain why.[14]

For MacNutt, this question began and ended with the sea. His 1965 volume, *The Atlantic Provinces: The Emergence of Colonial Society, 1712-1857*, provided a regional synthesis that linked patterns of early settlement to resource extraction, particularly fish, and reduced the effects of industrialism and the failure of the Atlantic Region to transition out of an extractive economy and toward an industrial one to a conspiracy of geography and history.[15] The colonial society that emerged in MacNutt's *Atlantic Provinces* was virtually the same as the one that arose out of his *New Brunswick*. Beleaguered by insipid houses of government, and mired by "an intense spirit of independence," Newfoundland, Prince Edward Island, Nova Scotia, and New Brunswick "never learned to look to a metropolis."[16] The sea was the basic reality of the region, but MacNutt wrote of a sea that did not appear to go anywhere. At the same time, his preoccupation with the nation and positioning the region within national narratives formed a basis for his conclusion that responsible government provided enough concessions to colonial assemblies to stave off the first attempt at Maritime Union. Considering Underhill's justification for the

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[13] A timely and important contribution to this discussion being E.P. Thompson, *The Making of the English Working Class* (London: Victor Gollancz, 1963).
[14] D.A. Muise, "Organizing Historical Memory in the Maritimes: A Reconnaissance," *Acadiensis* XXX, no. 1 (Autumn/Automne, 2000): 50-51.
[15] W.S. MacNutt, *The Atlantic Provinces: The Emergence of Colonial Society, 1712-1857* (Toronto: McClelland and Stewart, 1965), 268.
[16] W.S. MacNutt, *The Atlantic Provinces*, 268.

exclusion of the Atlantic region from the historical writing of Canada, the irony of MacNutt ending his study in 1857 should not be lost.

The preoccupation of regional historians in locating Atlantic Canada within nation-building narratives, however, did produce many important contributions to Loyalist Studies as a distinct sub-field within the history of the Atlantic Region. Some notable works preceded MacNutt, including Esther Clark Wright's *The Loyalists of New Brunswick*, which is often considered standard reading for Loyalist Studies scholars.[17] The 1970s and 1980s, during the bicentennial of the Declaration of Independence, saw increased interest amongst historians about the so-called losers of the American Revolution, where they went, and what they did once they got there. The Loyalists already occupied a central role in more nationalistic narratives of Canada, notably in Carl Berger's preeminent work, *The Sense of Power: Studies in the Ideas of Canadian Imperialism, 1867-1914*. Berger argues that the story of the American refugees held political utility for John A. Macdonald, and that their subsequent exile spread the English language, laws, and Protestantism throughout other parts of British North America, buttressing Macdonald's own vision of a united Dominion.[18] Of course those same refugees held no such dreams, and instead focused their energies more locally. Following war and upheaval, Loyalists such as Edward Winslow envisioned making New Brunswick the "envy of the American States," but lacked the resources to make that dream a reality.[19]

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[17] Esther Clark Wright, *The Loyalists of New Brunswick* (Moncton: Moncton Publishing Co., 1955).
[18] Carl Berger, *The Sense of Power: Studies in the Ideas of Canadian Imperialism, 1867-1914* (Toronto: University of Toronto Press, 1970), 80.
[19] Edward Winslow to Ward Chipman, 26 April 1784, in W.O. Raymond, ed., *Winslow Papers, A.D. 1776-1826* (Boston: Gregg Press, 1972), 193.

The work of Ann Condon, and more recently, Bonnie Huskins, has documented the tensions within this group of refugees, and in particular the conflicting dreams and realities of the politically elite and more middling Loyalists who arrived in Nova Scotia and New Brunswick after 1784. "The original governing class [of New Brunswick] was composed almost exclusively of senior Loyalist leaders," according to Condon, and this was reflected in how they formed the basic institutions of the province–executive, legislative, judiciary, churches, and the Fredericton college–and fashioned "its commercial relations and social rituals [reflecting] their belief in the positive correlation between empire and liberty." The Loyalist province, Condon states, "was a laboratory in which Loyalist versions of North American development […] were acted out," and these versions required a skillset and knowledge that many refugees frankly lacked. Contemporary practitioners, such as British military engineer William Booth, often remarked on the migrants' disappointment and dispossession during the civil war, and the challenges of resettlement afterward. In Shelburne, Nova Scotia, Booth observed not only an attitude of living beyond one's means amongst the white Loyalist gentry, but also a failure on the part of government to prioritize those settlers with skills to either sow or reap from the land. As Huskins points out, Booth was acutely aware that Black Loyalist refugees possessed not only a more desirable skillset but "were industrious, unlike many white Loyalists."[20] Booth went so far as to express his frustration with the government in

[20] Bonnie Huskins, "'New Hope' in Shelburne, Nova Scotia: Loyalist Dreams in the Journal of British Engineer William Booth, 1780s-90s," in Rebecca Brannon and Joseph Moore, eds., *The Consequences of Loyalism: Essays in Honor of Robert M. Calhoon* (Columbia: University of South Carolina Press, 2019), 115-116.

providing the best lands to those settlers "who are totally ignorant of any industrious Farmer's *Plough* and *Harrow*!"[21] A similar situation played out in New Brunswick.

Condon and Huskins' examination of the dreams that Loyalist refugees had for the lands that they came to inhabit demonstrate that they were variable and contested because the Loyalists were not geographically fixed and instead were highly mobile settlers. The same sea that brought American refugees to the Maritime region likewise presented an opportunity to go elsewhere within the Loyalist diaspora, informing how those refugees saw themselves as part of an increasingly interconnected British Atlantic world. The Loyalist diaspora was as much an intra- as it was an inter-imperial phenomenon that bore important commercial, political, and kinship networks that resembled the weblike spatiality of empire as expressed by Lambert and Lester.[22] For example, the communities that comprised New Brunswick were linked not only to each other through such networks, but also to Loyalist refugee communities in other parts of British North America, Britain, West Africa, and as far afield as Australia.[23] This migration was but one of many "transnational forces that, starting in the mid-fifteenth century, began to create an interconnected Atlantic," according to Jerry Bannister and Liam Riordan in the

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[21] Eleanor Roberston Smith, ed., *Remarks and Rough Memorandums: Captain William Booth, Corps of Royal Engineers, Shelburn, Nova Scotia, 1787, 1789* (Shelburne: Shelburne County Archives and Genealogical Society, 2008), 45, quoted by Huskins, "'New Hope' in Shelburne, Nova Scotia," 116.

[22] David Labert and Alan Lester, "Introduction: Imperial Spaces, Imperial Subjects," 10.

[23] It would be incorrect to state that the Loyalist diaspora was only either intra- or inter-imperial. It was also transnational. Many Loyalists who fled north after 1783 returned within the first decade after the end of the American Revolution, including many who caught so-called "Niagara Fever" and emigrated from the Maritimes to Upper Canada in the early 1790s before returning to the United States. See Rebecca Brannon, *From Revolution to Reunion: The Reintegration of the South Carolina Loyalists* (Columbia: University of South Carolina Press, 2016).

introduction to their edited volume, *The Loyal Atlantic: Remaking the British Atlantic in the Revolutionary Era*.[24]

Bannister and Riordan's volume reaffirms that the Loyalists, their loyalism, and the Atlantic were significant to imperial and colonial formations that pulled together peoples and places from across oceans and continents through the long eighteenth century. Loyalism was more than an idea and was distinguished by the action of loyalty to the Crown that was neither the plight of the "traitors" to the United States or desperation of British "outcasts."[25] Instead, the editors and the collection of essays that make up *The Loyal Atlantic* demonstrate that Loyalists were important for political, cultural, and social development through the empire. These developments played out unevenly, at times violently, and notably in the actions of settlers toward Indigenous peoples where colonial formations depended on the occupation of stolen land. As John Reid observes in his essay in *The Loyal Atlantic*, in the parts of the Wabanaki Confederacy that comprised the Maritime region, diplomatic relations between nations, and even later scientific initiatives discussed in this thesis, "was explicitly dependent on […] aboriginal assent."[26] The relative lack of knowledge possessed by settlers about the lands that they were expected to open, farm, and produce a stratified agricultural society upon made Indigenous peoples a vital part of the formation of the settler state in New Brunswick and, at least early on, the survival of those settlers who first occupied their land. Knowledge provided Indigenous peoples with a space of power that allowed them to exert influence, and

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[24] Jerry Bannister and Liam Riodan, "Loyalism and the British Atlantic, 1660-1840," in Bannister and Riordan, eds., *The Loyal Atlantic: Remaking the British Atlantic in the Revolutionary Era* (Toronto: University of Toronto Press, 2012), 3.
[25] Jerry Bannister and Liam Riodan, "Loyalism and the British Atlantic, 1660-1840," 6.
[26] John Reid, "Imperial-Aboriginal Friendship in Eighteenth-century Mi'kma'ki/Wulstukwik," in Bannister and Riordan, eds., *The Loyal Atlantic*, 93.

sometimes control, in the Atlantic region despite the waves of migrants that crashed against the shores of Wabanaki territory through the seventeenth, eighteenth, and even the nineteenth century.

The reconceptualization of colonisation in the Atlantic region in terms of spaces of power was a framework developed by Elizabeth Mancke in a chapter in Stephen Hornsby and John Reid's edited collection, *New England and the Maritime Provinces: Connections and Comparisons*.[27] At issue for Mancke was that larger colonial population centres were too frequently seen as the normative European space in the Americas, defined by settlements with local governments, which in turn constrained scholarship of the northeast. Seeing colonial formation trough "the concept of spaces of power does not presuppose colonies" as the basis of new societies, while also allowing scholars to see functionally and spatially the different types of social power (economic, political, cultural, or military) that operate at variance with one another in nuanced or intersecting ways.[28] Mancke's interpretive framework accommodates systems of social power that decenter settlements with local government in the writing of colonial history, bringing forward Indigenous systems of power. These systems were often overlooked in historical writing of colonisation from the vantage point of settlements, and so Mancke's methodological approach better consideres the influence of Indigenous people on presupposed settler spaces of power. Thomas Peace recently expanded on Mancke's framework to unpack the multicultural and multi-jurisdictional nature of space in what he terms the Maritime Peninsula (a region bounded by the St. Lawrence River, Gulf of

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[27] Stephen Hornsby and John Reid, eds., *New England and the Maritime Provinces: Connections and Comparisons* (Montreal: McGill-Queen's University Press, 2005).
[28] Elizabeth Mancke, "Spaces of Power in the Early Modern Northeast," in Hornsby and Reid, eds., *New England and the Maritime Provinces*, 32-33.

Maine, and Atlantic Ocean) prior to 1760. "After 1760," Peace argues, "Euro-American resettlement of this space began to wield influence unlike anything before," and settlement began to disrupt the political agency of Indigenous peoples. This process crafted "a settler culture that ignored and absolved the legal and ethical implications associated with this expansion," diminishing the social powers of Indigenous peoples according to Peace.[29] This thesis, however, interprets knowledge as a means or space in which Indigenous peoples continued to assert themselves outside of populous European settlements in what became New Brunswick.

The slow and then fast rush of European and Euro-American migrants to the Maritime region played out very differently in the peninsular and interior parts of Nova Scotia that later became New Brunswick. Through the seventeenth century, according to Mancke, earliest settlements in the region resembled coastal pockets defined by charters (of Acadia, 1603; the Newfoundland Company, 1610) as their moments of origin.[30] Peace writes of these moments as less significant than the protracted and "relatively organic expansion of French settlements around the Bay of Fundy and Atlantic coasts," which kept settler power marginal because territorial control remained Indigenous. Notwithstanding unsubstantiated imperial claims to an all encompassing Acadia, these settlements remained a periphery to France's empire into the eighteenth century but fractured in 1713 with the Treaty of Utrecht, and then were lost to the British in 1763 through the conquest of New France.[31] Settler conquest was an important precursor to settler colonialism, as the arrival of Loyalist refugees upset that carefully and long-

[29] Thomas Peace, *The Slow Rush of Colonization: Spaces of Power in the Maritime Peninsula, 1680-1790* (Vancouver: UBC Press, 2023), 3.
[30] Elizabeth Mancke, "Spaces of Power," 40.
[31] Thomas Peace, *The Slow Rush of Colonization*, 106.

negotiated power dynamic that informed settler-Indigenous relations in the region, beginning a process of rapid transition in the 1780s. However, Indigenous peoples were:

> Never defeated by military might or diplomatic negotiation, as much as the Great Swarming made it difficult for their experiences to be shared and known broadly. There was no military defeat; no lands were ceded. Lived experiences, however, changed dramatically. British conceptions of [Nova Scotia and New Brunswick] became more visceral. The spatial manifestations of power had changed to favour settler colonial relationships, institutions, and economies.[32]

In the case of the Loyalist refugees and the settlements, institutions, and economies that they very quickly established in the parts of the hinterland that became New Brunswick, there remained a consistent dependence on Indigenous guides, technologies, and participation. This was a reality well into the nineteenth century.

Settler conquest took on different forms after 1784, notably as schools and other like institutions intended to reduce the necessity of a settler-Indigenous relationship to colonial formations in the region.[33] In New Brunswick, this manifested in the establishment of missionary-led day schools, such as the one at Sussex Vale, and also in the founding of a collegiate school in Fredericton, the earliest predecessor to the present-

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[32] Thomas Peace, *The Slow Rush of Colonization*, 286-287.

[33] Peace concludes his study with a brief examination of the establishment of schools in the context of Indigenous survivance and settler conquest. There is a more expansive body of scholarship that articulates the utility of schools to settler colonialism and is discussed further in chapter three of this thesis. See Caitlin P.A. Harvey, "How Commonwealth Universities Profited From Indigenous Dispossession Through Land Grants, *The Conversation*, 5 July 2022, https://theconversation.com/how-commonwealth-universities-profited-from-indigenous-dispossession-through-land-grants-185010; Caitlin P.A. Harvey, "The Wealth of Knowledge: Land-Grab Universities in a British Imperial and Global Context," *Native American and Indigenous Studies* 8, no. 1 (Spring 2021): 97-105; Sharon Stien, *Unsettling the University: Confronting the Colonial Foundations of US Higher Education* (Baltimore: Johns Hopkins University Press, 2022), 18-28. In the American context, see Margaret Szasz*, Indian Education in the American Colonies, 1607-1783* (Albuquerque: University of New Mexico Press, 1988) and Colin Calloway, *The Indian History of an American Institution: Native Americans and Dartmouth* (Hanover, NH: Dartmouth College Press, 2010).

day University of New Brunswick. Controlling knowledge production through institutions such as schools was thought of as a mechanism of Indigenous dispossession that would "peacefully transition First Peoples towards a settler-dominated world."[34] Although these institutions continued to exist, they failed to immediately disrupt the necessity of natural knowledge about the lands, rivers, and environs north of the Isthmus of Chignecto that was central to Indigenous social power. In other words, knowledge production was another presupposed settler spaces of power, but one where Wolastoqiyik, Mi'kmaq, and Peskotomuhkati continued to hold influence over the Loyalist's version of North American development as it took shape in their laboratory of New Brunswick.

### 1.2 Colonial Science, Settler Science

Loyalists Studies is an example that the bridging of Atlantic Canadian history with larger imperial and transnational narratives is not only generative to the history of a region, but a vital part in accurately writing about the history of British colonisation in parts of the empire such as New Brunswick. Furthermore, frameworks such as spaces of power expand our view in a way that allows Indigenous agency to be seen through negotiations and resistances that moulded the emergence of colonial society long before and after the arrival of the Loyalists. With that in mind, locating New Brunswick's colonial past in spaces of power that operated in a weblike empire makes analysis of the networks in which British expansionism was founded a way to situate the labours of individuals within broader imperial contexts. Knowledge production and science in the service of empire thematically provides a host of opportunity to situate those individuals

[34] Thomas Peace, *The Slow Rush of Colonization*, 286.

who pursued an imperial career and how their labours "made the British Empire, and some of the ways that empire made them."[35] Empire necessitated a production of knowledge about the lands and waters that it would come to claim dominion over, and so investment in practitioners such as surveyors, cartographers, botanists, chemists, and later in the nineteenth century, geologists, was an investment in the expansion and maintenance of empire. Therefore, these practitioners had both intellectual and economic opportunities working in the service of empire and in the production of scientific knowledge.

James Delbourgo and Nicholas Dew likewise assert in the introduction to their volume, *Science and Empire in the Atlantic World*, that the history of science can "serve Atlantic history extremely well, by offering an acute understanding of how networks of practical expertise functioned across often remarkable distances."[36] For many historians of science, the term 'colonial science' refers to any scientific knowledge that is produced in the colonies, usually by practitioners trained in the metropole and who found employment elsewhere in the British Atlantic world.[37] The earliest articulation of the idea of colonial science is most frequently attributed to George Basalla's 1967 essay, "The Spread of Western Science." Basalla developed his vision for a definitive model that explained the diffusion of so-called Western science, beginning with European Exploration in the fifteenth century, and over four centuries the development of colonies

[35] David Lambert and Alan Lester, "Introduction: Imperial Spaces, Imperial Subjects," 1.
[36] James Delebourgo and Nicholas Dew, "Introduction: The Far Side of the Ocean," in Delebourgo and Dew, eds., *Science and the Atlantic World*, 81.
[37] Carlo M. Cipolla, *European Culture and Overseas Expansion* (Harmondsworth: Penguin, 1970); Lucile H. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanical Gardens* (New York: Academic Press, 1979); Vincente Navarro, *Medicine under Capitalism* (New York: Prodist, 1976); Daniel R. Headrick *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981).

provided raw data and materials for scientific analysis in the West (Britain, France, and the Netherlands).[38] British colonial science was a tool not only of imperial and colonial power, but according to Basalla's model was also an instrument of colonial nationalism. Basalla's model, however, was dependent on the existence of, and a connection to, a single metropole. Later historians of science came to reject this dependence and saw that the periphery was more independent in the production of knowledge, notably Roy MacLeod who described colonial relations of science as a kind of "moving metropolis."[39] Others still took inspiration from the works of Michel Foucault and Edward Said and increasingly science became seen as an agent of cultural imperialism that likewise fed back to the metropole.[40]

In Said's later work, *Culture and Imperialism*, his excavation of the English novel as an "artifact of bourgeois society" shows how literary imaginings buttressed the "structures of attitudes and reference" that underpinned imperial and, by extension, colonial formations.[41] The novel, according to Said, not only desensitized imperial conquest but justified the accumulation of land while erasing the title and existence of

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[38] George Basalla, "The Spread of Western Science," *Science* 156 (1967): 611–622.
[39] Roy MacLeod, "On Visiting the 'Moving Metropolis': Reflections on the Architecture of Imperial Science," in Nathan Reingold and Marc Rothenberg, eds., *Scientific Colonialism: A Cross-Cultural Comparison* (Washington, D.C.: Smithsonian Institution Press, 1987), 217–249.
[40] Michel Foucault called attention to Europe's epistemic authority in knowledge production, and the assumptions of European discourses of science by delineating the origins of biology, economies, and linguistics. Edward Said demonstrated that these assumptions could only achieve their epistemic supremacy by invalidating alternative forms of knowledge and knowing by the construction of the 'Orient' as primitive and not only irrational, but anti-rational. Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Pantheon Books, 1966); Edward Said, *Orientalism* (New York: Pantheon Books, 1978). For an example of how these ideas were employed in the contest of the history of science, see Lewis Pyneson, *Cultural Imperialism and the Exact Sciences: German Expansion Overseas, 1900–1930* (New York: P. Lang, 1985).
[41] Edward Said, *Culture and Imperialism* (New York: Knopf, 1993), 52-53, 130.

Indigenous peoples in those lands. Land is central to Said's conceptualisation of colonialism, because "To think about distant places, to colonize them, to populate or depopulate them," centered around access to land.[42] Settler colonialism, or the act of populating distant lands with settlers and the rise of a distinct colonial state that controlled access to land, grounds this thesis and how it defines settler colonialism. The use of published materials such as surveys, maps, reports, and examination of expeditions for the collection of specimens and other scientific reconnaissance into the biological make up of New Brunswick in this thesis show how they shaped settler's thoughts of, and demand for access to, land. The emergence of the colonial state was entangled from the start with settler presumptions of entitlement to land.

In the Canadian context, the influence of science upon settler colonialism is less developed compared to scholarship on the relationship between science and colonial nationalism, including histories of resource extraction and spectacle. "Science," argues Suzanne Zeller in her study *Inventing Canada: Early Victorian Science and the Idea of a Transcontinental Nation*, "became a gauge by which Canadians assessed what their country and, through it, they themselves could one day become."[43] Zeller's use of science as a barometer for a singular national identity rejected Basalla's diffusionist model, and instead derived from what she refers to as "inventory sciences," particularly geology, terrestrial magnetism, and botany, providing English and French colonists with not only a means to dominate their physical surroundings but also an ideological scaffold for the nation state. Less clear is how inventory sciences presupposed the colonial state's

[42] Edward Said, *Culture and Imperialism*, 93.
[43] Suzanne Zeller, *Inventing Canada: Early Victorian Science and the Idea of a Transcontinental Nation* (Toronto: University of Toronto Press, 1987), 6.

ownership of land. However, once settlers became aware of available raw materials they could display them at local and grand exhibitions, an action that "foisted a particular theory of social cohesion on an unsuspecting Canadian population," that is liberalism.[44] More recent works have unpacked the significance of land to resource extraction and colonialism in Canada, and demonstrated how scientific knowledge production was a key part of "the logic of maximum extraction of value [which] was at work not just in Britain, but also the colonies."[45] Max Liboiron, in their recent book *Pollution is Colonialism*, explains that behind the logic of extraction was "the moral imperative to improve Land, to re-arrange Land into Nature and Nature into Resource, [and] was a primary refrain for dispossessing Indigenous peoples from their land."[46] Liboiron shows how scientific research methods as practices aligned with colonialism, turning the myth of *terra nullius* into an invention of empire rather than a fiction.

How recent scholarship has examined the relationship between science and colonialism in the settler colonial spaces that now comprise Canada influences this study's analysis of the intersections of science, extraction, and state formation in New Brunswick.[47] For that reason, this thesis uses the term 'settler science,' instead of settler colonial science, to describe the labours of those practitioners–or settler scientists–in

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[44] Elsbeth Heaman, *The Inglorious Arts of Peace: Exhibitions in Canadian Society during the Nineteenth Century* (Toronto: University of Toronto Press, 1999), 3.
[45] Max Liboiron, *Pollution is Colonialism* (Durham and London: Duke University Press, 2021), 71.
[46] Max Liboiron, *Pollution is Colonialism*, 71.
[47] For other more recent works, see Emilie Cameron, *Far Off Metal River: Inuit Lands, Settler Stories, and the Making of the Contemporary Arctic* (Vancouver: UBC Press, 2015), esp. 17-20, 30, & 37-38; Kim Tallbear, *Native American DNA: Tribal Belonging and the False Promise of Genetic Science* (Minneapolis: University of Minnesota Press, 2013); Sandra Harding, ed., *The Postcolonial Science and Technology Studies Reader* (Durham and London: Duke University Press, 2015).

developing knowledge in New Brunswick and the centrality of land to that process. How the state utilised the systematic collection of information about its natural resources was inherently tied to the success of occupation and extraction of resources from unceded land. Whereas previous Canadian studies such as Zeller's were histories of science as ideas that supplied political ideas about nation-state building, this study positions science and the production of scientific knowledge as an instrument in settler colonialism. It explores the duality of the setter state and scientists wanting the Wolastoqiyik, Mi'kmaq, and Peskotomuhkati to disappear while at the same time willing to exploit the knowledge and labour of these peoples in the process of inventing New Brunswick. Settler colonialism, as articulated by Lorenzo Veracini, is a global phenomenon, in which "settlers do not discover." Rather, in settler colonies such as New Brunswick, settlers "carry their sovereignty and lifestyles with them. As they move towards what amounts to a representation of their world, as they transform the land into their image."[48] The utilization of science, and the epistemological authority that the colonial state lent to European scientific knowledge production in the process of this transformation of unceded land, is how this study defines settler science.

The focus on settler scientists in this thesis, rather than the Indigenous peoples they interacted with, stems from my own positionality as a white settler but does not negate my thinking that the study of the natural world by white settlers was an exercise in disrupting the social, cultural, and economic ways of life of the original inhabitants of the land. Settlers used knowledge to dispossess non-settlers, however this thesis elaborates where and how Indigenous knowledge was a necessary component in the making of

[48] Lorenzo Veracini, *Settler Colonialism: A Theoretical Overview* (New York: Palgrave-MacMillan, 2010), 98.

settler knowledge and, by extension, the settler state.[49] The territory that white settlers claimed as New Brunswick had been, and continues to be, shaped by Treaties of Peace and Friendship. Since 1725 these treaties guaranteed land-use rights for the descendants of the Indigenous signatories and resource sharing was meant to facilitate trade between settlers and non-settlers in an ongoing nation-to-nation relationship. The sharing of knowledge about lands, waters, and resources on part of Indigenous peoples discussed in this thesis underscore a continued effort to maintain good faith through treaty and should not be read as an endorsement of the wholesale theft and occupation of their territory by settlers. Settler perceptions of natural knowledge and science, however, were laden with notions of progress and social order that settlers used to disregard the constitutional realities of these treaties. Natural knowledge–or scientific knowledge–possessed both practical and ideological functions. It produced dreams about the future and imaginings and inventions that sought to improve upon what had come before. To paraphrase Zeller, science also "justified the wholesale reconfiguration of British North America into a transcontinental Canadian dominion," through mapping and surveys, by individuals and institutions, and from the collection and dissemination of specimens and information that settlers used to quicken their occupation.[50]

[49] Patrick Wolfe, "Against the Intentional Fallacy: Legocentrism and Continuity in the Rhetoric of Indian Dispossession," *American Indian Culture and Research Journal* 36, no. 1 (2012): 1-46.
[50] Suzanne Zeller, "The Colonial World as Geological Metaphor: Strat(gems) of Empire in Victorian Canada," *Osiris* 15 (2000): 105.

### 1.3 Methodology and Sources

This dissertation favours thematic organization but is heavily chronological. The chapters are, for the most part, temporally connected beginning in 1784 and ending in 1859, however, Chapter Two spends a significant portion analysing events that took place after 1763. This is for two reasons. The first is because most chapters in this study use individual settler scientists as case studies to discuss specific scientific disciplines such as cartography, botany, astronomy, and geology and their place in the making of New Brunswick. Chapter Three is an exception, which focuses on the establishment of King's College Fredericton as an important centre for the development of these disciplines and their colonial applications. Over time, the colony's needs shifted, and the types of knowledge being produced reflect that change. Second, locating New Brunswick's colonial past as beginning only in 1784 disconnects the land on which it was formed from imperial developments in the British Atlantic world that occurred over a much longer period. New Brunswick may have been made by the arrival of Loyalist refugees, but the imperial problems that those refugees encountered in New Brunswick were rooted in much earlier colonial formations on the American continent. The experience of the settler scientists commissioned to solve these problems was obtained over the course an imperial career that spanned decades, not overnight. Using these settler scientists as case studies provides valuable insights that connect New Brunswick into a more global history of empire and science and allows for comparison between developments in New Brunswick with those in other parts of the British Empire and even the United States. The networks that these individuals produced and operated in were another example of the weblike spatiality of empire and colonial formation. The importance of these connections is not a new idea as *Nature*, a popular scientific journal, wrote in 1907 that "The cooperation of

men of science with statesmen whose special work is to govern and develop the constituent parts of the Empire" was wholly necessary.[51]

Research for this project began at the Grand Manan Museum and Archives, but primarily was completed in the University of New Brunswick Archives and Special Collection, the Provincial Archives of New Brunswick, The Public Archives and Records Office of Prince Edward Island, and the Public Archives of Nova Scotia. An earlier version of this project centred on resources available at the New Brunswick Museum Archives, but subsequent closures due to the Covid-19 Pandemic and infrastructure problems forced things to pivot toward records more easily accessible in Fredericton. The British North America Legislative Database, created by Elizabeth Mancke and managed by UNB's Atlantic Canada Studies Centre, was of incalculable importance to accessing the legislative record and making sense of the *Journal of the House of Assembly of New Brunswick*. Legislative records, including acts passed by the House, commissioned reports, and debates provide important evidence of the weight and frequency that the colonial state turned to scientific knowledge and practitioners, as well as the value of science as an idea in the public sphere. Other records, such as the minutes of Board of the College of New Brunswick and, after 1829, King's College Fredericton, helped to establish links between the House of Assembly and New Brunswick's first collegiate institution in controlling the production of knowledge in the province. It was in the college that the state found a well-source of practitioners that it could turn to, but also replicate in future generations. Finally, the published reports, expeditions, and correspondence of settler scientists in service of empire in New Brunswick form an

[51] "Science and Empire," *Nature* 76 (1907), 37-38.

important part of this thesis as their labours shaped New Brunswick's version of North American development.

### 1.4 Dissertation Structure and Organization

*Inventing a Bountiful Earth: Settler Science in the Making of New Brunswick, 1763-1859*, considers the impact of scientific and natural knowledge on the development of the settler state in New Brunswick. It examines how the settler state, e.g., the colonial House of Assembly established in 1786, utilized and relied upon the production of systematized knowledge organisation that could frame the lands and waters within the province as a means of foisting upon unceded Wabanaki territory an invented European/colonial sovereignty. Almost immediately after New Brunswick's inception as a distinct political entity within the British Empire, science, or as it was more contemporarily understood, natural history and philosophy, was a tool that white settlers used to better their understanding of the environments that they claimed dominion over. This took on many forms, not least of which were surveying and cartography, astronomy, botany and geology, all of which relied on an epistemically authoritative investigation into the natural and physical features of the province. Chapter Two of this dissertation considers how the newly established border between New Brunswick and the recently independent United States was imagined over time through historical geography and different eighteenth-century cartographic depictions of the northwest Atlantic. However, the border was only cemented (at least in part) during the St. Croix Commission, 1796-98, which heavily utilized the skills of trained astronomers to correctly identify the border

at its origin point, and located the line imagined by competing empires through the observation of the emersions and immersions of Jupiter's moons.

Because of the centrality of natural and scientific knowledge within the geopolitics of the British Atlantic world, controlling its production was vital. Recognizing this, Loyalist refugees turned legislators were quick in their attempts to establish a collegiate school in New Brunswick. Chapter Three investigates the settler colonial beginnings of collegiate education in the province and focuses on the predecessor institutions of the modern-day University of New Brunswick; the Fredericton Academy, College of New Brunswick, and King's College, which severed as an important nexus of scientific knowledge production in New Brunswick throughout the nineteenth century. By 1840, professors of natural history and philosophy at King's College Fredericton were central to scientific developments within New Brunswick and connected the colony via professional networks and the webs of a growing global scientific community. Chapter Four homes in on the exploits of Drs. James Robb and William Brydone Jack who laboured in a constant atmosphere of science that promised reforms to agriculture, could motivate industry, establish new forms of communication across the continent, and reinvent New Brunswick as an enlightened and modern society.

The promise of science in New Brunswick was a promise of constant growth and capital development, innovation, and expansion through a programme of unrelenting resource extraction. Just as it had been at the beginning of the century, the contradictions and tensions between the imagined infinite and material finite bounties of the earth shaped a growing body of knowledge about the natural and physical world, while also

producing "an accepted method for accumulating it."[52] Chapter Five unpacks what this promise represented to the provincial government through an investigation of the New Brunswick Geological Survey, established in 1838. Geology presented the most obvious possibilities for Britain's colonies in North America. The unearthing of new resources held the potential to create great wealth, nurture industry, and drive either patterns of extraction or settlement throughout unceded Indigenous territories. King's College Fredericton, which was re-chartered as the University of New Brunswick in 1859, remained an important supporter of geological reconnaissance in the province.

How settlers used science and the production of scientific knowledge to impose their claim to land in the territory that they claimed as New Brunswick persisted and developed in tandem with the settler state. The continuity of science, its different practical and ideological applications, informs how this dissertation sees science in the making of New Brunswick as a settler colony during the century it analyzes. As King's College Fredericton alum Henry Ketchum observed, the transformation of New Brunswick from a place of refuge to mature settler society was rooted in the acquisition, production, and dissemination of knowledge "inasmuch as it enabled us to reap the fruits of the labours of our ancestors."[53]

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[52] Suzanne Zeller, "Land of Promise, Promise Land: The Culture of Victorian Science in Canada," *Canadian Historical Association Booklet Series* 56 (1996): 1.
[53] H.G.C. Ketchum, "Knowledge is power," 14 April 1855, University of New Brunswick Archives and Special Collections.

# **Chapter Two**:

## Locating New Brunswick's Colonial Past: Cartography, Geographic Knowledge and the St. Croix Commission, 1763-1799

At the time of its signing in 1783 the Treaty of Paris was designed to mitigate future animosity over questions of political jurisdiction by drawing an imaginary line that began in the east at the Bay of Fundy and darted north and then west, parallel to the St. Lawrence River and on to the Great Lakes. As the treaty states, the border was "Drawn along the middle of the river Saint Croix, from its mouth in the Bay of Fundy to its source," and "from its source directly north to the highlands which divide the rivers that fall into the Atlantic Ocean from those which fall into the river Saint Lawrence."[1] At a glance, the logic of the treaty and the borderline that it created reflected a meticulous familiarity with the landscape, etched with a sound wisdom of the earth and a precise measure of its features. Developments in surveying techniques from earlier in the century strengthened these assumptions, and in Europe where both France and Britain were expanding geometrical knowledge of their respective nations by triangulating outlines of the state through such topographical details as rivers, hills, and lakes.[2]

In North America this logic produced more questions than it did answers. which of the rivers that entered the Bay of Fundy was the true St. Croix River? Where was its source? And what was the height of land that divided the rivers the flowed into the Atlantic from those that fell into the Gulf of St. Lawrence? This multitude of questions

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[1] Article 2 of "The Paris Peace Treaty of September 30, 1783," available on The Avalon Project: Documents in Law, History and Diplomacy, Yale Law School, https://avalon.law.yale.edu/18th_century/paris.asp [accessed September 20, 2021].
[2] Jan Golinski, *Making Natural Knowledge: Constructivism and the History of Science* (Cambridge: Cambridge University Press, 1998), 100.

left unanswered at the treaty table in Versailles reverberated through the geopolitics of the Atlantic world and vast swaths of land in North America, echoing into the social and political lives of the inhabits left on either side of a line drawn in Paris.

This chapter explores European geographic knowledge-making about the northwest Atlantic during the mid to late-eighteenth century by tracing the imperial career of Thomas Wright, an astronomer and cartographer, as a means of positioning New Brunswick's colonial development.[3] Locating New Brunswick's colonial past prior to 1784, and examining the way the territory that white settlers later claimed as New Brunswick was imagined over time, positions the colony's emergence within longer imperial and settler colonial histories on the continent. How settlers imagined the northwestern Atlantic through the seventeenth and eighteenth century shaped the geopolitical problems that New Brunswick's colonial government faced after its inception. Surveys and maps produced information and refracted how the American seaboard was understood as a British imperial space, but civil war and the independence of the United States complicated and fractured those perceptions of geography as it related to territory and political jurisdiction. In the case of the line which separated the British colonies of Massachusetts and Nova Scotia, this border had newfound importance after the signing of the second Treaty of Paris in 1783.

The process of border-making between the newly independent United States and Britain's remaining territory in North America recently has been described as part of a

[3] "Imperial career" is a term used by David Lambert and Alen Lester in their edited volume to described individuals who dwelt for extended periods in one colonial space before moving on to dwell in others. See David Lambert and Alan Lester, eds., *Colonial Lives Across the British Empire: Imperial Careering in the Long Nineteenth Century* (London: Cambridge University Press, 2006).

"long American Revolution." Jeffers Lennox, in his Study, *North of America: Loyalists, Indigenous Nations, and the Borders of the Long American Revolution*, argues that border-making in Indigenous homelands that initially separated settler colonies in the eighteenth century continued well into the nineteenth century.[4] This chapter looks further back. Establishing the start of the border between New Brunswick and Massachusetts required an analysis of how locals imagined the line that divided colonies before it divided competing empires. The St. Croix Commission, which was struck in 1796 to do this analysis, had to locate the line historically in different cartographic interpretations of the region. As Britain's appointed astronomer to the St. Croix Commission, Thomas Wright was tasked with validating those representations, or invalidating them, as well as the careful positioning of the different rivers that flowed into Passamaquoddy Bay longitudinally to confirm which was the true St. Croix River and the starting point of the border.

By tracing Wright's imperial career in North America as it led up to his work for the St. Croix Commission at the end of the century, this chapter unpacks how Wright relied on local knowledge to produce his maps and surveys of the different colonial jurisdictions that he operated in. Who these local informants were, how Wright acknowledged or erased their contributions to his map-making, and how his nearly four decades of map-making experience informed his labours during the St. Croix Commission are examined in this chapter through a careful reading the maps and published reports that he produced between 1763 and 1798. Indigenous peoples were vital informants to Wright, as their understanding of space and topography often superseded

[4] Jeffers Lennox, *North of America: Loyalists, Indigenous Nations, and the Borders of the Long American Revolution* (New Haven: Yale University Press, 2022).

that of the settlers who occupied their homelands. At different times, the different Indigenous groups that interacted with Wright resisted or refused to contribute to his depiction of their territories, exercising their sovereignty in what Audra Simpson argues as being "critical for these moments of Indigenous/Settler-state relations."[5] The refusal or granting of geographic knowledge by Indigenous informants to settlers was a complicated process–what has been described as anticolonial Indigenous mapping–and shaped the ways that settler scientists such as Wright depicted colonial space.[6] Refusal had the capacity to create different silences on settler maps that demonstrate how natural knowledge provided an important space of power to Indigenous peoples: one that settlers frequently depended upon and was instrumental in securing New Brunswick's sovereignty and stability.[7]

Though New Brunswick was a political jurisdiction carved out of Nova Scotia in 1784, the making of its western border was deeply rooted in decades of cartographic surveys that formed both the creation of the United States and, later in the nineteenth century, Canada. This process was shaped by periods of war and peace between competing European empires and violence between settlers and settlers and Indigenous peoples.[8] The failure of the Treaty of Paris to concretely establish a new border was the

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[5] Audra Simpson, "On Ethnographic Refusal: Indigeneity, 'Voice' and Colonial Citizenship," *Junctures* 9 (December 2007): 72.
[6] Annita Hetoevèhotohke'e Lucchesi, "'Indians Don't Make Maps': Indigenous Cartographic Traditions and Innovations," *American Indian Culture and Research* 42, no. 3 (2018): 11-26.
[7] For an expanded examination of refusal and its relation to the Jay Treaty, see Audra Simpson, *Mohawk Interruptus: Political Life Across the Borders of Settler* States (Durham: Duke University Press, 2014), 115-145.
[8] Jeffers Lennox, *North of American*, 5-17; For an examination on the relationship between violence, order, and settler colonialism in Canada, See Elizabeth Mancke, Jerry Bannister, Denis McKim, and Scott W. See, eds., *Violence, Order, and Unrest: A History of British North America, 1749-1876* (Toronto: University of Toronto Press, 2019).

result of a European geographic knowledge system unable to reproduce a method for carving up Indigenous landscapes in North America as part of a settler colonial project.

### 2.1 The Science of Making Geographic Knowledge

Making geographic knowledge–how terrestrial and marine space was represented on a map–had become a practical science in Britain by the seventeenth century, and was predicated on the accuracy of one's instruments, the utility of reliable local informants, and the successful transference of local knowledge to cartographers.[9] Geographers such as Robert Woodrow and Robert Sibbald, the later of whom became Geographer Royal in 1682, relied on the information of local informants to assist when instrumental observation done by trained surveyors left gaps while constructing images of the landscape, particularly in the case of the Scottish Hebrides.[10] And in many instances, local knowledge alone constituted the formation of different geographies which allowed Britons to place before their own eyes an image of those parts of the nation that were furthest away.

Sibbald applauded this practical aspect of geography and argued that within the pursuit for new geographic knowledge lay a moral imperative against the "unpardonable

[9] Mathew Edney, *Mapping an Empire: The Geographical Construction of British Indian, 1765-1843* (Chicago: University of Chicago Press, 1997); Jeffers Lennox, *L'Acadie Trouvée: Mapping, Geographic Knowledge, and Imagining Northeastern North America, 1710-1763* (Ph.D. Thesis: Dalhousie University, 2010); Stephen Hornsby, *Surveyors of Empire: Samuel Holland and J.F.W. Des Barres, and the Making of the Atlantic Neptune* (Montreal & Kingston: McGill-Queen's University Press, 2011).
[10] Charles W.J. Withers, "Reporting, Mapping, Trusting: Making Geographical Knowledge in the Late Seventeenth Century," *Isis* 90 (1999): 497-521.

crime to be ignorant of the counties and towns of one's native land."[11] Disseminating geographic knowledge through maps aided not only in navigation, but also surveying, inter-colonial communication, and land allocation that was integral to the process of nation and empire building. In North America, the necessary components to geographic knowledge creation were no less vital and yet more complicated. Sometimes by a want of surveying instruments, and other times by missing or incomplete figures of longitude and latitude, the disregarding of local informants, or a messy transference of information between informants and cartographers which enflamed divisions even after the end of civil war on the continent.

At the treaty table, the creation of a new border was more than just the stroke of a pen, because by the late eighteenth-century cartography was part of an Enlightenment intellectual tradition that positioned the map at the heart of a mathematical cosmography. This was part of what Mathew Edney describes as a "conceptual fusion of astronomy, geography, and their point of contact, cartography."[12] This cosmography buttressed the logic of treaty negotiators at Versailles as they employed the use of maps that they thought were produced by empirical, objective, and unproblematic science that imprinted fine-tuned geographic knowledge on to paper so they could carve lines in North America from Europe. Such belief made John Mitchell's substantial 1755 *Map of the British and French Dominions in North America* (Figure 2.1) a clear and reasonable foundation from which to divide Britain's remaining colonies from the newly independent ones. Although

[11] Robert Sibbald, *Nuncius Scoto-Brittanus sive admonitio de Atlante Scotico* (Edinburg: Davidis Lindesii, M. Jacobi Kniblo, Josuae Solingensis & Johannis Colmarii, 1683).
[12] Matthew Edney, "Mathematical Cosmography and the Social Ideology of British Cartography, 1780-1820," *Imago Mundi* 46 (1994): 101.

it was likely not the only map consulted, the geographical errors in the Mitchell Map no doubt contributed to the fallout over the border after 1783.


**Figure 2.1 Extract from John Mitchell, Thomas Kitchin, and Andrew Millar, *A map of the British and French dominions in North America, with the roads, distances, limits, and extent of the settlements, humbly inscribed to the Right Honourable the Earl of Halifax, and the other Right Honourable the Lords Commissioners for Trade & Plantations.* (London; Sold by And: Millar, 1755) Map. Courtesy of the Library of Congress.**

The Mitchell map was produced prior to the Seven Years' War in response to a growing belief that France's colonies posed significant commercial, if not also military, threat to Britain's Atlantic empire. Mitchell drafted his map from London, at the behest of the president of the Board of Trade, Lord Halifax, and it was done by compiling recent surveys produced throughout the Anglo colonies and in consultation with previous large-scale maps of the continent.[13] The mouth of the St. Croix River, according to the Mitchell map, rested at the eastern head of the Passamaquoddy Bay, flowing from its source at Kousaki Lake and serving as the line between the colonies of Nova Scotia and Massachusetts. As for the highlands sitting between the settler-named St. John and St. Lawrence Rivers, which later served as the natural frontier according to the Treaty of Paris, they sit above the portage, or carriages, into Canada along the 48th degree of latitude.[14] However, when Mitchell assembled his map, he did not consult the astronomical observations for latitude and longitude of Nova Scotia (including its interior) made by the Marquis Joseph Bernard de Chabert, which had recently been complied at Louisburg. The Mitchell map also failed to consider that there was no river commonly referred to as "St. Croix," which flowed into the Passamaquoddy Bay.[15]

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[13] French Geographer Guillaume Delisle's 1708 reissue of *L'Amerique Septentrionale* was certainly one of Mitchell's references, though his map underwent several revisions even after his death in 1768, often in response to newer surveys including the General Survey which lasted until 1775. See Edney, "A Publication History of John Mitchell's Map of North America, 1755-1775," *Cartographic Perspectives* 58 (2007): 4-27.

[14] John Mitchell, Thomas Kitchin, and Andrew Millar. *A map of the British and French dominions in North America, with the roads, distances, limits, and extent of the settlements, humbly inscribed to the Right Honourable the Earl of Halifax, and the other Right Honourable the Lords Commissioners for Trade & Plantations*. (London: Millar, 1755). Digitized copy made available by the Library of Congress, https://www.loc.gov/item/74693174/ [accessed Feb 8, 2022].

[15] Francis Carroll, *A Good and Wise Measure: The Search for the Canadian-American Boundary, 1783-1842* (Toronto: University of Toronto Press, 2001), 9.

Rather, the many rivers that flowed into Passamaquoddy Bay were connected via portage networks to the St. Lawrence River and were important routes of communication. The Peskotomuhkati and Wolastoqiyik understood these connections differently than settlers, who often mis-interrupted connections via portage as the continuous flow of water that could be traced to divide land on a map. Both the Passamquoddy Bay and the various rivers that flowed into it became important political fault lines in the later disputes about which was the true St. Croix River and where, precisely, the highlands that separated the Saint John and St. Lawrence rivers were.[16]

Other cartographers did consult Chabert's observations on latitude and longitude to ground their maps, including Thomas Jefferys, an engraver and later Geographer to King George III. Like Mitchell, Jefferys published a map of Nova Scotia in 1755, and though it is unlikely either consulted the other's vision of the region, there are important distinctions which reflect Jefferys' practical use of local knowledge and recently gathered astronomical information. Like Mitchell, Jefferys had been assembling a cartographic archive prior to the publication of his map of Nova Scotia, and he accumulated large numbers of American maps while in London in the early 1750s.[17] But on the continent, Jefferys commissioned John Green, a professional geographer, to confirm previous reports in preparation of Jefferys' *New Map of Nova Scotia and Cape Britain* (Figure

[16] I borrow here from Elizabeth Mancke, *The Fault Lines of Empire: Political Differentiation in Massachusetts and Nova Scotia, 1760-1830* (New York: Routledge, 2005). Thinking of border lines as fault lines of empire was not the focus of her study, but the political difference that emerged on opposite sides of that border were certainly distinguishable, and in a similar vein as her own analysis of Machias, Maine and Liverpool, Nova Scotia.

[17] Mary Pedley, "Gentlemen Abroad: Jefferys and Sayer in Paris," *Map Collector* 37 (Dec. 1986): 20-23. Pedley discusses a selling and perhaps also a buying trip to Paris made by Jefferys and Sayer in 1750.

2.2); and Green meticulously analysed different French sources accepting or rejecting detail that he deemed necessary. Green understood the moral imperatives behind advancing useful knowledge of the terrain through maps, particularly of Nova Scotia "as it was of great Importance to Navigation to have the Situation of its Coasts accurately determined."

In his memoire, Green recounts how he used Chabert's charts to circumnavigate the coasts of Nova Scotia, finding it "very accurate and supported by a considerable Number of Observations, as well of Latitude [and] Longitude." As he procured information for Jefferys' map, Green disclosed that he believed previous surveys had taken allowances regarding the line which separated Nova Scotia and Massachusetts. Again, referencing Chabert's data, Green thought the "St. Croix River in the West," and thus, in Jefferys' published map, the line between Nova Scotia and Massachusetts begins on the western head of the Passamaquoddy Bay.[18] Not only is this placing different from the Mitchell Map, but Jefferys' further denotes that the line ran along the "Passamaquoddy *or* St. Croix River," while on the eastern side of the same bay a separate St. Croix River is marked.[19]

Green's own memoire reveals that he became very attuned to the issues surrounding the disputed naming of the various rivers that flowed into the Passamaquoddy Bay. In an almost flippant manner, he remarked on the absurdity that despite having "been frequented and settled by English and French, it is surprising that it

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[18] John Green, *Explanation for the New Map of Nova Scotia and Cape Britain with the adjacent parts of New England and Canada* (London: Printed for T. Jefferys, 1755), 5.
[19] Thomas Jefferys, *A New Map of Nova Scotia and Cape Britain and the adjacent parts of New England & Canada* (London: 1755). Nova Scotia Archives Map Collection: F/200. https://archives.novascotia.ca/maps/archives/?ID=85 [accessed Feb 8]. My emphasis.


**Figure 2.2 Extract from Thomas Jeffers, *A new map of Nova Scotia, and Cape Britain. With the adjacent parts of New England and Canada, composed from a great number of actual surveys; and other materials regulated by many new astronomical observations of the longitude as well as latitude; with an explanation*. (London Thos. Jefferys, 1755). Courtesy of the Library of Congress.**

should be no better represented in maps."[20] Of course, neither Green or Jefferys could have predicted colonial rebellion, a new international border, and the disruption that a

lack of cartographic clarity about the so-called 'antient' line between Massachusetts and Nova Scotia might reap. Nor could Mitchell have known that the errors reproduced in his charts might feed into an international dispute between Great Britain and her former American colonies over which river was the true St. Croix. However, the differences between these two maps, which were produced at the same time and published in the same year, reveal just how important local information was in combination with data about longitude and latitude when mapping parts of North America. Unlike Mitchell, Jefferys' map was more precise because Green sailed into the Passamaquoddy Bay and interpreted Chabert's astronomical surveys against the landscape, and confirmed them with his own observations, resulting in a very different boundary line on Jefferys' map.[21] However, Green's type of local knowledge was not the same as lived-in knowledge because his survey did not incorporate how actual inhabitants of the region interpreted the rivers of the Passamaquoddy Bay, from either Indigenous or settler perspectives.

Transposing a combination of local settler and Indigenous geographic knowledge onto maps was absolutely in use in different regions throughout North America well before, and after, 1755, and even in the northeast the participation of Indigenous peoples and settlers facilitated the construction of many different maps of colonial space. The participation of different Indigenous guides, groups, and nations, however, should not be understood as an endorsement of colonial maps or mapmaking, which were effectively weapons in an ongoing occupation by providing knowledge of the landscape to would-be colonisers. To many Indigenous peoples, charting land did not imply propertied

[20] Green, *Explanation for the New Map*, 13.
[21] Green, *Explanation for the New Map*, 11-12.

ownership, whereas it did to Europeans.[22] In the case of the Peskotomuhkati and Wolastoqiyik openly sharing knowledge, based on on-going trade and exchanges, this should be understood in the context of the Treaties of Peace and Friendship, which established a relationship between the British Crown and Indigenous nations through the sharing of resources and not the transference of land or sovereignty. Using the terms of these treaties as a framework, geographic knowledge can likewise be seen as a kind resource, no different than fish or timber.

It should also not be assumed that the construction of geographic knowledge of the continent began with the intervention of European cartographers at the end of the fifteenth century. As Cheyenne scholar and cartographer Annita Hetoevèhotohke'e Lucchesi so succinctly argues, Indigenous participants had to "reconcile the representational practices they knew while surrounded by an entirely new context," and at the same time find ways to hide ancestral knowledge from the view of colonial cartographers.[23] Anticolonial Indigenous resistance to European geographic epistemologies came in all forms, including the outright refusal to assist colonial cartographers, the sharing of partial or misinformation, and collaboration with rival imperial mapmakers and colonial surveyors. Thomas Wright, who was the appointed astronomer for the British during the St. Croix Commission, experienced various modes of Indigenous resistance and participation throughout his career as a surveyor and colonial cartographer, which, in time, shaped how he responded to the boundary issue at

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[22] Aileen Moreton-Robinson, *The White Possessive: Property, Power, and Indigenous Sovereignty* (Minneapolis: University of Minnesota Press, 2015), xx.
[23] Annita Hetoevèhotohke'e Lucchesi, "'Indians Don't Make Maps': Indigenous Cartographic Traditions and Innovations," *American Indian Culture and Research* 42, no. 3 (2018): 16.

the end of the eighteenth century caused by the Treaty of Paris and the confirmation of New Brunswick's southwestern edge.

### 2.2 Thomas Wright's Lessons from Georgia

Thomas Wright's contributions to the development of British cartography and geographic knowledge of the North American continent are not easily recognizable, especially when compared to the more notable works of Samuel Holland and Joseph Frederick Wallet DesBarres, to which Wright actively contributed. At the time of his death in 1812, Thomas Wright had spent nearly five decades surveying and mapping different parts of the Atlantic seaboard between Georgia and Anticosti Island. Holland and DesBarres even used Wright's reports to prepare their own maps and topographical surveys, yet many histories of the production of maps in the northeast after 1763 portray Wright as a supporting character.[24] In most cases, he is seldom afforded more than a passing mention even in more recent scholarly works.[25] Nevertheless, Wright's experience with mapping the different parts of Britain's Atlantic colonies merits investigation because of how he utilized local informants, how those informants

[24] T.H. Holman, "Wright, Thomas," in *Dictionary of Canadian Biography* [*DCB*], vol. 5, University of Toronto/Université Laval, 2003.
[25] See Stephen Hornsby, *Surveyors of Empire: Samuel Holland and J.F.W. Des Barres, and the Making of the Atlantic Neptune* (Montreal & Kingston: McGill-Queen's Press, 2011); Alexander Johnson, *The First Mapping of America: The General Survey of British North America* (London: I.B. Tauris & Co., 2017); Max Edelson, *The New Map of Empire: How Britain Imagined America Before Independence* (Cambridge: Harvard University Press, 2017). The only significant study into the Wright's contribution to cartography was done by his later descendent. See Wright, George. *The Surveying Wrights of Prince Edward Island* (self-published: 2009). Copies are available through the University of Prince Edward Island, Library Special Collections.

participated in anticolonial mapmaking, and how those contributions can be read on his maps.

Born in 1740, Wright was trained in mathematics at Christ's Hospital in London and much like Samuel Holland, he travelled to North America during the Seven Years' War when he was just eighteen years of age.[26] Little else is known about Thomas Wright's formative years, or even the extent of education that he received at Christ's Hospital, but in 1758 he was introduced to mapmaking when he apprenticed under William de Brahm, the Surveyor General of the British colony of Georgia who's technical skills have been acclaimed by historical geographers.[27] De Brahm was a German engineer who only recently arrived during a burst of inter-colonial migration as Carolina rice planters sought to expand into Georgia's coastal low country. When Thomas Wright reached the colony, de Brahm had already assisted in several major surveys of the territory around the Newport River and understood the practical importance of topographical data to the expansion of Georgia's agriculture-economy and enslaved labour force.[28] Rice production necessitated new maps and planters greatly appreciated de Brahm's method and accuracy as a surveyor and cartographer because he was never content to merely survey a plot of land and draw a rough sketch of the survey, as was the common practice. According to historical geographer Louis De Voursey Jr., "de Brahm's

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[26] It is unclear how long Wirght remained enrolled at Christ's Hospital, which houses the Royal Mathematics School. For an examination of that institution, see Nerida F. Ellerton and M. A. (Ken) Clements, *Samuel Pepys, Isaac Newton, James Hodgson, and the Beginnings of Secondary School Mathematics: A History of the Royal Mathematical School Within Christ's Hospital, London 1673-1868* (Springer, 2017).
[27] William P. Cumming, *The Southeast in Early Maps* (London: Chapel Hill, 1962), 54; Louis De Voursey Jr., "William Gerard De Brahm: Eccentric Genius of Southeastern Geography," *Southeastern Geographer* 10, no. 1 (April 1970): 21-29.
[28] Paul M. Pressley, *On the Rim of the Caribbean: Colonial Georgia and the British Atlantic World* (Athens: University of Georgia Press, 2013), 39.


**Figure 2.3 T. Wright, Thomas, fl. 1782. "Map of Georgia and Florida taken from the latest and most accurate surveys." (Savannah: Printer Unknown, 1763). Courtesy of the Hargrett Rare Book and Manuscript Library, University of Georgia Libraries**.

mind was ever searching for broad patterns in nature," and thus he travelled extensively to observe and record regional differences in geography, climate, and land use by local

settler and Indigenous populations.[29] The importance of this kind of information to the production of geographic knowledge and mapmaking were lessons that de Brahm imparted to a young Thomas Wright during his apprenticeship.

Though there are few archival sources which document Wright's time in Georgia, either produced by him or the office of the Surveyor General, his apprenticeship with de Brahm concluded after Wright published his *Map of Georgia and Florida taken from the latest and most accurate surveys* in 1763 (see Figure 2.3). That year saw Georgia's Charter limits extended further south from the Altamaha River to the St. Mary's River (its modern state border with Florida) by the terms of the Royal Proclamation. Spain and France likewise surrendered to the British their territories in eastern America and Florida at the end of the Seven Years' War, and Georgia planters were eager to expand that colony's territorial base so to attract more settlers, strengthening their position to seize upon more Indigenous hunting grounds nearer to the Appalachian piedmont. That region frequently experienced bloody backcountry skirmishes between restive Georgia land speculators and the Apalachee People who had resisted earlier European commercial expansionism into the interior. There remains serious debate about the state of the Apalachee population amongst scholars, but by mid-century the impact of European diseases, warfare, and settler violence was devastating.[30] Even John Mitchell indicated on his map the significance of colonial warfare and the settler acquisition of the "Country of the Apalachees," which, according to Mitchell, had been "conquered & surrendered to the Carolinians, after two memorable Victories obtained over them & the Spaniards in 1702

[29] De Voursey Jr., "William Gerard De Brahm," 24.
[30] For an excellent overview of the challenges of calculating the Apalachee population see, John. H. Hann, *Apalachee: The Land Between Rivers* (Gainesville: University Press of Florida, 1988), 160-180.

& 1703," and both battles are marked on the Mitchell Map with crossed sabers.[31] Wright's 1763 depiction of Georgia and Florida, however, tells another story and shows how Wright's practical experience with de Brahm confirmed for him that European geographic knowledge creation depended on Indigenous peoples, their knowledge of the land and its waterways.

Wright remained in Savannah long enough to produce a map of the coast of Georgia, the continental interior as far west as Cape San Blas, and south to encompass the whole of the Florida peninsula.[32] Like many other contemporary depictions of North America's southeastern seaboard, Wright's map is far more detailed along the coast than it is in the interior, which he attempted to include. In part, this is due to patterns of settlement along the watersheds that drained into the Atlantic Ocean in response to booming rice production, creating greater urban density below the Savannah River. Wright's care in positioning the names of the many islands that dot that stretch of coast and the way that the tip of Florida breaks apart at the end shows how meticulous he was, but also when and where he deferred to the work of earlier cartographers. Compared to the 1755 Mitchell Map, Wright made improvements over many of Mitchell's observations, such as Amelia Island, situated just above Saint Johns River. On the Mitchell Map the landmass is depicted as two separate islands while Wright more accurately depicted it as a single island. However, Wright's attention to detail rapidly disappears in-land and his map, as a result, depicts vast swaths of empty space through the Appalachian Mountain range.

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[31] John Mitchell, *A map of the British and French dominions in North America*, 1755.
[32] Thomas Wright, *Map of Georgia and Florida taken from the latest and most accurate surveys*, 1763, Hargrett Rare Book and Manuscript Library, Rare Map Collection, University of Georgia.

This silence created by Wright's depiction of empty space, perpetuated by countless other maps and surveys, is an attempt at the erasure of Indigenous homelands, settlements, place names and cosmologies of the landscape.[33] These homelands still exist, of course, and in many instances, settlers adopted or altered Indigenous place names on their maps in an attempt to contain and own them. These names are devoid of their meaning and cultural significance. As Robin Wall Kimmerer observes in her study, *Braiding Sweetgrass*, when settlers mutate Indigenous place names by adding nouns such as 'Bay,' they become testaments to resistance because "A bay is a noun only if water is dead. When a bay is a noun, it is defined by humans, trapped between its shores and continued by the word."[34] Indigenous place names are representative of a cultural significance, an action, and a lived experience that enhances an understanding of lands and waters making Indigenous knowledge indispensable to settlers and impossible to erase.

Wright's illustration of the Georgia interior also provides an example of another kind of silence that can exist in maps depicting colonised space. These are the silences created by anticolonial Indigenous refusal to collaborate with settler cartographers, disrupting settler constructions of supposedly conquered lands. Harley, an influential geographer and map historian, famously argued that "maps are pre-eminently a language

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[33] Indigenous geographic knowledge creation operates outside of a longitude and latitude lexicon, and this often varied between different native groups across the continent. For an excellent discussion on the distinctions between European mapping and concepts of space with Indigenous ones. See Daniel Clayton, "Captain Cook and the Spaces of Contact at 'Nootka Sound,'" in *Reading Beyond Words: Contexts for Native History*, Jennifer Brown & Elizabeth Vibert, eds., (Toronto: Broadview Press, 1996): 95-123.
[34] Robin Wall Kimmerer*, Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis: Milkweed Editions, 2012): 55.

of power, not of protest."[35] "As much as guns and warships, maps have been weapons of imperialism," but much like guns and warships, maps are not infallible, and the power within maps was still susceptible to those silenced witnesses who protested against settler cartographers in salient ways and shaped how cartographers projected geographic knowledge onto pieces of paper.[36] This silence likewise appears as blank space, and sometimes is indistinguishable from the purposeful erasure of the presence of Indigenous communities and nations by settler cartographers such as Thomas Wright. Other times, this silence is produced through mistranslation or misinformation making Indigenous settlements appear on a map as small and static triangular shapes, and rivers and portage routes become singular and connected lines on a map without capturing the true significance or uses of those places. Indigenous anticolonial refusal to settler mapmakers developed within a nexus of ongoing cartographic violence that, one way or another, "sterilized expansion, turning what appeared violent and unseemly," the theft of land and the genocide of Indigenous peoples, "into a triumph of Enlightenment thought."[37] Indigenous peoples posed both physical and representational problems to surveyors who wanted to bring regions such as the Appalachian Piedmont into both the folds of their maps and empire, but both settlers and European cartographers needed Indigenous knowledge to operate within those landscapes.

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[35] J.B. Harley, "Maps, Knowledge, Power," in Cosgrove D. & Stephen Daniels, eds., *The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments* (Cambridge: Cambridge University Press, 1988), 306.
[36] Here I borrow from De Vorsey Jr. See, De Vorsey, Jr., "Silent Witnesses: Native American Maps" *The Georgia Review* 46, no. 4 (Winter 1992): 709–26; De Vorsey, Jr., "The Importance of Native American Maps in the Discovery and Exploration of North America." *Terrae Incognita* 42 (2010): 5–17.
[37] David Bernstein, *How the West Was Drawn: Mapping, Indians, and the Construction of the Trans-Mississippi West* (Lincoln, University of Nebraska Press, 2018), 165.

This was the context in which Wright constructed his map of Georgia and Florida, as he interpreted Indigenous geographic knowledge as much as data gathered with the scientific tools and mapping equipment at his disposal.[38] This combination was still a reality for later explorers such as Lewis and Clarke, and John Charles Fremont, all of whom faced similar obstacles mapping routes through the trans-Mississippi west and were still dependent on the participation of Indigenous pathfinders despite having more modern equipment.[39] Wright himself conceded the necessity of Indigenous knowledge within his own map when he outlined a massive section of land which he labelled "The Great Swamp Owaquaphenogaw," roughly meaning the land of trembling earth.[40] What is fascinating about Wright's outline of the space is that he directly connects its easterly tip with the St. Mary's River, which serves as part of the modern border between the states of Georgia and Florida flowing into the Atlantic Ocean. However, Wright's depiction of the swamp as the source of that river is very inaccurate, a fact Wright communicates in a short note which he inserts into the space on the map. Here he also hypothesizes that inside the swamp there was "a considerable tract of high land possessed by a tribe of the old Apalachee Indians which keep the avenue secret to all Florida Inhabitants."[41] The avenue into the interior along the St. Mary's River, "navigable with the tide 40 miles up from the mouth" according to Wright, was restricted from settlers by the refusal of the Apalachee people who lived there. The power that the Apalachee asserted was such that it demanded not only an appearance on Wright's map as a distinct space, but also in

[38] De Vorsey, Jr., Louis. "Silent Witnesses: Native American Maps," 710.
[39] Bernstein, David. *How the West Was Drawn*, pp. 168-170.
[40] The modern name likely derives from the Hitchiti word "oki fanô꞉ki," or, "bubbling water." See, William Sturtevant, *Handbook of North American Indians* (Washington, Smithsonian Institution, 1978), 191.
[41] Thomas Wright, *Map of Georgia and Florida*, 1763.

Wright's note that knowledge of such a route was *kept secret* by an Indigenous community that continued to assert sovereignty from the centre of a territory despite earlier cartographic assumptions made by Mitchell that the Apalachee had been conquered.

Furthermore, on the western side of the outline of Owaquaphenogaw, Wright depicts the Saint Marks River as a natural bypass of the swap from the river's mouth in the Gulf of Mexico. Though he accurately draws the river forking a short distance inland, where the Saint Marks meets the Wakula River before it drains into the Apalachee Bay, Wright extends the headlands of the river to the northern most point of his map, above the latitude of the mouth of the Savannah River. Here, Wright's map reveals two key traits that shows the influence of Indigenous geographic knowledge, or lack thereof, to the production of eighteenth-century European maps of North America. The first, is that most river systems in the world are dendritic, meaning that small streams join a larger river and form hand-like watersheds that drain into the sea or other large bodies of water.[42] In Wright's map, he depicts the Saint Marks River as anastomosed, connecting to the Sitilla River above Owaquaphenogaw near his drawing of stationary Indigenous settlements, merging watersheds that drain into the Atlantic Ocean with those that drain into the Gulf of Mexico. This is a condition that almost never occurs in nature and nowhere does it happen in the southern Appalachian watersheds. Wright's map also shows the Saint Marks River extending about 130 miles inland, reaching the half dozen Indigenous settlements depicted on his map. However, the Saint Marks River is only about 36 miles long, and, had Wright physically travelled up the river, he would have realized its true

[42] De Vorsey, Jr., "Silent Witnesses: Native American Maps," 716.

length and the necessity of portage to reach the waterways that connect to those communities.

Both the Wright map's unnatural depiction of Georgia and Florida rivers as anastomosed and the extension of the Saint Marks River as a singular, long-running waterway demonstrate Wright's misinterpretation of Indigenous portage routes. As De Vorsey, Jr. has shown in his reading of earlier European maps of the Gulf of Mexico and parts of continental America, "Native American cartographers [depicted rivers] as combined and undifferentiated." This was done not because Indigenous cartographic knowledge was primitive or unscientific, but because the overall system of transport was their main concern, and "not whether one segment had to be walked, while another required a canoe for passage."[43] Thomas Wright envisioning the Saint Marks River as extending farther inland was either the result of his relying on previous surveys which similarly depicted the river that way (notably, the Mitchell Map does not), or it stems from the misinterpretation of non-settler spatial knowledge of the river, the surrounding topography, and modes of access. Wright likely consulted Indigenous peoples in his depictions of colonial space because he was aware of the importance of their knowledge to the production of maps through his training with William de Brahm, who likewise relied on it when it was available. Though there is no documentation that plainly states when and how Thomas Wright made his surveys, he nevertheless makes explicit the role of Appalachee refusal in constructing the different parts of his map when he outright blamed them for his inability to detail Owaquaphenogaw. These were important lessons that Thomas Wright took with him when he left Georgia and returned to England before

[43] De Vorsey, Jr., "Silent Witnesses: Native American Maps," 717.

he sailed into the Gulf of St. Lawrence as part of the General Survey in the summer of 1764, where he would again depend on the cooperation of Indigenous peoples–the Innu–who lived and visited Anticosti Island.

### 2.3 Thomas Wright, the General Survey & Anticosti Island

The British Government in London knew relatively little about Anticosti Island before 1763. As late as 1762, popular English magazines made little mention of the island in accounts of the northwest Atlantic and noted that other than it being a possession of the French, and situated "in the mouth of the river St. Lawrence," Anticosti was "at present of no great consequence, any more than the Magdalen Isles," though not without potential.[44] Its size, placement in the Gulf of St. Lawrence and status as a navigational risk outweighed its lack of apparent extractable resources for development by Britain after 1763, meriting Anticosti its own report as part of the General Survey. Improved cartographic detail was to facilitate improved navigation and, in turn, participate "in the construction of a British imperial landscape" in the conquered province of Quebec.[45] Such was the impetus behind one of the largest cartographical endeavors of the Enlightenment period, as Britain's Atlantic empire was transformed following the conclusion of the Seven Year's War in 1763 and with its acquisition of Canada, the remainder of Acadia, and further to the south, Florida, giving Britain control of the whole Atlantic seaboard.

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[44] *The Universal Museum; or, gentleman's and ladies polite magazine of history, politicks and literature for 1762*, volume 1 (London: Arthur Young and John Seally), 512-513.
[45] Stéphane Castonguay, "Cartographic Productions and Historiographical Representations: Geographical Imaginations of the St. Lawrence River," *The Canadian Geographer* 60, no. 4 (December 2016): 431.

This massive territorial expansion created a variety of problems, and the social and political fallout caused by an over-extended imperial government is often interpreted by historians as the precursor of the American Revolution.[46] But, as historians have noted, administrators in London and the colonies did not possess the necessary geographic knowledge to develop "policies and processes that would guide appropriate development of the land and infrastructure, the wise exploitation of natural resources, rational demarcation of inter-colonial boundaries, and strategic deployment of military forces and related fortification," exacerbating Britian's overextension.[47] The irony that these were the exact problems which continued to plague Britain and the colonial government of New Brunswick after 1784 as they searched for the St. Croix River is noteworthy.

The proposed answer to London's lack of clear knowledge of the eastern seaboard of North America by 1763 came when the Crown and Privy Council directed the Board of Trade to create a new organizational system for Britain's expanded territorial claims on the continent. In turn, the Board proposed the settlement of all coastal territories, increased naval presence in the Caribbean, and limits to colonisation in the North American interior. Such an enterprise demanded more comprehensive maps, and the Board responded by commissioning surveys in Florida and the Gulf of St. Lawrence, the long-contested edges of Britain's Atlantic empire.[48] This marked the beginning of what

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[46] There are countless studies of the American Revolution that temporally begin with the end of the Seven Years' War and/or the passing of the Stamp Act. For classic texts, see Edmund and Helen Morgan, *The Stamp Act Crisis: Prologue to Revolution* (Chapel Hill: University of North Carolina Press, 1953); P.D. Garner Thomas, *British Politics and the Stamp Act Crisis: The First Phase of the American Revolution, 1763-1767* (Oxford: Clarendon Press, 1975); and for more recent contributions, see Zachary Hutchins, ed., *Community Without Consent: New Perspectives on the Stamp Act* (Hanover: Dartmouth College Press, 2016); Jeffers Lennox, *North of America*, 7-18.
[47] Johnson, *The First Mapping of America*, 6.
[48] Edelson, *The New Map of Empire*, 1-3.

came to be known as the General Survey of British North America (1764-1775). By better understanding its islands and continents, the Board demonstrated that one of the more practical implications of maps was surveillance, and by way of surveillance, better equipping Britain to assert its sovereignty through the illumination of terrestrial and maritime space upon a map.[49] The power that the Board, and by extension, the Crown, rested in cartographic detail was deeply connected within a growing imperial knowledge framework that Britain relied on in order to administer and legitimize its transnational empire after 1763.[50] This framework composed of many different forms of knowledge acquisition, creation and organization, and stemmed from natural and physical sciences such as geography, astronomy, and geology (discussed in Chapter Five). Britain's was an empire of science, but that relationship was a symbiotic one as science facilitated the production of empire and imperial expansion necessitated technical innovations such as the General Survey.

Divided into Northern and Southern Districts, and separated at the Potomac River, the General Survey was a massive undertaking by the Board of Trade in their attempt to create an archive of new cartographic knowledge. Allocated two thousand pounds sterling per annum by the British Government, the Survey quickly became a major draw for surveyors, astronomers, engineers, and military officers formerly employed during the

[49] Maps, and the process of mapping, have never been altruistic. As Michel Foucault has observed, the knowledge produced by maps "was thus a source of power, a way of presenting one's own values in the guise of scientific disinterestedness." See Mark Poster, "Foucault and History," *Social Research* 49 (1982): 116-142; Michel Foucault, *Discipline and Punish: The Birth of the Prison* (London: Allen Lane, 1977), 195-228.
[50] J.B. Harley, "Maps, Knowledge, and Power" in Paul Laxton, ed., *The New Nature of Maps: Essays in the History of Cartography* (Baltimore: Johns Hopkins University Press, 2001), 57.

Seven Years' War who sought to extend their imperial careers in peace time.[51] Among them was Samuel Holland, appointed by the Board as the Surveyor General of the Northern District in 1764. Born in 1728, Holland was a Dutch engineer who gained employment in the British army as an officer and surveyor at the rank of lieutenant in the Royal American Regiment. He participated in the siege on Quebec and subsequent battles along the St. Lawrence River, making a name for himself by providing topographical reports which proved strategically valuable to the war effort.[52] For the General Survey, Holland was responsible for establishing the mapped boundaries of seven separate colonial jurisdictions in northeastern North America. His first instructions from the Board as he began to survey the Northern District was to focus on the small islands of the Gulf, St. Pierre and Miquelon. The remnants of France's North Atlantic Empire, the Board wanted to ensure that the tiny islands that were left to the French to dry fish could not also pose a strategic military threat.

The General Survey helped Britain to reimagine its empire and, according to Max Edelson, "by far the most important aspect of this [reimaged] plan for empire was securing the Gulf of St. Lawrence."[53] Securing the Gulf brought with it a controlling interest in the northwest Atlantic fisheries, which Britain had to share with France under the terms of the Treaty of Utrecht (1713). The conquest of New France also gave Britain unchallenged access to timber in the Nova Scotia interior, and in particular the tall white pines that grew along the Miramichi, Saint John, and Passamaquoddy watersheds that

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[51] Stephen Hornsby, *Surveyors of Empire,* 4-5.
[52] F. J. Thorpe, "Holland, Samuel Johannes," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[53] Quote from Max Edelson, "Mapping the New Empire: Britain's General Survey of North America, 1763-1782," a paper presented at the John W. Kluge Center, Library of Congress, https://www.loc.gov/item/webcast-4304 [accessed September 24, 2021].

could be made into masts for British vessels. Therefore, the task put to Holland was great, as more accurate and detailed maps became a necessity created by conquest, and Britain quickly came to understand the important relationship between territorial acquisition and knowledge of that territory in order to affirm its sovereignty. "To govern territories, one must know them," and such sentiment was the impetus behind the Board's aspirations of a cartographic archive of its new North American holdings.[54] In time, Holland produced maps of St. John's Island (Prince Edward Island), Cape Breton, and the Magdalen Islands that were instrumental in changes to the colonial management of those territories after 1763. In order to meet the demands of the Board, Holland delegated to several deputy surveyors for the production of coinciding maps of the many remaining parts of the region, such as the southern coast of Labrador, the Gaspe, and Anticosti Island, all of which required accurate maps for the practical management of empire.

Under direction from the Board, Holland and the rest of the Northern District's Deputy Surveyors started work on surveying parts of the Gulf of St. Lawrence where the Board wanted to establish new coastal settlements. Beginning on St. John's Island, Holland and his surveying team arrived in fall of 1764 and used materials from the ruins of the small Acadian settlements which dotted the island after their expulsion during the Seven Years' War to construct a shelter for themselves and their telescopes, establishing a base of operations south of Fort Amherst and named it Observation Cove.[55] St. John's Island was speculated to be the most fertile in the Gulf, and investors and land speculators

[54] Matthew Edney, *Mapping an Empire: The Geographical Construction of British Indian, 1765-1843* (Chicago: University of Chicago Press, 1997), 1-2.
[55] Edelson, *The New Map of Empire*, 123.

in London influenced the Board enough to make surveys there the first priority of the General Survey in the Northern District.[56]

Much like Wright had been in Georgia, Holland's team for the General Survey were very dependent on local knowledge and guides to complete their work. However, the first surveys in the Northern District utilized Acadian knowledge of the land to navigate the terrain. The Acadians were white French settlers that arrived in the mid-seventeenth century and notably developed systems of dykes that drained the salt marshes of the Bay of Fundy to create fertile agricultural communities. Such innovation and change to the landscape disrupted important Indigenous foodways in the region, particularly for the Mi'kmaq peoples. After the deportation of the Acadians by the British during the Seven Years' War, there was only an estimated 300 Acadians remaining on St. John's Island, but Holland managed to hire an Acadian guide for each of his four surveying teams for the winter and spring. The expertise of these settler guides did not prevent other unexpected hurdles, including the sudden death of one of Holland's deputies shortly they arrived at Observation Cove.[57] Nevertheless, Holland was able to produce a very accurate map of St. John's Island, and his account of the agricultural potential convinced the Board that the Gulf was rich, not only for its fishing, but also for other forms of natural resource development including mining on Cape Breton and timber along the rivers of the Gaspé.

Resource development and the wealth that could be extracted from the sale and settlement of the different lands around the Gulf showed promise. Because Holland was able to mathematically divided St. John's Island into 67 different townships or lots and

[56] Hornsby, *Surveyors of Empire*, 49.
[57] Johnson, *The First Mapping of America*, 70.

the Board then disbursed those lots to affluent Britons in a successful land lottery in 1767. Holland's survey directly influenced the system of absentee landownership that defined the island's history well into the nineteenth century. Additionally, Holland's work on St. John's Island furthered the idea that cadastral reports of the region would reveal to perspective British landowners a vast Arcadian landscape in the northwest Atlantic rich with agricultural potential. Earlier British reports and published geographies often described the larger Gulf islands with conjecture and likened the topographies of St. John's, Cape Breton, and Anticosti Island.[58] Britain was geographically imagining the islands long before it claimed sovereignty over them, and Holland's surveying gave credit to the enduring hypothesis about the agricultural similarities between the Gulf islands "given to the French by the infamous Treaty of Utrecht."[59]

Once Holland completed his work on St. John's Island, the General Survey Team embarked for Cape Breton and quickly learned of the topographical dissimilarities between the two largest islands of the Gulf. Although the pastoral potential of Cape Breton and, later, Anticosti were quickly unfounded, suspicion about their mineral wealth persisted making cadastral surveys necessary for reshaping how Britain imagined its empire in the Gulf of St. Lawrence.[60] The Board had clear economic motives for wanting to both control and make safe the navigation the Gulf of St. Lawrence. Having annexed the majority of fishing grounds along the banks off the coasts of Canada from the French,

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[58] *The American Gazetteer: containing A Distinct Account of all the Parts of the New World* (London: A. Millar and J. & R. Tonson, 1762), 51; *An universal history of arts and sciences: The whole extracted from the best authors in all languages, By Dennis De Coetlogon* (London: John Hart, 1745), 1179.
[59] William Douglass, *A summary, historical and political, of the first planting, progressive improvements, and present state of the British settlements in North-America* (Boston: Printed and sold by Rogers and Fowle in Queen-Street, 1752), 93.
[60] *The American Gazetteer*, 1762, 51.

the British assumed uninterrupted access to some of the richest fishing waters in the world by 1763. The surveying of Anticosti Island proved to be of particular importance to British commercial interests because of the island's size and prominent position in the Gulf of St. Lawrence.


**Figure 2.4 Thomas Wright, *A Plan of the Island of Anticosti in the Gulph of S.T Lawrence Surveyed under the Directions of Samuel Holland Esq.r His Majesty's Surveyor General of Lands for the Northern District of North America, 1767*, American Revolutionary War-Era Maps, British Library Collection, Leventhal Map & Education Centre.**

Following the General Survey's success on St. John's Island, Holland deputized Thomas Wright, who only recently returned to England from Georgia, and offered Wright a commission to complete a detailed survey of Anticosti Island as part of the General Survey in the Gulf (see Figure 2.4). Wright's commission echoed Britain's economic motivation for surveying Anticosti as the instructions Holland issued to Wright the following year directed him to make accounts of the quality of "cod and other Fisherys

[sic]" and what improvements might be done to encourage trade while on the island.[61] However, Wright's primary goals were to confirm rumors of a silver mine on the island and to produce a map of the island to the scale of one mile to an inch that accurately depicted the rivers, coasts, lakes, and lands: all details that would have supported the marketability of Anticosti to the Board and perspective landowners in the same way that had been done for St. John's Island.

Unlike St. John's Island and Cape Breton, Anticosti was geographically more isolated from both Halifax and Quebec and exposed to some of the harshest elements in the Gulf of St. Lawrence. Surveying Anticosti required a well-supplied expedition, the likes of which Thomas Wright had never undertaken while south of the Potomac River. Wright likely would have been warned of the many hazards in voyaging to such a place, particularly after September when the cold set in. An expedition also had to be supplied in such a way that it could manage over winter, when the St. Lawrence River would freeze and access to fresh provisions from Quebec made virtually impossible. And by January, when the Gulf of St. Lawrence would also begin to freeze along the coasts of the Gaspé, St. John's Island, Newfoundland, and Anticosti itself, turning the island into a fortress bulwarked by thick sea ice making resupplying from Halifax a dangerous task. Such logistical hurdles were only exacerbated by the severe storms known to frequent the Gulf in the late autumn and early winter, which often caught European vessels off-guard because of how quickly storm systems could blow in from the Great Lakes.[62] Even in the

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[61] "Old commission instructions for Thomas Wright, 6 August 1764," Wright Family Papers, Series 14, item no. 387, Public Archives and Records Office of Prince Edward Island [hereafter PAROPEI], CA PCA Acc2702-s14.

[62] Such was the case for the Rev. Father Emmanuel Crespel, who was shipwrecked on Anticosti in 1735 when a storm carried the ship he was on into rocks on the southern tip

best summer weather, accessing Anticosti was a challenge because there was no natural harbour, despite earlier reports that "the French [had] a Port here the best in the Island."[63] It was not until late in the nineteenth century when the province of Quebec paid two thousand pounds to build a breakwater at Grand lac Salé, on the southern shore, making it possible for schooners of significant tonnage to approach the island.[64]

Resource exploitation demanded reconnaissance of the landscape, and likewise required safer access to the lands and waters around Anticosti.[65] For centuries, the island was a major obstacle to Europeans attempting to navigate both the Gulf and St. Lawrence River, beginning when Jacques Cartier first caught a glimpse of Anticosti's timber-lined coasts and "marvellously green meadows" in July of 1534.[66] One of Cartier's longboats was lost after it struck upon a rock in the shallows off the southern side of the island, likely making it the first European shipwreck of any kind on Anticosti. It was then that Cartier remarked on the hunting parties clad in "black bear-skin, [who] arrived in a canoe" and could safely navigate the shoals around Anticosti Island.[67] Indeed, the maneuverability of Indigenous modes of transport such as the canoe amazed Cartier, as he remarked on them over a dozen times in his account of his 1534 voyage. When Thomas

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of the island. E. Crespel, *Voyages of Rev. Father Emmanuel Crespel, in Canada, and his shipwreck, while returning to France* (Frankfort-on-the Meyn: [s.n.], 1742).

[63] Jean Palairet, *A concise description of the English and French possessions in North-America, for the better explaining of the map published with that title* (London, printed by J. Haberkorn, in Gerrard-Street, Soho: and sold by Mess. Nourse, Vaillant, Millar, Roque, in the Strand, 1755), 69.

[64] A. Rankin and James Richardson, *The Island of Anticosti: Its Geographical Position, Extent, Resources* (Quebec: s.n., 1870), 6.

[65] On the need for reconnaissance to further resource extraction in Atlantic Canada, see Bill Parenteau, "The Woods Transformed: The Emergence of the Pulp and Paper Industry in New Brunswick, 1918-1931," *Acadiensis* 22, 1 (Autumn/Automne 1992): 5-43.

[66] Jacques Cartier, "Cartier's First Voyage, 1534," in Ramsay Cook eds., *The Voyages of Jacques Cartier* (Toronto: University of Toronto Press, 2017), n.p.

[67] Cartier. "Cartier's First Voyage, 1534," n.p.

Wright arrived on the island over two centuries later, circumnavigating Anticosti remained a serious issue for Europeans. Pilots from Quebec actively avoided the island, keeping several leagues south of Anticosti while on route through the Gulf.[68] Additionally, there were no local settlers to hire as pilots, as was the case on St. John's Island, and so for the General Survey Anticosti rightly earned its title as "the graveyard of the Gulf."[69]

Wright's expedition was unlike those undertaken by Holland and the General Survey Team to either St. John's Island or Cape Breton. Furthermore, the lack of any settler population, Acadian or otherwise, meant that Wright would require assistance from Innu peoples present on Anticosti, just as he had from the Apalachee while trying to construct a map of Georgia's interior. However, of the documents produced by Wright during his time on Anticosti–his correspondence, a published article, his completed map, and an even later published astronomical report–there is no reference to any Indigenous population on Anticosti, let alone mention of any assistance that they may have provided. Nevertheless, the absence of evidence about the roles that Indigenous peoples played throughout Wright's career does not equate to evidence of their absence from the production of Britain's cartographic archive, either for Wright on Anticosti Island, or others employed by the General Survey. As was the case with Wright's map of Georgia

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[68] Thomas Jefferys, *The natural and civil history of the French dominions in North and South America. Giving a particular Account of the Climate, Soil, Minerals, Animals, Vegetables, Manufactures, Trade, Commerce, and Languages, Together with The Religion, Government, Genius, Character, Manners and Customs of the Indians and other Inhabitants. Illustrated by maps and plans of the principal places, collected from the best authorities, and engraved by T. Jefferys, Geographer to his Royal Highness the Prince of Wales. Part I. Containing A Description of Canada and Louisiana* (London: printed for Thomas Jefferys at Charing-Cross, 1760), 17.
[69] Donald MacKay, *Anticosti: The Untamed Island* (Toronto: McGraw-Hill Ryerson, 1979), 25.

and Florida, the presence of Indigenous knowledge must be read through many silences, the details of his survey, and the natural knowledge conveyed by Wright in his published account of his time on Anticosti.

Wright arrived on the island in the late summer of 1766 and established his base of operations at the mouth of what he named the Observation River, the largest river on Anticosti and situated on the southwestern shore of the island. Though much of the island's interior was still unknown within the Anglo world, Wright quickly discovered that the lush Eden that Cartier recalled at a distance was actually stretches of heath and peat bogs dispersed between an otherwise heavily wooded chain of cliffs.[70] Still, there was considerable optimism that Anticosti could be land rich. If not from its agricultural produce, then from its timber and potential mineral wealth and rumored silver, "a prospect that urgently required investigation."[71] But where Holland and his Deputy Surveyors employed Acadian guides on St. John's Island and Cape Breton there is no documentation that details this logistical aspect of Wright's time on Anticosti Island. Rather, there exists only his analytical report, which he published in 1768, his astronomical observations that were transmitted to the Astronomer Royal at Greenwich in 1774, and his hydrographic depiction of the island. However, Wright's report, which was subsequently published as *A Description of the Island of Anticosti*, does offer considerable insight into the labours of Wright's expedition. Published in London's *Gentleman's Magazine* and *The London Magazine*, this was a considerable feat for

[70] MacKay, *Anticosti*, 12.
[71] Johnson, *The First Mapping of America*, 90.

Wright since both publications were among the most widely circulated and respected English natural history periodicals of the era.[72]

Wright's survey of Anticosti Island took several months to complete as he over-wintered during 1766-1767 season. Though he did not keep a log of the provisions that furnished the expedition, Wright does detail the scientific instruments he was equipped with, including a two-foot reflection telescope designed by James Short, a pendulum clock to maintain precise time, and a sextant designed by John Hadley "18 inches [in] radius, having a brass arch and index, and ivory vernier."[73] By using the pendulum clock to maintain an accurate measure of time in relation to when the sun reached its highest point, Wright established precise latitude as 49˚ from his camp on Observation River. This was done by calculating the difference between Wright's position in relation to the sun and the angle of the subsolar point of the sun at mid-day, which is 0˚ in the summer. Locating longitude, however, required more of an effort. By observing the eclipses of Jupiter's satellite moons, Wright logged 4 immersions and 5 emersions from different hours between 8 A.M. and 1 P.M. beginning in January and concluding at the end of April 1767. Noting the apparent time on Anticosti with the peak of either type of eclipse, Wright's recorded observations were later compared with those produced at Greenwich (documented in the *Nautical Almanac*), and thus established the "longitude of Jupiter Inlet West of Greenwich" at 4 hours, 14 minutes, and 33 seconds west of the Prime

[72] Lennox. *Homelands and Empires*, 255.
[73] Thomas Wright and Nevil Maskelyne, "Immersions and Emersions of Jupiter's First Satellite, Observed at Jupiter's Inlet, on the Island of Anticosti," *Philosophical Transactions* 64 (1774): 190; Thomas Wright, "A Description of the Island of Anticosti, by T. Wright, who wintered on, and surveyed that island. By Order of Government," *The Gentleman's Magazine* 38 (London: 1768), 65.

Meridian.[74] By locating Anticosti's position in time compared to Greenwich, Wright was then able to produce a three dimensional image of the island in the Gulf, correcting earlier French estimates of the island "to be twelve leagues short of its real length."[75]

The accuracy with which Wright was able to position Anticosti in both time and physical space did not carry over into his visual depiction of the island's interior. As was the case with his 1763 chart of Georgia and Florida, Wright's 1767 map more accurately captured the coasts of Anticosti, its most extreme points, and the various heights of land along its edge. Wright purposely did not survey the inner parts of Anticosti, leaving it completely blank except for a hook-like Observation River cutting into the island's centre. In part, this empty space can be explained by Wright's expedition remaining relatively close to its base at the mouth of the Observation River between January and April while Wright conducted his search for the eclipses of Jupiter's moons to find precise longitude. Between August and October, and from May until mid-June when Wright quit the island for Gaspé, he attempted to circumnavigate the shores of Anticosti so to chart its many other rivers, bays, and inlets and provide corresponding points of latitude. This timing is important for two reasons. First, sailing close enough to map Anticosti's shoreline was made virtually impossible by November due to the development of sea ice caused and severe winter weather systems. Ice would only begin to recede in March. Additionally, the seasonality of Anticosti's navigable coasts meant that Wright was charting the shoreline at the exact point when Innu hunting and gathering parties were arriving by canoe from the Labrador coastline. The Innu's seasonal use of Anticosti has been well documented, first by Cartier in 1534, and after, in other European accounts

[74] Thomas Wright and Nevil Maskelyne, "Immersions and Emersions," 192-193.
[75] Thomas Wright, "A Description of the Island of Anticosti," 65.

of the island. [76] Yet, in Wright's published report, he describes Anticosti as void of human life. Apart from "The Bears, who are the principal inhabitants of this island," Wright rendered the landscape of Anticosti as not only unaltered from its natural state, but also completely unpeopled.[77] Similar to earlier historical Anglo-American geographers who imagined Anticosti Island as being "barren."[78] This erasure of Indigenous peoples from Anticosti by Early Modern geographers is a significant one, particularly because of the amount and type of natural knowledge that Wright supplies in his published report of Anticosti's interior.

Indigenous communities did not abandon use of the island after Cartier lost a longboat on the rocky south shore. Contemporary French natural histories of Canada describe the presence and mobility of the different Algonquin groups that made use of the Gulf, particularly when "Going up the St. Lawrence [river]," where Europeans traded with "all the Indian nations of Canada, with whom we have commerce," and these groups

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[76] E. Crespel, *Voyages of Rev. Father Emmanuel Crespel, in Canada, and his shipwreck, while returning to France* (Frankfort-on-the Meyn: [s.n.], 1742); Pierre-François-Xavier Charlevoix, *Journal of a voyage to North-America. Undertaken by order of the French King. Containing the geographical description and natural history of that country, particularly Canada. Together with an account of the customs, characters, religion, manners and traditions of the original inhabitants* (London: printed for R. and J. Dodsley, 1761), 283; "Ancient Occupation of the Territory," *Nametau Innu: Memory and Knowledge of Nitassinan*, http://www.nametauinnu.ca/en/home/science/history [accessed April 25, 2022]; Steeve Côté, "Expiration of Large Black Bear Population by Introduced White-Tailed Deer," *Conservation Biology* 19, no. 5 (October 2005): 1668; In more recent years different Innu communities have advocated for the preservation of Anticosti's natural environment citing their ancestral use of the island. In 2016, Ekuanitshit First Nation launched an injunction against a controversial plan to drill for oil and gas on Anticosti, with Chief Jean-Charles Pietacho stating his nation was "affirming our [ancient] rights." See Shaun Malley, "Innu community files injunction to stop Anticosti drilling," 16 July 2016, CBC News.

[77] Wright, "A Description of the Island of Anticosti," 64.

[78] *The American Gazetteer*, 1762, 51.

between the mainland "as well as the neighbouring islands," including Anticosti.[79] Moreover, there is good reason to suspect that Wright actually relied on the Innu and their familiarity with the island in order to produce his written report based on the instructions that Holland issued him. Sketches of the interior were expected as part of the General Survey, according to Wright's instructions from Holland, but if such sketches could not be produced through methods of surveying, then they would be prepared by means of "the Intelligence of the Inhabitants or Indians" present on Anticosti.[80] Pierre-François-Xavier Charlevoix, a Jesuit priest at Quebec who published his *Journal of a voyage to North-America* in 1761, observed that "several Indian nations were found in that territory, which spread themselves over the island of Anticosti, toward the mountains of Notre Dames, and along the northern side of the river."[81] Innu knowledge of the Gulf's littoral environment was developed through centuries of navigating between southern Labrador, Anticosti, and other parts of the lower St. Lawrence basin, making them invaluable to settler commerce in New France and, after 1763, British cartographers such as Wright.

The Innu provided support of all kinds to settlers for centuries, notably in response to the countless European vessels that wrecked on Anticosti in the decades between Cartier and Wright's expeditions because of fog, strong gales, lack of experience navigating the St. Lawrence River, or any combination therein. Survivors depended on the intelligence of island's original inhabitants to sustain themselves. In November 1736, Father Emmanuel Crespel, a French priest, was marooned there on his return to France from Quebec when the ship *Renommée* ran aground on the southern tip of Anticosti

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[79] Charlevoix, *Journal of a voyage to North-America*, 1761, 283.
[80] "Old commission instructions for Thomas Wright, 6 August 1764," Wright Family Papers, PAROPEI.
[81] Charlevoix, *Journal of a voyage to North-America*, 1761, 283-284.

Island. Surviving bad weather, famine, fever, and other illnesses that killed nearly all the *Renommée*'s remaining crew and passengers, Crespel lived on to produce an account of his "Travels in North America," with specific detail about his trials on Anticosti.[82] The significant presence of the Innu in Crespel's narrative, and his dependence on Indigenous wares, food, and sympathy to last the winter on Anticosti is telling about the state of Innu-settler relations on the island. Still, Thomas Wright arrived on Anticosti in August, with enough time and resources to construct an adequate structure from which to conduct his work and, unlike Crespel, was provisioned well-enough to last through the winter. Holland and the rest of his Deputy Surveyors were aware of the harsh winter conditions that were common throughout the Northern District and particularly those of the Gulf of St. Lawrence. A careful reading of Wright's "Description" provides clues as to where and how the astronomer positions Innu knowledge of Anticosti within his cadastral report, despite their absence from his written observations.

Wright never properly surveyed inland beyond the Observation River, which he depicted as having a sharp curve and reaching near to the centre of the island. By Wright's own estimation, it was "the largest, and runs the greatest distance of any in the island," but he only "measured eight leagues up it without determining its [true] length" or its source.[83] Wright was captivated by the steep banks that formed the river, like natural stone ramparts "100 feet in height," with the river being "fordable almost in every part except at its mouth." Likewise, when Wright circumnavigated Anticosti's nearly 300 miles of coast, he notes that the island's limestone cliffs reached heights ranging from 20

[82] Jean-Guy Pelletier, "Crespel, Emmanuel," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[83] Wright, "A Description of the Island of Anticosti," 64.

to 50 feet and Ellis Bay, near the western tip, "affords the only shelter for vessels in this large island," but that any ship would still be "exposed to the southerly winds." Wright's written account creates an illustration of a castle-like Anticosti, moored and unassailable, guarding the entrance to the St. Lawrence River, but one "so well watered, that in the space of every mile round its coast, you'll either meet with a small rivulet or run of fresh water" breaking through the limestone bluffs.

Within two months, Wright constructed a view of Anticosti from the outside looking in, both from the Observation River and from the coast. In his published account, he describes Anticosti as being rich with diverse plant and animal life, producing a meticulous list of local flora and fauna including:

> The fruits, herbs, plants, and vegetables which are the natural produce of this island, are cranberries, gooseberries, strawberries, huckleberries, red Indian berries, juniper-berries, peas, parsley, onions, lambsquaters, or wild spinnage, Indian potatoes, sarsaparilla, maiden-hair, and Indian tea.[84]

Many of these plants would not have been in season by the time Wright arrived in late August. In the short months before he would have been snowed in, Wright claimed to have found abundant edible vegetation all over the island. And though it is possible that Wright collected specimens close to his encampment on the Observation River, before he began calculating the island's longitude in January, even that would have been made difficult by early November when walking beyond the tree-line because the trees would be "so covered with snow, that on the first stroke of a hatchet, the man who gave that stroke was knocked down by what fell on him."[85] Despite this, Wright was still able to make note of the "the many small lakes and ponds where a prodigious number of wild

[84] Wright, "A Description of the Island of Anticosti," 64.
[85] Crespel, *Travels in North American*, 1742, 96.

fowl resort to breed," the scarcity of fish along the coast of the island except near the east point, and he even documented the hibernation patters of black bears, all well beyond the reach of his outpost.[86]

To amass this wealth of natural knowledge about Anticosti without the assistance of Indigenous guides, either from hiring them or following them, would be next to impossible. Given the extent of the detail that Wright was able to produce about Anticosti, the short timeframe he had to gather it, and the logistical realties of winter on the island, Wright certainly adhered to Holland's instructions and relied on the intelligence of the Innu who made seasonal use of the Anticosti in order to produce an adequate sketch of its interior. Because he was trained by de Brahms to consult Indigenous informants while making geographic knowledge for settlers in Georgia. Such information shaped how he projected physical space onto a map and in written form. Indeed, the details that Wright provides about Anticosti in his account in *The Gentleman's Magazine* suggest that the Innu he encountered were more willing to engage and assist him than the Appalachee who refused him in Georgia. When Wright was denied access to local Indigenous knowledge about Georgia's rivers, he openly blamed the Appalachee in the empty space that they created on his map to mask his inability to accurately chart the backcountry. Conversely, he tried to erase the Innu of Anticosti because they more freely shared their knowledge of the interior which he could pass off as his own without having to even acknowledge the presence of non-Europeans on the island.

[86] Wright, "A Description of the Island of Anticosti," 64-65.

As a result, Wright produced two kinds of maps of Anticosti. His first was the reproduction of his spatial knowledge of the island gleaned only from its coasts as his map's interior was left blank from want of motivation to produce a more detailed hydrographic report like St. John's Island. Wright did confirm Anticosti's lack of agricultural potential but, to the dismay of possible British land speculators, was unable to find evidence of any mineral ore on the island. Such suspicion stemmed from "a report which prevails amongst the French, that a silver mine was discovered in the south side of this island," however Wright claimed to have "had not time to make a proper search after it."[87] It is unclear which earlier French report produced such rumor, although Charlevoix's *Journal of a Voyage to North-America* does relate similar speculation "that a silver mine had been discovered on [Anticosti]."[88] However, Charlevoix's account also notes that a goldsmith was sent at some point from Quebec to search and:

> Soon perceived by the discourse of him who had given information of it, that the mine existed only in the brain of this person, who was incessantly recommending to him to put his trust in the Lord. He was of the opinion, that if trust in God was sufficient to make him discover a mine there was no necessity of going to Anticosti to find it.[89]

False reports of about Anticosti's mineral wealth left much to be desired, and later Early Modern geographers quickly shifted their tone regarding the island's supposed potential, remarking that "The French have represented it as absolutely good for nothing."[90] Wright's astronomical readings were far more important to the cause of improving the navigation of the Gulf of St. Lawrence, and his method of reading the immersions and

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[87] Wright, "A Description of the Island of Anticosti," 64-65.
[88] Charlevoix, *Journal of a voyage to North-America,* 1761, 88.
[89] Charlevoix, *Journal of a voyage to North-America*, 1761, 88-89.
[90] Tobias George Smollett, *The present state of all nations. Containing a geographical, natural, commercial, and political history of all the countries in the known world. By T. Smollett, M.D* (London: printed for R. Baldwin, 1768-69), 254.

emersions of Jupiter's moons was praised by his peers within the scientific community in the *Philosophical Transactions* of London's Royal Society.[91] Similar observations were taken during the surveying of St. John's Island and the other jurisdictions charted as part of the General Survey by other deputy surveyors, positioning different Indigenous landscapes in the Northwest Atlantic beneath a settler cosmos "by the mean result of several observations of the distance of the Moon, from the Sun and fixed stares."[92]

Wright's second map was reflective of a different kind of spatial knowing, produced by the Innu, whose uses of the land contour the details of Wright's published report. This is the lived-in knowledge of *Natashquan*, the original Innu name of the island meaning "the place where we hunt bear" that Wright knew as Anticosti.[93] Only with the help of the Innu on Natashquan was Wright able to describe its flora and fauna, the lakes concealed by trees, and even the seasonal hibernation of the bears whose predominance on the island shaped Indigenous cosmologies of the landmass. Using the cosmos, recording the eclipses of Jupiter's first satellites–its moons–Wright the astronomer was able to perfect the longitude and latitude of Anticosti in relation to the prime meridian at Greenwich and construct a more accurate outline of the landmass for Britain's cartographic archive. As a settler scientist, Wright refracted different forms of Indigenous expertise of the landscape that derived from Innu modes of life, land use, and generations of habitation on Natashquan, and consequently produced a report of a deserted island in

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[91] Samuel Holland, "Observations made on the Islands of Saint John and Cape Breton, to ascertain the Longitude and Latitude of those Places, agreeable to the Orders and Instructions of the Right Honourable the Lords Commissioners for Trade and Plantations: By Captain Holland, Surveyor General in Canada, and his Assistants.," in *The Philosophical Transactions*, 58 (1768): 52-53.
[92] Holland, "Observations," 49.
[93] "Natashquan," from *Nametau Innu: Memory and Knowledge of Nitassinan*, http://nametauinnu.ca/en/culture/nation/detail/68 [accessed November 3, 2021].

the Gulf of St. Lawrence. By using both visual and written means to depict Anticosti as empty, Wright demonstrates how settler colonial spaces were more than the fictive imaginings of empire. Colonial space was an invention, assembled by way collecting information about the earth and heavens through means of systematic observation, the use of scientific instruments such as telescopes and quadrants, and the theft of Indigenous natural knowledge. The erasure of the latter was necessary for Britain to foist its invented sovereignty upon the expansive territories in the Northwest Atlantic that had been acquired from France and reimagined by way of the General Survey, wedding the political interests to Britain to that of observational and natural sciences.

The erasure of both the assistance and existence of the Innu of Natashquan allowed Thomas Wright to position Anticosti Island within a British settler colonial sphere. The Observation River was even renamed the Jupiter River in light of Wright's use of the planet while he was camped at its mouth. Once Wright quit the island in mid-June of 1767, he embarked for the Gaspé and then returned to England to deliver his astronomical observation to the Astronomer Royal at Greenwich.[94] He returned to North America in 1769 to observe the transit of Venus from Quebec and rejoined the General Survey of the Northern District the following year to survey the Territory of Sagadahoc, the part of the coast between the Saint John and Penobscot Rivers.[95] Shortly thereafter, Wright was appointed the Survey General of Prince Edward Island, formerally St. John's Island, which had been made a separate colonial jurisdiction in 1769. As Stephen Hornsby observes, "because proprietors, rather than the Crown, held most of the land,

[94] H. T. Holman, "Wright, Thomas."
[95] Hornsby, *Surveyors of Empire*, 73; Elizabeth Mancke, *The Fault Lines of Empire: Political Differentiation in Massachusetts and Nova Scotia, 1760-1830* (New York: Routledge, 2005), 18.

there was little for Wright to do," allowing him to also accept a position on both the colony's Executive Council and Supreme Court.[96] In 1775, Wright and other leading administrators were taken prisoner by American privateers who raided Charlottetown but were released soon after by order of General George Washington. The turbulent years that followed were wrought by both revolutionary upheavals elsewhere on the continent and, after 1780, financial difficulty caused by the refusal of proprietors to pay rents to support the colonial administration on Prince Edward Island. Wright weathered the situation, but was mired in political scandal caused by other government officials and despite his unpaid work as Surveyor General, which earned him a vote of thanks in 1788 by the assembly.[97] In 1791 Wright complained to Lord Grenville, the British Home Secretary, "I wish but to be useful to the publick as well to my family, here I am of little to either," and in turn, Wright was appointed astronomer for the British side in the International Boundary Commission to determine which river that flowed into the Passamaquoddy Bay was the St. Croix.[98]

### 2.4 The Scientific Search for the St. Croix River

The search for the St. Croix River began almost immediately after the signing of the Treaty of Paris on 3 September 1783, which formally ended the American Revolutionary War and began an international dispute between Britain and the newly independent United States regarding where the boundary started. Despite the Treaty's use

[96] Hornsby, *Surveyors of Empire*, 209.
[97] "House of Assembly resolution re. appreciation of the good service of Thomas Wright," *Wright Family Papers*, item no. 388, PAROPEI.
[98] Quoted in H.T. Holman, "Wright, Thomas," [DCB].

of the St. Croix River as the topographical marker to mark the start of the line between British North America and the United States, no agreement could be made between settler or imperial governments about which river that entered into the lower Bay of Fundy was the actual body designated by the peace agreement. Just over a month after the ratification of the treaty, a report was sent to John Hancock, the Governor of the Commonwealth of Massachusetts, about a group of Nova Scotia settlers encroaching upon "the East of a River known by the name of Skudoock or the St. Croix." According to the report, the Nova Scotian settlers made reference to another river "called the Petit St. Croix or the Eastern River on the Bay," as being the ancient boundary between the provinces of Massachusetts and Nova Scotia, and therefore believed themselves to be within British territory according to the terms of the Treaty of Paris.[99] Within a decade, the boundary dispute between Massachusetts, Nova Scotia, and, after 1784, New Brunswick erupted as a result of confusion over which river was the "True" St. Croix.[100]

The historical scholarship on the boundary dispute after 1783 has emphasised its significance as a watershed moment for emerging international diplomatic relations between nation states, the economic importance of timber in the northwest Atlantic, and the strategic position of the border in relation to the larger Saint John River.[101] Francis

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[99] "Report to John Hancock on Nova Scotian encroachments on the Massachusetts side of the river St. Croix, 23 October 1783," in *The Winslow Papers*, Vol. 3-36. HIL-MICL FC LFR .W5E3P3, Harriet Irving Library, UNB.

[100] David Demeritt, "Representing the "True" St. Croix: Knowledge and Power in the Partition of the Northeast," *The William and Mary Quarterly* 54, no. 3 (July 1997): 515.

[101] Samuel Flag Bemic, *Jay's Treaty: A Study in Commerce and Diplomacy* (New Haven: Yale University Press, 1962); Jerald A. Combs, *The Jay Treaty: A Political Battleground of the Founding Fathers* (Berkley: University of California Press, 1970). For a more recent analysis on the politics of the border, see Lilian Eva Dyck and Dennis Patterson, *Border Crossing Issues and the Jay Treaty* (Ottawa: Standing Senate Committee on Aboriginal Peoples, 2016).

Carroll's study, *A Good and Wise Measure*, provides perhaps the most comprehensive analysis of these themes woven together in the lead-up to the 1842 Webster-Ashburton Treaty, but fewer scholars have considered the dispute within the context of developing European geographic knowledge of the eastern American seaboard and the process of empire building and rebuilding over the long eighteenth century.[102] Though much of the scholarship recognises that the earlier Treaty of Paris, which ended the Seven Years' War in 1763, had a bearing on establishing the so-called "ancient" boundary between the British provinces of Massachusetts and Nova Scotia, few acknowledge that the region was already defined by complex Indigenous economic and diplomatic systems that had informed settler occupation around the Passamaquoddy Bay for decades.[103]

The significance of Indigenous use and expertise of the many rivers around the lower Bay of Fundy was not altogether dismissed by either American or British officials responsible for locating the border in the aftermath of "the ill-judged scratch of a pen on a map in Paris in 1783."[104] Indeed, the dispute over the northeastern boundary foreshadowed Anglo-American rivalry for territory in North America that persisted late

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[102] A noteworthy exception is David Demeritt's article "Representing the 'True' St. Croix." Demeritt certainly positions his analysis of the dispute and the legal questions raised by the boundary commission after 1796, by asking how colonial sovereignty was framed within precepts of Christian imperialism that developed over the long eighteenth century. However, Demeritt's argument regarding the dispute after 1783 rests on the idea that the commissioners founded their legal case largely on European concepts of property ownership and title, and "ignored native peoples except as they affected American relations with Britain and other European powers," without asking how Indigenous geographic knowledge was coopted by settlers/imperialists to reinforce their vision of sovereignty through property. Quoted from Demeritt, "Representing the 'True' St. Croix," pp. 521.

[103] Rachel Bryant, "Transcending the St. Croix Legacy in the Northeast Borderlands," *Native American and Indigenous Studies*, 1, no. 1 (Spring 2014): 55-59.

[104] R.D Tallman & J.I. Tallman, "The Diplomatic Search for the St. Croix River, 1796-1798," *Acadiensis* 1, no 2 (Spring 1972): 59.

into the nineteenth century and the participation of Indigenous peoples was central to arguments made by settlers on either side of the border. Empires were built by the repetition of geographical mistakes in colonial space that created significant imperial problems and a need for unique settler solutions. For the negotiators at Paris, the errors cartographically reproduced by John Mitchell in his 1755 *Map of the British and French Dominions in North America* required that colonial officials on the ground in either New Brunswick or Massachusetts could find ways to irrefutably verify their claims to territory during the St. Croix Commission. The Commission was created by the terms of the Jay Treaty, signed between Britain and the United States in 1794, which was meant to facilitate peaceful relations between the two nations and resolve outstanding issues such as the boundary between British and American territory. The St. Croix Commission was formally established in the autumn of 1796, marking the beginning of modern diplomatic arbitration "when it provided that a three-member joint commission determine which river flowing into Passamaquoddy Bay was the St. Croix."[105] Both the British and American governments named their own commissioner, and they, in turn, would choose a third. Thomas Barclay, a former colonel during the Revolutionary War and a staunch New York Loyalist was chosen as the British commissioner. George Washington appointed David Howell, a Rhode Island attorney and professor of law at Brown University to be the American commissioner. Together, at the first meeting of the Commission in Halifax in August 1796, Barclay and Howell selected Egbert Benson, a New York Supreme Court judge, to be the third.[106]

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[105] Howard Jones, *To the Webster-Ashburton Treaty: A Study in Anglo-American Relations*, 1783-1843 (Chapel Hill: University of North Caroline Press, 1977), 7.
[106] John Bassett Moore, *History and Digest of the International Arbitrations to Which the United States Has Been a Party* (Washington, DC: Government Printing Office, 1898), 7-

The diplomatic search for the St. Croix River was supported by Edward Winslow and Ward Chipman, both Massachusetts-born Loyalists trained at Harvard College and appointed respectively as secretary and agent for the British case to the Commission. The United States appointed James Sullivan, a lawyer and Congressman, and later a judge of the Massachusetts Supreme Court, as their agent. Together, Chipman and Sullivan became "key figures of the St. Croix Commission," who laboured tirelessly to ground their arguments in the language of the 1783 treaty, the testimony of negotiators in Paris about their use of the Mitchell Map, and depositions taken from residents of Passamaquoddy Bay following the first meeting of the Commission in Halifax.[107] The scientific search for the St. Croix River was done by Thomas Wright and Samuel Webber, a clergyman and mathematician from Harvard College who was appointed astronomer for the American contingent. Both men were responsible for jointly producing a new survey of Passamaquoddy Bay for the St. Croix Commission. However, Wright's contribution would play a pivotal role in the outcome of the boundary dispute, and his findings were a direct result of both his familiarity with the area and experience working with and without the assistance of Indigenous informants during his apprenticeship under de Brahm in Georgia and while on Anticosti for the General Survey.

The St. Croix Commission met for the second time in St. Andrews, New Brunswick in August of 1796. At this meeting, Sullivan outlined the American claim that the river intended by the Treaty of Paris to be the St. Croix was the Magaguadavic River,

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15; and Thomas Barclay to Lord Grenville, 30 Aug. 1796, in George Lockhart Rives, ed., S*elections from the Correspondence of Thomas Barclay: Formerly British Consul General at New York* (New York: Harper & Brothers, 1894), 56-60.

[107] Tallman, R.D. & J.I. "The Diplomatic Search for the St. Croix River," 62.

on the eastern side of Passamaquoddy Bay.[108] He reasoned that the Mitchell map must have interpreted the Magaguadavic as the ancient boundary between the provinces of Massachusetts and Nova Scotia because Mitchell positioned the line from the Bay of Fundy to a lake-source (Kousaki Lake on Mitchell's map), and then due north. Sullivan argued that earlier maps "of Provincial boundaries in the reign of Queen Anne, & all the succeeding maps, exhibit a Lake as the fountain of the Saint Croix, which is Situated very nearly with the one called on the plans from the Surveys Look Lake. That Lake was then called Thousaki."[109] Ward Chipman, as Britain's agent, was less convinced by Sullivan's reading of the Mitchell map as the evolutionary result of earlier accurate surveys, and instead countered that the Schoodic River, which flowed west from St. Andrews, was the St. Croix. In turn, the commissioners visited both the Magaguadavic and Schoodic rivers by boat in September and October.[110] At that time, Wright and Webber parted company with the rest of the commission and began to map the two rivers by taking latitude and longitudinal readings. While the astronomers continued to work in New Brunswick, the rest of the commission reconvened for the third time in Boston in July 1797 to hear depositions taken from settlers and Indigenous peoples around different parts of Passamaquoddy Bay.

At Boston, Sullivan continued to challenge the British claim that the Schoodic was intended to be the boundary. Indigenous testimony was central to his argument in favour of the Magaguadavic because, according to Sullivan, "Every one knows that the

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[108] Carroll, *A Good and Wise Measure*, 15.
[109] James Sullivan, "Remarks made by the Agent for the United States on the supplemental argument of the Agent of his Britannic Majesty, 1796," in Raymond, ed., *Winslow Papers*, 53.
[110] Carroll, *A Good and Wise Measure*, 15.

native Indians with their paint will draw rivers, lakes, & ponds, with a great share of exactness." Sullivan was convinced that the testimony he collected while in New Brunswick emphasised not only the relevance of the Magaguadavic's length in relation to the series of lakes just in-land, but also:

> If the Lakes on the West branch of the Scoodiac [sic] were intended, or contemplated, as the Source of the Saint Croix, that their appearance on the maps from the beginning of Queen Anne's reign, to the American Revolution, would have given them the appearance of Something in form on maps, resembling what in fact they are found to be in Nature.[111]

However, Sullivan's belief that the Mitchell map had somehow reproduced accurate local knowledge by way of replicating earlier maps of the region did not stand up to scrutiny from the perspective of the British commissioner and agent. Suspicious of its depiction of Passamaquoddy Bay, Chipman hired Robert Pagan, a Loyalist and sheriff in St. Andrews, to investigate the validity of the Mitchell Map by reviewing features of the map against the actual topography of the bay.[112] In time, Pagan found that Mitchell not only miss-represented the size of various islands in the bay and outright erased Campobello Island.[113] Of the two rivers, Pagan found that Mitchell's depiction of the St. Croix indicated that the river was navigable for ships and small vessels, which the Schoodic was and the Magaguadavic was not.

Once the Mitchell map's authority was called into question, according to R.D and J.I. Tallman, "Sullivan increasingly relied upon the testimony of Indians to substantiate

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[111] Sullivan, "Remarks," in *The Winslow Papers*, 53.
[112] Tallman, R.D. & J.I. "The Diplomatic Search for the St. Croix River," 64.
[113] Robert Pagan, "Remarks on Captain Cyprian Southack's Plan of his coast," 26 October 1797, in *The Barclay Collection: Papers of the St. Croix Commission and Commissioners Following the Treaty of Ghent Appointed to Agree on a Canadian American Boarder Between Passamaquoddy Bay and the Great Lakes: 1764-1827*, reel 1, Unbound Manuscripts, MIC-Loyalist FC LSC .U5M3B3C6.

the American case," but evidence collected by Thomas Wright in 1772 and between 1796-97 during his surveys of Passamaquoddy Bay exasperated Sullivan's argument.[114] While Wright and Samuel Webber took longitude and latitudinal readings of the Magaguadavic and Schoodic rivers in relation to observatories at Greenwich and Cambridge, Wright kept a meticulous account about the science of positioning the rivers in both time and geographic space. After arriving at St. Andrews, Wright oversaw the construction of a large temporary observatory erected less than a kilometer outside the town on Pottery Cove.

The structure's wooden foundation was bedded into the ground in late September, "and spruce planks firmly spiked upon them" supporting two enclosed platforms.[115] The frame and roof were walled and covered by painted canvass, sheltering all types of equipment including timepieces, quadrants, and telescopes. When finished, the rude structure stood roughly three meters high, and was large enough for both Wright and Webber to take corresponding altitudes of the sun, moon, and other fixed stars over several weeks. The observatory at St. Andrews was the first to be built in New Brunswick and was furnished with the most modern instruments available. According to Wright, "Two Clocks were fixed on one part of the Platform," both of British make, including a "lever pendulum vibrating seconds" designed by John Ellicott, the preeminent clockmaker noted for successfully modifying John Harrison's gridiron pendulum.[116]

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[114] Tallman, R.D. & J.I. "The Diplomatic Search for the St. Croix River," 65.
[115] Thomas Wright, "Report of the Astronomical Observations made at St. Andrews Town in Passamaquoddy Bay," Provincial Archives of New Brunswick, MC 1042: Report on the Boundary Line Between Britain and the United States of America: (6 June 1799).
[116] Thomas Wright, "Report of the Astronomical Observations made at St. Andrews Town in Passamaquoddy Bay."

Harrison famously solved the problem of calculating longitude at sea in 1730 with the invention of his marine chronometer, but his devise was not immune to problems caused by cold temperature. Ellicott developed a temperature compensated pendulum in 1753 that could withstand irregularities while keeping precise time caused by excessive heat and cold–a necessity for keeping accurate time in the Passamaquoddy Bay.[117] Because the St. Croix Commission demanded nothing but the most precise measurements and readings from their astronomers, the use of a clock designed by Ellicott is not an insignificant detail. If Wright and Webber's clock lost even a second per day in the space of time that they calculated the longitude of the mouth of the Schoodic River between 20 September and 15 November, then their last reading would have positioned the river's mouth nearly two kilometres further west than their first. To reduce the cumulative risk of lost seconds, the clock was set each day according to Wright and Webber's corresponding observations of the sun at mid-day, grounding their work in both British and American readings of the sun.[118]

Within two months, Thomas Wright and Samuel Webber calculated the geographic distance of the observatory at St. Andrews from the prime meridian at Greenwich, Cambridge, and in turn, positioned the Schoodic and Magaguadavic rivers in

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[117] Rebekah Higgitt, "Equipping Expeditionary Astronomers: Nevil Maskelyne and the Development of 'Precision Exploration'," in Fraser MacDonald and Charles W.J. Withers, eds., *Geography, Technology and Instruments of Exploration* (Abingdon, Oxford: Routledge, 2015), 15-36; John Ellicott, *A description of two methods, by which the irregularities in the motion of a clock, arising from the influence of heat and cold upon the rod of the pendulum, may be prevented. By John Ellicott, F.R.S. Read at the Royal Society, June 4, 1752. To which are added a collection of papers* (London: Printed for R. Willock, 1753).

[118] At 45˚ north latitude one second of one degree of longitude is roughly 36 meters east/west. If a single second is lost over 56 days that equals 2016 meters or 2.016 kilometers.

relation to their temporary structure. Latitudinal readings were measured using a method of lunar distancing, as well as the collection of corresponding observations of the sun and other fixed stars in relation to an artificial horizon line fashioned using "a saucer of Olive Oil, covered with a Glass roof made by [John] Dollond, the two glass planes with parallel surfaces being set in a mahogany frame at a fixed right angle."[119] Finding precise longitude was still the more arduous task, but nonetheless central to the boundary question because Sullivan favoured the more easterly Magaguadavic River, while the British agent, Ward Chipman, was confident the Schoodic, on the western side of Passamaquoddy Bay, was the true St. Croix. Wright and Webber relied on the timing of the "Eclipses of Jupiter's 1st & 2nd Satellites," which they compared to similar observations made at Greenwich and published in *The Nautical Almanac* to calculate the longitude of both rivers. Wright became familiar with the accuracy of this method while on Anticosti, and both astronomers agreed that circumstances in Passamaquoddy Bay were "favourable to the accuracy of the result that there are both immersions and emersions of the first satellite, and that they are nearly equal in number."[120] However, Webber was forced to leave Passamaquoddy Bay after 30 September for reasons not stated in Wright's account, and he did not return until 23 October. In that space of time, Wright surveyed Bone Island, a tiny islet located in the mouth of the Schoodic River just above St. Andrews and the observatory at Pottery Cove.

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[119] Dollond was an English optician, known for his successful optics business and patenting and virtual monopoly on the sale of achromatic object-glasses. Thomas Wright, "Report of the Astronomical Observations made at St. Andrews Town in Passamaquoddy Bay."

[120] Thomas Wright, "Report of the Astronomical Observations made at St. Andrews Town in Passamaquoddy Bay."

Wright visited Bone Island once before, during his first survey of Passamaquoddy Bay in 1772. At that time, he labelled the small landmass St. Croix Island, however, he could not then have anticipated the island's role in the later dispute between Britain and the United States.[121] Twenty years later, during his interrogation by the St. Croix Commission, Wright was quite candid about the irrelevance of the name of Bone Island, or even the name of river that it sat in to his larger survey because the "whole Territory on every side… was the Dominions of Great Britain."[122] Nonetheless, Chipman was optimistic that an excavation might reveal evidence that Bone Island was the site of Samuel de Champlain's failed colony of Isle de Saint Croix. When Chipman instructed Wright to re-survey the small islands of the Schoodic River in the absence of Webber, he added that "it should be thought expedient, to make further discoveries by digging upon those Islands."[123]

Accompanied by Robert Pagan, John Currie, who was the Justice of the Peace for Charlotte County, and other residents from St. Andrews, Wright made the short trek from the observatory at Pottery Cove to the tiny islet a few kilometers upriver. It was there that he discovered the remains of wooden fortifications, with a foundation roughly twenty by

[121] Minutes from file book of survey of Passamaquoddy, 1772, *Wright Family Papers*, Smith/Alley Collection, PAROPEI, CA PCA Acc2702-s14, item no. 399.
[122] "Interrogation of Thomas Wright, 24 October 1797," in The Winslow Papers vol. 9-21.
[123] Ward Chipman to Thomas Wright, 22 September 1797 in *Wright Family Papers*, Smith/Alley Collection, PAROPEI, CA PCA Acc2702-s14, item no. 391.

fifty-six feet in size, and bricks, presumably from a chimney, as "some of the stones about this supposed Chimney-heap appeared black, as if burnt on one side."[124]

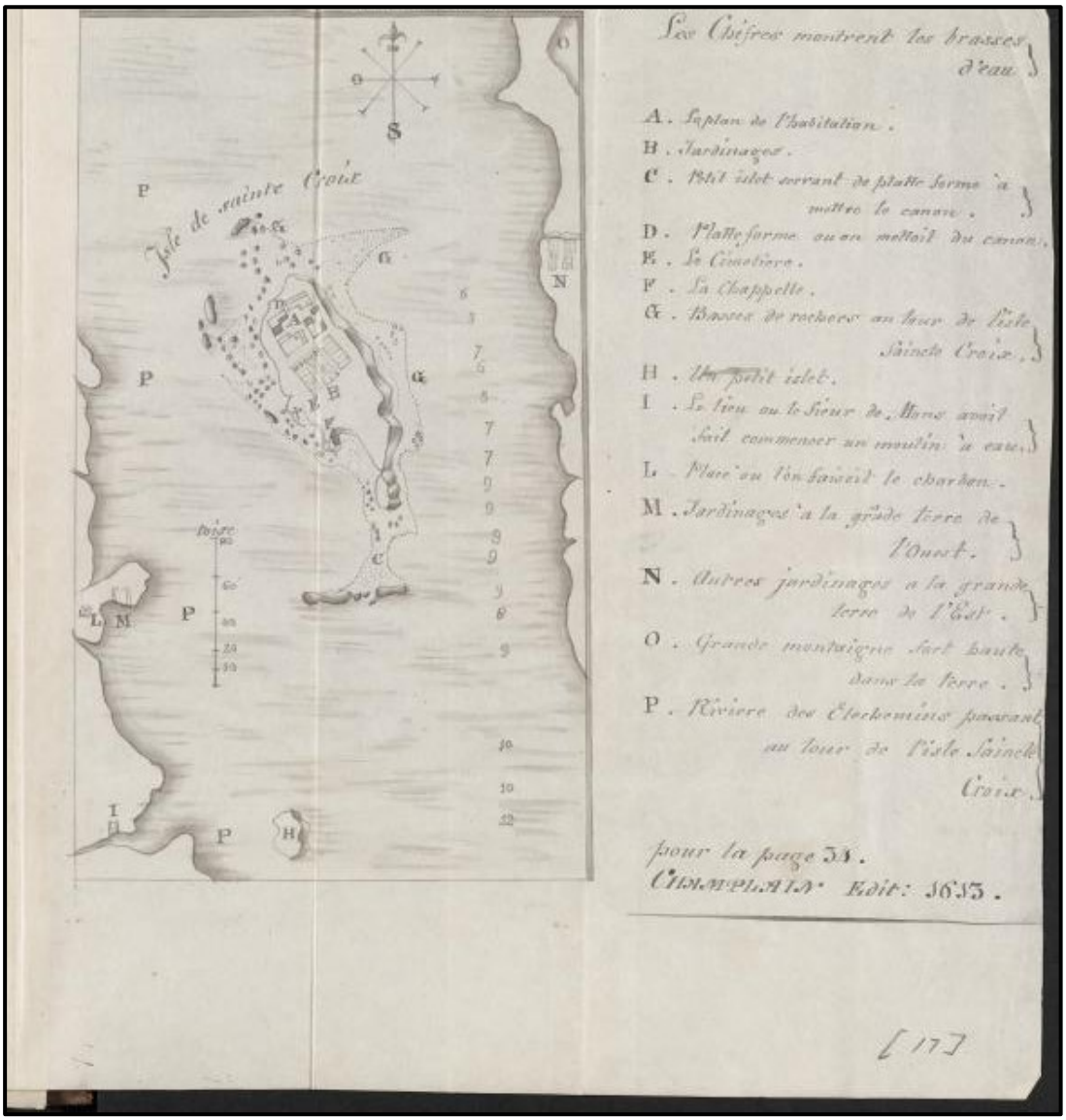


**Figure 2.5** ***Champlain map copy, St. Croix or Bone Island, ca. 1799*****, Barclay Collection, Coll. 26 B2 F17, Maine Historical Society.**

[124] "Deposition of Thomas Wright, Surveyor-General of the Island of Saint John, respecting the boundary between the U.S. and N.B., 24 October 1797," in The Winslow Papers, vol. 9-20.

The Commission was already in possession of documents about the attempted settlement, including a copy of Champlain's own survey of the island (see Figure 2.5), and Pagan was certain that the ruins uncovered by Wright's expedition to the Bone Island matched precisely "where in [Champlain's] plan above mentioned the French buildings

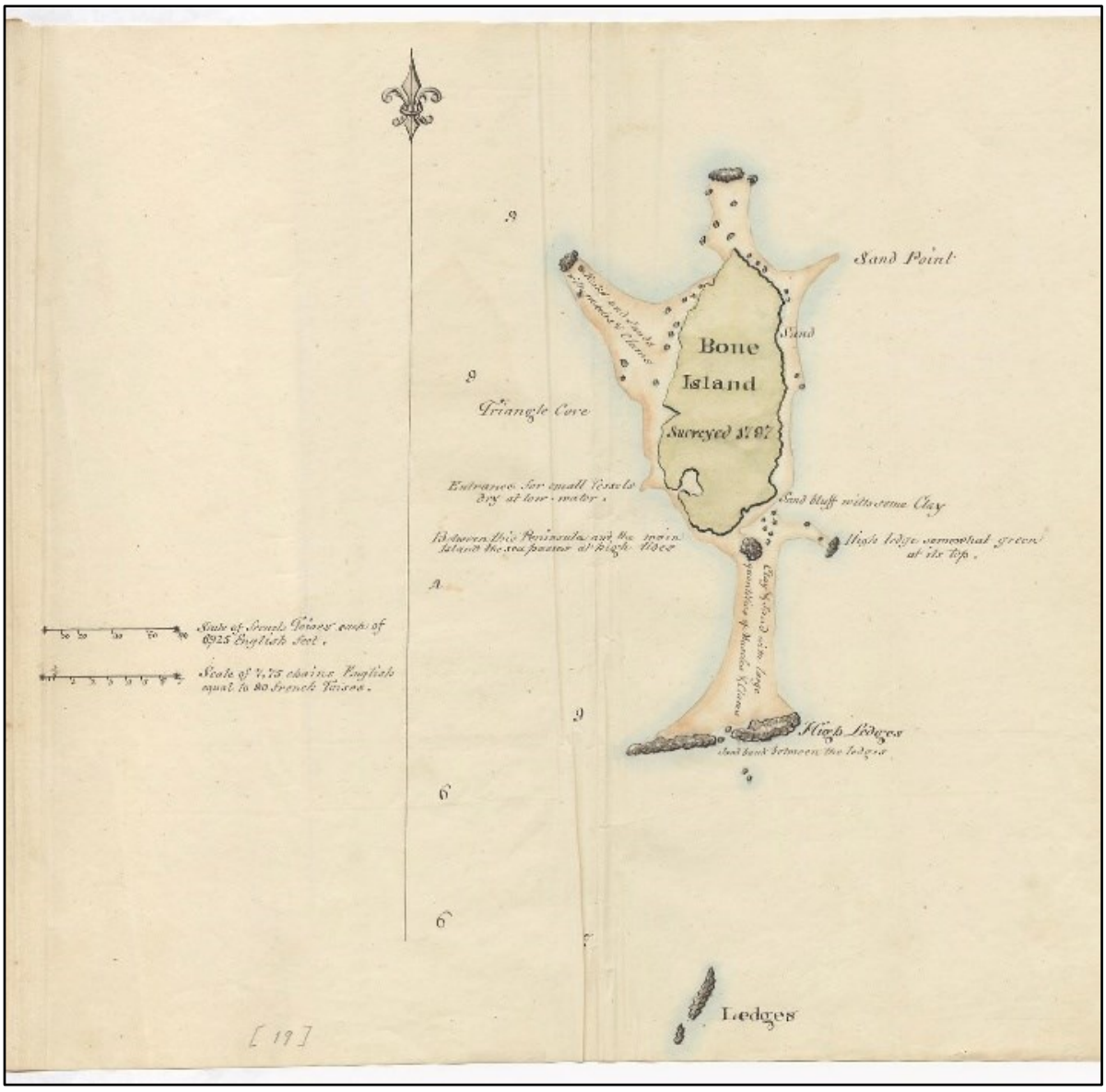


**Figure 2.6 Survey of Bone, or Saint Croix Island, 1797, The Barclay Collection, Maine Memory Network, Coll. 26, Box 2, Folder 17.**

are laid down."[125] For Chipman, the unearthing of a foundation on Bone Island was unassailable proof that it was the site of Champlain's Isle de Saint Croix settlement but Sullivan insisted on challenging Wright's decision to label the islet St. Croix two decades before the discovery of the foundation (see Figure 2.6).

Reflecting on his first experience in Passamaquoddy Bay during his deposition to the St. Croix Commission, Wright recalled that he was not informed "by any person or persons, that the River Scoodic had been for any Time or space been known by the name of St. Croix River." Rather, he "obtained these names, together with others expressed on the plan of my survey from the then resident Indian Inhabitants of the District."[126] Many of the names used in Wright's survey came from a man named Munro or Moreaux (both spellings appear in Wright's field book), who was a resident of Campobello Island and on several occasions acted a guide to a company of Liverpool merchants. Wright frequently encamped near Munro's home during his survey, and consequently Munro accompanied him as he travelled between the islands of the bay and acted as an intermediary with different Indigenous residents of Passamaquoddy Bay. In time, Munro furnished Wright with nearly two hundred Indigenous place names for his survey. When asked by the Commission why he chose the name St. Croix for the islet in the Scoodic River, Wright plainly stated that he took the name "in like manner as of every other place that I surveyed and was a stranger to, from the Inhabitants of the District."[127] In that one

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[125] Notes on a meeting of the commissioners of the boundary settlement, 14 August 1797, in The Winslow Papers, vol. 9-9; Deposition of Robert Pagan, July 20,1797, in *International Adjudications*, ed. Moore, 2, 103-104, quoted in, David Demeritt, "Representing the "True" St. Croix," 541.

[126] "Interrogation of Thomas Wright, 24 October 1797," in The Winslow Papers vol. 9-21.

[127] "Interrogation of Thomas Wright, 24 October 1797," in The Winslow Papers vol. 9-21.

statement, Wright evoked nearly three decades of experience using local knowledge, both from settlers and Indigenous peoples, which confirmed to him that "the said Isle de St. Croix or Bone Island was the Identical spot on which the said Frenchmen made their settlement."[128] Sullivan endeavoured to find evidence that Champlain settled at the mouth of the Magaguadavic, but to "his great mortification and disappointment … he could find no island there."[129]

Thomas Wright's career as an astronomer and settler scientist spanned the last four decades of the eighteenth century, as he contributed to some of the most historically significant moments in both the cartographic history of North America and Anglo-American relations. His work was instrumental to land speculation and settlement in Georgia, the safe navigation of the Gulf of St. Lawrence, and the securing of the boundary between British and American territory on the continent. How he relied on local informants and the way that refusal shaped the maps that he produced is not unlike many other cartographers and settler scientists operating in Nort America. Wright's career ebbed and flowed parallel to changes, challenges, and disruptions to empire building in the British Atlantic and reveals important threads of continuity between the end of the Seven Years' War and the start of the nineteenth century. Interpreting Wright's career from its beginnings in 1763 to 1799 demonstrates the vital role that Indigenous peoples played in the construction of European maps, and how their knowledge of the natural world was taken and then refracted by settler scientists such as Thomas Wright. The inclusion and analysis of his and Webber's report of astronomical observations taken at

[128] "Interrogation of Thomas Wright, 24 October 1797," in The Winslow Papers vol. 9-21.
[129] Thomas Barclay to Lord Grenville, 24 Oct. 1796, in Rives, ed., *Thomas Barclay*, 65-8, quoted in, Carroll, *A Good and Wise Measure*, 16.

St. Andrews also adds to the scholarship about the St. Croix Commission: demonstrating that the search for the St. Croix River was as much a scientific venture as it was a diplomatic one for Britain and the United States. Finally, Wright's excavation of Bone Island, which was the result of Ward Chipman's own suspicions about the change in name between 1772 and 1797, and how locals understood that place, transformed an important waterway, "once used [by the Passamaquoddy peoples] to connect, sustain, and transform relations in the region," into the boundary between the newly minted colony of New Brunswick and the state of Massachusetts.[130] Wright's involvement in the securing of New Brunswick's western edge, though not well-documented in the scholarship on the subject, was the introduction of science in the service of empire in the province, as later settler scientists continued to work with and ultimately against Indigenous peoples in the construction of natural knowledge in about the region.

[130] Bryant, Rachel. "Transcending the St. Croix Legacy in the Northeast Borderlands," 57.

## **Chapter Three**:

### A Collegiate School in New Brunswick

Although the St. Croix Commission was a major accomplishment for Britain and its diplomatic relations with the United States, its aftermath left many questions unanswered. The boundary between British and American territory was in doubt regarding the islands of Passamaquoddy Bay, and in the north, above the source of the St. Croix River, large sections of land remained disputed between Britain and the United States, and between New Brunswick and the province of Lower Canada.[1] Though his case was defeated, James Sullivan remained in favor of joint commissions as a method for settling cases of disputed territory between nations, "rather than choke the rivers with their slain."[2] But others such as Ward Chapman and Edward Winslow were cognizant of the logistic concerns that method posed to New Brunswick. Indeed, New Brunswick was plagued with problems arising from poor land surveys, allocation, and settlement since its inception in 1784 and these problems were exacerbated by a lack of resources and persons capable of undertaking either the task or necessary calculations.[3] Writing in June

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[1] James Tibbits and A.J. Christie, *Memorandum on commission of expertise on disputed territory and boundary survey accounts between New Brunswick and the late Province of Canada (*Ottawa: publisher not identified, 1880); Henry Burrage, *Maine in the Northeastern Boundary Controversy* (Portland: Printed for the State, 1919). See also, Francis Carroll, "The Passionate Canadians: The Historical Debate about the Eastern Canadian-American Boundary," *New England Quarterly* 70, no. 1 (1997): 83-101.
[2] Quoted in Francis Carroll, *A Good and Wise Measure: The Search for the Canadian-American Boundary, 1783-1842* (Toronto: University of Toronto Press, 2001), 18-19.
[3] Jeffers Lennox, *North of America*, 210; See also, W.S. MacNutt, *New Brunswick: A History, 1784-1867* (Toronto: Macmillan of Canada, 1963), 210; Ann Condon, *The Envy of the American States: The Loyalist Dream for New Brunswick* (Fredericton: New Ireland Press, 1984), 140, 153-158; T.W. Acheson, "The 1840s: Decade of Tribulation," in Phillip Buckner and John Reid, eds., *The Atlantic Region to Confederation: A History* (Toronto: University of Toronto Press, 1994), 331.

of 1800 to John Wentworth, Nova Scotia's Lieutenant Governor, and reflecting upon the outcomes of the St. Croix Commission, Winslow lamented that "The Commissioners who determined what river was the St. Croix truly intended by the Treaty of peace, could not proceed a step farther than the source of that river."[4] Wright and Webster proved to be capable assets whose previous training facilitated the scientific search for the St. Croix, but they were nonetheless "prevented," according to Winslow, "from ascertaining the Latitude & Longitude of the source" of the river from a combination of want of supplies, bad or non-existent land surveys, and no settler population from which draw a knowledge base from.[5] Lacking such data certainly exacerbated the dispute about the border, and amplified by the proliferation of small rivers and streams in the area. The natural sciences, practical knowledge and empirical collection of data confirmed at least part of New Brunswick's border had proven itself to be an important tool that could be used to reaffirm the colony's political jurisdiction.

This chapter examines the institutionalization of knowledge production in New Brunswick, and how the creation of an academy of arts and sciences in Fredericton in turn shaped the colony's political landscape. How knowledge–specifically geographic knowledge–was mobilised secured part of New Brunswick's western border and remained an important political resource that the House of Assembly used to assert its jurisdictional authority through to the nineteenth century. Science demonstrably served the political interests of empire in the Passamaquoddy Bay during the St. Croix

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[4] Edward Winslow to John Wentworth, 24 June 1800, in Raymond, W.O., ed., *Winslow Papers, A.D. 1776-1826* (Boston: Gregg Press, 1972), 450.
[5] Edward Winslow to John Wentworth, 24 June 1800, in Raymond, *Winslow Papers,* 450.

Commission, and certainly had the capacity to serve the interests of the province's governing and political class. Shortly after the province became a separate colonial entity from Nova Scotia, elite Loyalist refugees worked for the establishment of a collegiate institution for their children. Seeking a system of liberal education that would secure future generations of leaders in the province, the elite Loyalist who comprised both the Executive Council and Judiciary came to political blows with the province's House of Assembly, which favoured a more democratic and practical knowledge type of training that better reflected the necessities of colonial life. Challenges to the school's land ownership, educational programme, and the desire of politically elite white settlers to exploit and leverage unceded Indigenous lands and waters for the maintenance of a collegiate institution in New Brunswick exacerbated this struggle. In an effort to build a nexus for the production of knowledge about the lands and waters to be occupied by "the most gentleman like society on earth," the fraught formation of what was to become the present-day University of New Brunswick became central to the development of the settler state in Britain's most lucrative timber colony.[6]

Using petitions, minutes of the College Board, and the legislative record, as well as the correspondence of members of the Executive Council, this chapter traces the evolution of Fredericton's collegiate institution from 1785 to 1829. Different settlers held to different versions for the development of a system of higher education in New Brunswick, which would either produce better settlers or reproduce New England and

[6] Edward Winslow to Ward Chipman, July 7, 1783, *Edward Winslow Papers*, MG H2, vol. 2, pt. 2, 104, Harriet Irving Library (hereafter HIL), digitized for the Atlantic Canada Virtual Archives, http://atlanticportal.hil.unb.ca.proxy.hil.unb.ca/acva.

mid-Atlantic genteel status for an elite class of refugees.[7] This chapter argues that the development of this system, and the struggle to define it, likewise redefined the powers of the elected and appointed branches of government. The founding, and later incorporation, of a provincial academy, as well as that school's status as a large landowner in Fredericton, set the stage for a constitutional fight over whom controlled education. Investigating the connections between the Fredericton collegiate school and the mission-school established by the New England Company in Sussex Vale also shows the lengths at which the Executive was willing to go to preserve their version for higher education in New Brunswick, and how they inadvertently sowed the seeds of their own ruin by doing so. The creation of a nexus to produce scientific knowledge in New Brunswick shaped the development of the settler colonial government in salient ways hitherto analysed by historians.

### 3.1 Schooling Refugees

Members of New Brunswick's political elite first proposed using land as foundational capital for a collegiate institution in 1785, while also designing their college to benefit only the children of the province's most affluent. For the refugees of the American Revolution, the expense of sending the children of Loyalists away to England to complete their education cost more than the value of land in New Brunswick during the

[7] Elite Loyalists saw education as one path to positions in government and to recreating positions lost because of civil war and forced relocation. See Ann Condon, *The Envy of the American States*, 193-200; Maya Jasanoff, *Liberty's Exiles: American Loyalists in the Revolutionary World* (New York: Knopf, 2012), 150-151; Bonnie Huskins, "'Shelburnian Manners': Gentility and the Loyalists of Shelburne, Nova Scotia," *Early American Studies* 13, no. 1 (Winter 2015): 151-188.

late eighteenth century.[8] A fear persisted amongst the province's leaders that individuals who attended college or university in the newly independent United States might return corrupted by republican ideals.[9] Of his own son, Ward Chipman, born in Massachusetts and trained at Harvard College before becoming New Brunswick's first Solicitor General, feared that in "looking beyond some of these Provinces for his future, he will never be contended to starve, as I have done, in this part of the Country."[10] New Brunswick offered little in the way of upward mobility or educational prospects for children, regardless of their parentage, and colonial administrators sought to "localize the universal culture taught in British Universities" as a means of preserving the social order to which they had become accustomed and sought to reproduce in New Brunswick.[11] For more middling refugees, the potential leveling influences of British-style higher education did not supersede their immediate concerns with lack of rudimentary education, such as reading and writing, mathematics and geometry, the lack of which compounded the serious

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[8] The Loyalists were a remarkably mobile group of settlers, but mobility for the educational pursuits was less common. See Maya Jasanoff, *Liberty's Exiles*, 9. Those Loyalists that stayed in New Brunswick were likewise not a homogenous group, and so projected different expectations of colonial development and education. See David G. Bell, *Early Loyalist Saint John: The Origin of New Brunswick Politics, 1783-1786* (Fredericton: New Ireland Press, 1983), 150; Neil MacKinnon, *This Unfriendly Soil: The Loyalists Experience in Nova Scotia, 1783-1791* (Montreal; Kingston, ON: McGill-Queen's University Press, 1986), 63, 162.

[9] On the importance of education to the preservation of British governance in British North America, see Bruce Curtis, *Ruling by Schooling Québec: Conquest to Liberal Governmentality: A Historical Sociology* (Toronto: University of Toronto Press, 2012); E. Jane Errington, *The Lion, The Eagle, and Upper Canada: A Developing Colonial Ideology* (2nd ed. Montreal: McGill-Queen's University Press, 2012); Cecilia Morgan, *Building Better Britains?: Settler Societies in the British World, 1783*-1920 (North York, ON: University of Toronto Press, 2017), esp. 125-132;

[10] Ward Chipman to Edward Winslow, 14 December 1805, in W.O. Raymond, ed., *Winslow Papers, A.D. 1776-1826* (Boston: Gregg Press, 1972), 542.

[11] Tamson Pietsch, *Empire of Scholars: Universities, Networks and the British Academic World, 1850-1939* (Manchester: Manchester University Press, 2013), 21.

backlog in petitions for land grants. The colony had too few surveyors with the necessary math skills to survey land for distribution amongst perspective settlers; this deficit in skilled surveyors exacerbated problems with restive settlers, including squatting and conflicts with the Mi'kmaq, Wolastoqiyik and Peskotomuhkati whose land white settlers came to occupy.

Loyalist refugees of all ranks were in close agreement about the need for an established system of education in new settlements, albeit for different purposes, and rested their hopes in education as a harbinger of peace, as a disseminator of liberal British values through Christian institutions, and as a generator of future industry.[12] Benjamin Marston, another Harvard-educated refugee and appointed surveyor of the new Loyalist settlement of Port Roseway (Shelburne), was particularly frank about the need for unanimity between education and religion in one report he sent off to London at the height of his efforts to settle refugees in Shelburne in 1783. Marston observed that such combination required "particular care," by restricting who would be allowed to shape "Colleges & such like Public Seminaries of Education so far as Clergymen were concerned," and that they "should be committed only to the care of those who were [Church] of England men."[13] Other Loyalists were also quite critical of the lack of any "sufficient portion of men of practical education & abilities among the" refugees expected to occupy and permanently settle in the post-revolutionary northwest Atlantic.[14]

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[12] Ann Condon, *The Envy of the American States: The Loyalist Dream for New Brunswick* (Fredericton: New Ireland Press, 1984), 45-58.
[13] Benjamin Marston to Israel Maudit, 8 August 1784, *Edward Winslow Papers*, HIL-MG H2, Benjamin Marston Diaries, "Business Papers." vol. 21.
[14] Edward Winslow to Benjamin Marston, 30 May 1783, Raymond, ed., *Winslow Papers*, 85.

Despite there being numerous college-educated refugees in Nova Scotia, in Marston's view far too few had the practical education necessary for cultivating land for resettlement. Practical education, at least according to Marston's interpretation while he attempted to survey plots of land along peninsular Nova Scotia, was 'useful knowledge,' thoroughly independent of any kind of theoretical or abstract thought that did not also improve upon the use of a quadrant. In Britain, the link between science and practical education had been well established since the seventeenth century and proved fertile when put into the service of empire.[15] In Nova Scotia, the link between expanding commerce and practical education was not lost on Marston, who, at the end of eighteenth century, believed the region needed practitioners and not philosophers. The system of education, once implemented, needed to produce competent settlers and loyal subjects who would quicken the occupation and opening of the land and not question either the actions or authority of the crown's representatives in Nova Scotia or, after 1784, New Brunswick.

After 1784, in the parts of interior Nova Scotia that became the colony of New Brunswick, as hundreds of thousands of acres of land were subdivided as property, members of New Brunswick's would-be aristocracy accumulated thousands of acres in their attempt to reaffirm status, position, and financial security after their exile from the newly independent United States.[16] Land-wealth alone did not constitute a future for the

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[15] Margaret Jacobs & Larry Stewart, *Practical Matter: Newton's Science in the Service of Industry and Empire, 1686-1851* (Cambridge: Harvard University Press, 2004), 3 & 72-80.

[16] Land in New Brunswick was granted based on many factors, not least of which was wealth and properties lost because of loyalty to the British Crown. The most infamous attempt at a land grab happened before New Brunswick's inception when a group of 55 New York professional and clergymen petitioned the British Government for 5,000 acres of land each. An excellent synopsis of this attempt, and its fallout, can be found in; Ann

children of New Brunswick's most affluent refugees and was no substitute for the kind of political influence reaped from a Harvard or Columbia college degree. In response, New Brunswick's political elite laboured to establish a collegiate institution that could reproduce familiar New England and Mid-Atlantic gentility north of the Bay of Fundy. In doing so, the earliest foundations of the present-day University of New Brunswick entwined with the development of a fledgling settler colony. These entanglements shaped not only the development of higher education in the province, but also the politics of the colonial government and ownership of Wolastoqey territory by settlers, a foundation that has further reinforced itself over the generations though a continued programme of Indigenous dispossession and exploitation of unceded lands and waters.

Though an institution of higher education was perceived as central to reinforcing the superiority of elite Anglo settlers in New Brunswick, it was also key to their controlling of knowledge-production about the lands that they sought to occupy as members of a fledgling aristocracy. Institutional histories of the University of New Brunswick have preserved this stalwart commitment, while also erasing the questionable actions of the founders of its institutional predecessors, the Fredericton Academy, College of New Brunswick, and King's College Fredericton. No history written about the evolution of collegiate education in New Brunswick addresses the centrality of land to the establishment of a university in Fredericton and both land and the school's role in the development of the settler state in New Brunswick. Indeed, historians of New Brunswick generally constructed scenarios that deflected scrutiny of the school's history as a major landowner. James Hannay, a nineteenth-century historian of New Brunswick, argued that

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Gorman Condon, "Hardy, Elias," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.

impasses between the province's Executive Council and House of Assembly about the function of collegiate education arose out of "political spite" rather than legitimate concerns over educational and fiscal responsibility. W.S. MacNutt, in his *New Brunswick*, conjectures that in the 1790s, the Fredericton Academy was perhaps "patronized by the official and well-to-do classes of Fredericton," but he offers no evidence and entirely disregards the role that land played in the functions of the school.[17]

Other historians have made assumptions about how denominational differences in the colony constricted the early development of the Fredericton Academy, and its successors, the College of New Brunswick and King's College Fredericton. A.G. Bailey, in 1950, argued that the College's money troubles in the 1820s led the progressive Lieutenant Governor, Howard Douglas, to suggest that non-Anglicans be "permitted to matriculate, attend classes, and receive degrees."[18] However, the decision to consider non-Anglican faculty and students preceded Douglas' arrival in the colony by well over a decade. In his history of Mount Allison University, John Reid suggests that after 1800 religion and not land beleaguered the functions of Fredericton's collegiate school for over twenty years.[19] Even Katherine MacNaughton's published MA thesis "The Development of the Theory and Practice of Education in New Brunswick, 1784-1900," which is considered to be the standard for researching higher education in the province, does not offer any analysis of New Brunswick's only collegiate school during the first thirty years of the nineteenth century after Loyalist refugees first concocted it.

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[17] MacNutt does not give a source that indicates this was the case. See MacNutt, *New Brunswick*, 199.
[18] A.G. Bailey, "Early Foundations, 1783-1829," in Alfred G. Bailey, ed., T*he University of New Brunswick Memorial Volume* (Fredericton: 1950), 20.
[19] John Reid, *Mount Allison University, Volume I: 1843-1914* (Toronto: University of Toronto Press, 1984), 14.

This body of scholarship has reproduced a flawed metanarrative that the rise of the timber trade in New Brunswick opened the door to a population of "strangers to the old Loyalist ideas of a stratified agricultural society," who launched an attack "upon the College which they came to regard as a citadel of Tory and Anglican privilege."[20] Moreover, none of these works take into consideration the significance of the grant of land on which the school was built and supported by, or ask how universities and colleges shaped settler colonial space–for either the colonizer or the colonized. The centrality of settler colonialism to the establishment and functioning of a collegiate school in New Brunswick is phenomena not unique in Canada or North America. The University of New Brunswick, however, does hold claim to being the first institution to utilize a landed endowment model in the territory that formed Canada. Elsewhere in North America, universities and colleges, as Craig Steven Wilder observers in his 2013 book, *Ebony and Ivy*, "were not innocent or passive beneficiaries of conquest and colonial slavery."[21] Indeed, a significant portion of scholarship has rightly criticized the braided histories of higher education and the enslavement of Blacks in the United States.[22] Such conversations are more recent on Canadian university campuses such as McGill and

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[20] A.G. Bailey, "Early Foundation, 1783-1829," 20.
[21] Craig Steven Wilder, *Ebony & Ivy: Race, Slavery, and the Troubles History of America's Universities* (New York: Bloomsbury, 2013), 11.
[22] See Leslie Harris, James Campbell, & Alfred Brophy, eds., *Slavery and the University: Histories and Legacies* (Athens: University of Georgia Press, 2019); Marisa Fuentes & Deborah Gary White, *Scarlet and Black: Slavery and Dispossession in Rutgers History* (New Brunswick, N.J.: Rutgers University Press, 2016); Robert Emlen, "Slave Labor at the College Edifice," *Rhode Island History* 66, no. 2 (Summer 2008): 35-46. For some examples of reports and ongoing projects examining the influence of slavery on American university campuses, see Brown University "Slavery and Justice: Report of the Brown University Steering Committee on Slavery and Justice," 2006 https://slaveryandjustice.brown.edu [accessed 31 January 2023]; Columbia University, "The Columbia University and Slavery Project," 2014 https://columbiaandslavery.columbia.edu [accessed 31 January 2023].

Dalhousie University, but nonetheless critical to our understanding of the historic dependence of the academy on human bondage.[23] Although a significant body of scholarship now historicizes the stolen people that built many North American colleges, less is known about the stolen or unceded lands upon which they were built, how institutionalized land theft in British North America is a cornerstone of higher education, and how many present-day Canadian universities continue to be implicated in such a destructive system.[24] Universities established by British settlers in North America were designed to transfuse English customs and values into colonial communities and to preserve the privileged position that the Church of England held in shaping education.[25] To accomplish such a task, these institutions accumulated vast swaths of land through grants and used that land to finance classical and liberal education through the eighteenth and nineteenth centuries. Different King's Colleges established by royal charter in New York (1754), Windsor (1789), and Toronto (1827) all used land for similar purposes, with their institutional successors continuing to benefit from the dispossession of Indigenous Peoples. The settler colonial beginnings of the University of New Brunswick, which is

[23] Charmaine A. Nelson & Student Authors, "Slavery and McGill University: Bicentenary Recommendations," 2020 https://blackmaplemagazine.com/wp-content/uploads/2022/09/bicentenary-recommendations.pdf [accessed 31 January 2023]; Dalhousie University, "Report on Lord Dalhousie's History on Slavery and Race," 2018 https://www.dal.ca/dept/ldp/findings.html [accessed 31 January 2023].
[24] Caitlin P.A. Harvey, "The Wealth of Knowledge: Land-Grab Universities in a British Imperial and Global Context," *Native American and Indigenous Studies* 8, no. 1 (Spring 2021): 97- 105; Sharon Stien, *Unsettling the University: Confronting the Colonial Foundations of US Higher Education* (Baltimore: Johns Hopkins University Press, 2022), 18-28. In the American context, see; Margaret Szasz, *Indian Education in the American Colonies, 1607-1783* (Albuquerque: University of New Mexico Press, 1988); Colin Calloway, *The Indian History of an American Institution: Native Americans and Dartmouth* (Hanover: Dartmouth College Press, 2010).
[25] Tamson Pietsch, *Empire of Scholars*, 22.

sited on unceded Wolastoqey land, has, however, an even more complicated story of Indigenous exploitation and land acquisition that requires broader analysis.

### 3.2 The Fredericton Academy and the School in Sussex Vale

This historiographic disconnect between the foundations of settler universities and the development of an emerging colonial state in the territories that now comprise Canada is known to historians of education and colonialism in Canada. In their 2021 article, Natalie Cross and Thomas Peace explore the ecclesiastical and financial networks that connected the Shingwauk Home, Huron College, and Western University, but also acknowledge how "historians have treated the development of universities and residential schools separately."[26] This separation has likewise distorted the interconnections of different educational beginnings in New Brunswick, while also upholding the perceived benevolence and altruism of education as only an end and not a means to an end. After 1784, colonial leaders in Saint John and Fredericton opined about the function of education in Britain's settler colonies. Despite firm opinions the shaping of education, and particularly collegiate education, in New Brunswick's earliest decades of existence was a fraught process, the dreams of some political elites, notwithstanding. Members of that group perceived a college education as one of few paths to active leadership within the fledgling settler colonial society. These Loyalist leaders imagined a publicly-supported college where they could send their children to be trained to assume governing positions in the province, while the majority of refugees could entrust their children's

[26] Natalie Cross and Thomas Peace, "'My Own Old English Friends': Networking Anglican Settler Colonialism at the Shingwauk Home, Huron College, and Western University," *Historical Studies in Education* 33, no. 1 (Spring 2021): 25.

education to "traditional agencies of the Church and private initiative," making education in the infant colony a class-based system.[27] New Brunswick was, however, too poor and too remote for the House of Assembly to fund willingly any institution that would benefit only the children of the most affluent.

As early as 1785, the Executive Council received a petition from the would-be aristocracy about funding a college for their children and "called for an immediate attention to their Education." Governor Thomas Carleton welcomed the petition for "an Academy, or School of liberal Arts and Sciences" at Fredericton, signed by seven memorialists, including members of the Executive Council who petitioned themselves, and lead by William Paine, a physician from Massachusetts who received his medical training in Aberdeen, Scotland at Marsichal College. In 1783, Paine accepted a substantial land grant on Passamaquoddy Bay, and then relocated to Saint John the following year, likely resulting from his wife's concern that their children could not receive an education there. At Saint John, those concerns persisted, and Paine admitted to being "almost discouraged," finding it nearly "imposing [despite] all the Industry, and Economy I am master of" to ensure his family's prosperity in New Brunswick.[28] In 1787, he and his family returned to Massachusetts.

Paine's petition garnered support from other preeminent Loyalists in Saint John, however, including Ward Chipman, who likewise saw that "Many publick advantages,

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[27] Katherine B. MacNaughton, *The Development of the Theory and Practice of Education in New Brunswick, 1784-1900* (MA Thesis, University of New Brunswick, 1947), 41-42.
[28] Quotes from "The Founders' Petition of 1785," https://lib.unb.ca/225/founders-petition-1785, [accessed 31 January 2023]; William Paine to Nathaniel Paine, 7 November 1785, Dr. William Paine Papers: 1768-1835, HIL-MICL FC LFR .P3W5P3, Reel 1, Box 10, 26; Carol Anne Janzen, "Paine, William," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.

and many Conveniences would result to Individuals could this be affected within this Province."[29] On 13 December 1785, the memorial received the favourable consideration of the Governor in Council, which ordered that "the attorney-general and solicitor-general [Chipman, also a petition signatory], with all convenient speed, be directed to prepare the draft of a charter of the said Institution."[30] They modeled the charter after King's College (renamed Columbia College in 1784) in New York City, and classes began almost immediately in Fredericton in a temporary structure located near present-day University Avenue.[31] The founders initially funded the school with proceeds generated from the sale of farm and water lots in the town plat, done so at auction in the spring of 1786. At the same time, 400 acres of land on the south western-edge of the town were parceled out as a glebe and another large tract above the town plat was reserved as a common.[32] The use of land to generate an income, if not endowment, for the college made sense given that New Brunswick was cash poor but land rich.[33] The lack of a monetary endowment from the

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[29] "The Founders' Petition of 1785," https://lib.unb.ca/225/founders-petition-1785 [accessed 31 January 2023].
[30] W.O. Raymond, "The Genesis of the University of New Brunswick" (St. John: N.B. Publisher Unknown, 1919), 4.
[31] A.G. Bailey, "Early Foundations, 1783-1829," 16.
[32] UNB Manuscript Collection, UA RG 109, Series 1 (College of New Brunswick), File 4, 15 February 1819, "Petition to the Governor and Trustees of the College of New Brunswick Stating Intent to Apply to the General Assembly for an Act to be Passed Confirming the Petitioners Land Titles," Archives and Special Collections, University of New Brunswick Libraries, Fredericton. Quoted from an inserted copy of the Minutes of Council dated 3 February 1786, 14-15.
[33] The amount of land that the Fredericton Academy was able to charge rents on after the auction in 1786 is unclear. The rent is generally believed to have amounted to about £100 per year, but 33 acres only generated about 1 shilling of rent for the college, per annum, by 1788 according to a memorial of Jonathan Odell regarding lands he sold to generate income for the school. To make even close to £100, the college would have needed to rent at least 60,000 acres of land – nearly six times the size of the island of Manhattan. Though not all lots would have been charged the same in rent, the amount paid by certain tenants would have to vary greatly to make up for what has been claimed by A.G. Bailey

province, however, compounded by the refusal of the Crown to approve the institution's formal articles of incorporation, left the Fredericton Academy only a country grammar school.

Paine's aspirations for developing educational opportunities in New Brunswick did not end with the hasty opening of one unincorporated school in Fredericton. Rather, seven months after he laid his memorial before the Executive Council, Paine was appointed one of several commissioners of the New England Company for their operations in New Brunswick. The New England Company was a Christian mission society founded by an act of Oliver Cromwell's Parliament in the mid-seventeenth century, and its initial goal according to its charter was to provide for the promotion and propagation of the Protestant faith in New England and parts adjacent in America. By the eighteenth century, the Company focused exclusively on "the advancement of the Christian religion amongst Indians, Blacks, and Pagans" in the American colonies.[34] Despite the disruptions of the American Revolution, the principal object of the Company to 'civilize' Indigenous peoples remained, and compelled the Company to relocate its North American operations to the remaining British colonies on the continent, including New Brunswick.[35] The nine commissioners appointed in New Brunswick, which included Paine before he quit the province, were charged in 1786 with establishing schools, hiring teachers, and authorizing expenditures from the Company's fund for all necessary goods

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in his *Memorial Volume*. For a copy of Odell's memorial, see UNB Archives and Special Collections, UA RG109 Series 1, Item 4, 16.

[34] *History of the New England Company* (London: Taylor and Co. Little of Queen Street, 1871), 25.

[35] Judith Fingard, "The New England Company and the New Brunswick Indians, 1786-1829: A Comment on the Colonial Perversion of British Benevolence," *Acadiensis* 1, no. 2 (Spring 1972): 30.

and equipment. According to Judith Fingard, "St. Andrews, Sussex Vale, Maugerville, Fredericton, Medutic, Woodstock, and Miramichi were chosen as possible sites" for schools to teach Mi'kmaq and Wolastoqey children. In most communities, a school never opened because Mi'kmaq and Wolastoqey parents refused to send their children and by 1791, the commissioners decided to consolidate their efforts at Sussex Vale where a school opened.[36]

Motivations for establishing mission schools in New Brunswick to teach Indigenous children grew out of a range of perspectives that derived either from British benevolence as expressed through Christian values, deeply rooted racial attitudes directed toward Indigenous Peoples, or a combination of both. The elite Loyalist dream for New Brunswick was fed as much by a need to erase the presence of the land's original inhabitants as a desire for a college in Fredericton to educate their children. In both cases, education was imagined to empower a growing settler population and provision the development of unceded lands and waters with individuals trained to carve it up as property. In a report written in 1788, likely by Edward Winslow, the author heralded the "Progress of New Brunswick" and the "rapid advancement of the Province in population, Trade, Navigation and Internal Improvements since 1784."[37] With regard to education, the report drew a direct link between the mission schools of the New England Company and the academy established at Fredericton, noting that:

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[36] Fingard states that schools were also in operation in Meductic and Maugerville, but from the minutes of the New England Company as published in 1871 it is unclear if those schools ever actually opened, or, if funds were drawn in the hopes that there would be children to teach. Since the management of Company funds was wasteful at best, the latter seems likely. Judith Fingard, "The New England Company and the New Brunswick Indians, 1786-1829: A Comment on the Colonial Perversion of British Benevolence," *Acadiensis* 1, no. 2 (Spring 1972): 30.

[37] "Progress of New Brunswick, 1788," Raymond, ed. *Winslow Papers*, 253.

> When we look back at the origins of this new province, and trace it to a short period of only four years we find it rapidly arriving into use and consequence to Great Britain. The public Academies, and private Schools establishing in that province with a view of Civilizing the Indian natives and thereby making them useful inhabitants, as well also keeping our own youth from going into the neighboring States of America for their education and imbibing the disloyal principles of that country.[38]

The report's juxtaposition of useful education and elevating New Brunswick's position within the British Empire through the reproduction of practical knowledge demonstrates the multiple functions of education in colonial space: training Mi'kmaq and Wolastoqey people to be "useful," while at the same time making Indigenous lands of "use" to Britain by increasing the number of settlers capable of mapping, surveying, and occupying the land to expand commerce within the colony.

The demand for this kind practical training was so great in New Brunswick before 1800 that newspapers frequently published advertisements from individuals willing to tutor young men in the essentials of land surveying. In the *Saint John Gazette*, William Green advertised the opening of his private English school on 27 March 1787, where students would be taught basic reading, grammar, and writing, but also "Geometry, Measuring, Surveying, Gauging, Navigation, [and] the use and projection of Maps and Charts." In contrast, the academy at Fredericton appears to have focused more on providing a classical English education in an attempt to reproduce gentlemen with its emphasis on literary works, poetry and opera, and training in Latin rather than the applied mathematics necessary for surveying lands.

Governor Carleton wrote to members of the Imperial government, including the Home Secretary, the Duke of Portland, in an attempt to solicit support for the Fredericton

[38] "Progress of New Brunswick, 1788," Raymond, ed. *Winslow Papers*, 254.

Academy from Britain, noting that "many of the Inhabitants have themselves had a liberal Education and covet the like advantage for their children," and that it "would be a great consolation to them to see this Institution cherished and encouraged by Government."[39] When the Crown refused to grant the Fredericton Academy articles of incorporation in the 1780s, it also denied the school any royal annuity or grant beyond what little it made from rents in Fredericton. Recognizing the dire financial state of the province in the 1790s, the House of Assembly likewise refused to support the school with a provincial endowment beyond a one-time grant of £100 in 1792, and only granted those funds in exchange for a concession from the Executive Council for the assembly to draft future monetary legislative grants and appropriations. That grant was used to relocate the school and to build a larger structure on Brunswick Street in 1793 (Figure 3.1), and, according to Carleton, increased the number of pupils to "seventeen, exclusive of children under nine years of age."[40] The new building included an upper forum used as a residence for some students, a large classroom, kitchen, and five separate lodging rooms. Despite the improved location, the Academy still found itself severely limited by the paltry funding available. If the school was to survive, it needed an annual endowment beyond monies it had received from the Executive via the sale of land in 1786.

How the Fredericton Academy managed to sustain itself through the rest of the 1790s can only be answered using the private correspondence of Trustees and Assembly records. The Trustees of the Academy, which included the Governor, Chipman, Winslow, and other members of the Executive and Judiciary, recognized that the Assembly would

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[39] William Wyndadm Grenville to Thomas Carleton, 3 June 1790; Carleton to Grenville, 9 March 1793, *Thomas Carleton Letter Books: 1784-1812*, HIL-MICL FC LPR .N4L5L3, reel 1, vol, 2 & 3.
[40] Quoted in A.G. Bailey, ed., "Early Foundations, 1783-1829," 16.

not pass an annual provincial grant to support the Academy. In apparent retaliation, the Executive blocked the Assembly's first attempt to establish a parish school system in

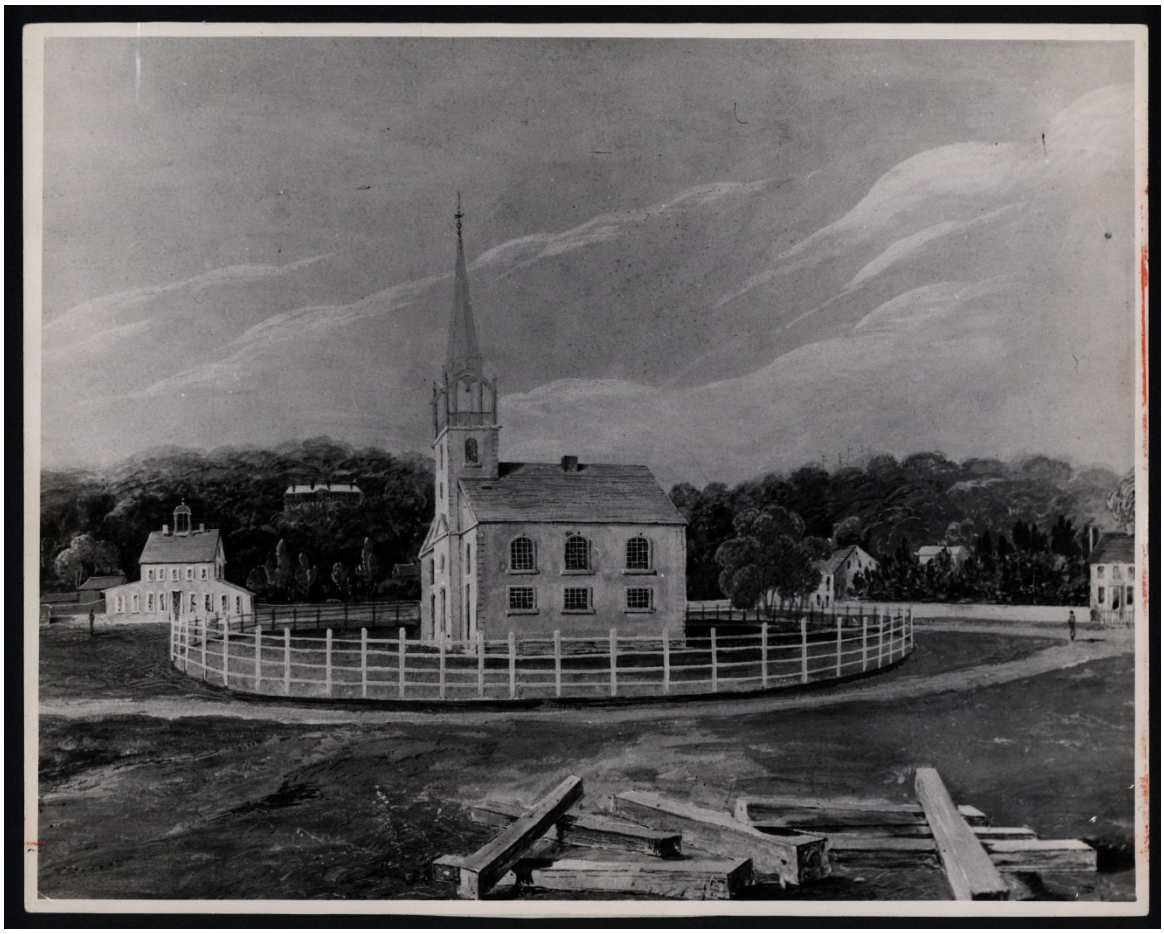

**Figure 3.1 J.E. Woolford, *"Old Parish Church with College of New Brunswick on the extreme left and the new King's College building in the background,"* UA PC 18, Photographs of New Brunswick Buildings, item: no. 6, 1827. Courtesy of the University of New Brunswick Archives and Special Collections.**

New Brunswick in 1793, exposing the divisions and contestations with regard to financing education.[41]

The Assembly included in the appropriations bill a provision to invest £10 per annum in each parish in New Brunswick for "aiding and assisting in the education of youth," surpassing the £100 per annum requested by the Governor for the Fredericton

[41] Katherine MacNaughton, *The Development of the Theory and Practice of Education in New Brunswick*, 41-42.

Academy that would have served far fewer students.[42] In response, the Council asked for a special conference with the Assembly and told elected members that by including education funds in the appropriation bill, the Council could not reject the educational initiative "without at the same time rejecting every other article in the general money bill."[43] Members of the Assembly were outraged by the actions of the Council and were more convinced of the effectiveness of a parish school system "however much some persons may dislike the general dissemination of knowledge among the people." Others, still, thought that to forfeit public funds for the Fredericton Academy would be "tantamount to an absolute surrender of your purses, property, rights and liberties into the hands of the Council at once."[44]

Issues surrounding the funding of education quickly ballooned into an outright schism between the Assembly, which now had the power to initiate bills for the appropriation of public funds, and the Council that would outright refuse the entire money bill if it did not like one part, such as funds for parish schools. The fighting over specific line items in the money bill exposed constitutional tensions, including the reception of law in the colony.[45] No appropriations passed in 1793, and then in 1794 the Assembly presented a money bill without funds for parish schools, which passed both houses. Then for four years, 1795-1798, the Assembly refused to table a money bill. At the same time, the Council challenged the Assembly's bill for collection of revenues, and when it, too,

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[42] James Hannay, *History of New Brunswick* (Saint John: N.B., 1909), 234-235.
[43] *Journal of the votes and proceedings of the House of Assembly of ... New-Brunswick from ... February to ... March, 1793* (Brookville: Christopher Sower, 1793), 332-333.
[44] Quoted in W. G. Godfrey, "Glenie, James," in *Dictionary of Canadian Biography [DCB], www.biographi.ca.*
[45] David G. Bell, "The Reception Question and the Constitutional Crisis of the 1790's in New Brunswick," *University of New Brunswick Law Journal* 29 (1980): 157-172.

failed, the colony had no money to pay its bills. Finally in 1799, an omnibus money bill appropriated funds to pay four years of unpaid commitments.[46]

New Brunswick's financial and educational situation at the end of the eighteenth century was bleak. With successive budgets, revenue bills, and appropriations rejected by the Council, combined with the relative lack of taxable imports, exports, and other income generating possibilities, local provincial revenues by 1800 amounted to only £2000 a year.[47] For some members of the cash-strapped elite, however, the "willingness of the New England Company to spend money on Indian schools in New Brunswick" was a welcomed relief.[48] Of the nine commissioners appointed by the Company to fulfill the objectives of their charter in New Brunswick, six were also trustees of the Academy at Fredericton, including Governor Carleton, Chipman, Provincial Secretary Jonathan Odell, Attorney General Jonathan Bliss, and Supreme Court Justices Isaac Allen and George Duncan Ludlow. After 1793, the Company, which left spending decisions to local commissioners, consolidated its efforts at Sussex Vale so to concentrate resources and, according to Winslow, "a college was erected there… [And] would offer to the Indians the fairest opportunity of observing the progress of agriculture and of contemplating the benefits which resulted from temperance and industry."[49] At Sussex Vale, the

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[46] "An Act for raising Revenue in this Province. Passed 4 day of February 1799," 39 George III Chapter 1; "An Act for defraying the Ordinary Services of the Year one thousand seven hundred and ninety-five. Passed 4 February 1799," 39 George III Chapter 3; "An Act to provide for payment of the Services therein mentioned. Passed 8 February 1799," 39 George III Chapter 4.

[47] W.S. MacNutt, *The Atlantic Provinces: The Emergence of Colonial Society, 1712-1857* (Toronto: MacMillan, 1965), 127.

[48] MacNaughton, *The Development of the Theory and Practice of Education in New Brunswick*, 47.

[49] Edward Winslow, "Notes Respecting the Indians and Acadians," 1804, Raymond, eds., *Winslow Papers*, 511.

commissioners committed to making Indigenous Peoples in the province into what they considered useful inhabitants, and in Fredericton the trustees of the Academy were focused on reproducing gentlemen but lacked the resources to do it. With any appropriation of public funds stalled by the legislative impasse between the Assembly and Council, many of whose members served as Academy trustees in Fredericton and commissioners in Sussex Vale, the Executive Council was perfectly positioned to disburse funds from the New England Company to maintain the Fredericton Academy through the turbulent 1790s. They did just so through the financial machinations of Ward Chipman.

Following his success as British agent on the St. Croix Commission (1796-98), Chipman shifted his focus to the matter of sustaining the Fredericton Academy. Accompanied by Winslow, the two undertook a series of visits to New England for the purpose of recruiting educators to teach the children of elite Loyalists in New Brunswick.[50] The irony of recruiting Americans should not be lost given that the academy established in 1785 for the express purpose of protecting the youth of the province from the corrupting republican influences of the United States. Conceivably the decision to look southward sprang from the Governor's failure to solicit favour from members of the British aristocracy. Regardless, both Winslow and Chipman understood that the biggest obstacle in securing any instructor for the Academy was the lack of a large enough annual revenue to pay their salary. Chipman proposed "the appropriation of £200 of the Indian Fund" from the New England Company's grant as an endowment to support the Academy

[50] Ward Chipman to Edward Winslow, 27 April 1799, HIL, *The Winslow Papers* Vol. 9: 107; Ward Chipman to Edward Winslow 17 July 1804, HIL, *The Winslow Papers* Vol. 12: 80.

and to secure an instructor in Fredericton. Winslow was "perfectly convinced" by the suggestion and went so far as to suggest the annuity might convince skeptics who thought, "Fredericton was an improper place for an academical [sic] establishment."[51] Mismanagement of the New England Company's monies by its commissioners was common, and many "Gross abuses" were brought to light after the Company's operations in New Brunswick discontinued in 1822.[52]

How the trustees of the Fredericton Academy used the money appropriated by the New England Company's commissioners is less clear. The Academy remained open until it was reorganized under a new provincial charter in 1800 when a substantial land grant was gifted to the newly incorporated College of New Brunswick. One clue as to how the money was used is in Carleton's boasts about the Fredericton Academy. The Governor describes how the school was able to expand its enrollment after 1792 because of additional lodgings, but that it was vacant "in consequence of the removal of several pupils who have been put to business." His statement is curious given that students at the Academy were meant to study English literature and philosophy, not practical trade skills acquired through an apprenticeship. That was the method of education proposed for the Indigenous children at the Sussex Vale Day School, through a system of indentured

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[51] Edward Winslow to Ward Chipman, date unknown, in Raymond, eds., *Winslow Papers*, 504-505. In W.O. Raymond's edited version of the letter, he suggests that it was "probably written about March 1803." The letter, however, also denotes the recent work of the Duke of Kent in New Brunswick. The Duke of Kent was stationed at Halifax as military commander of New Brunswick and Nova Scotia from 1794-1798. Thus, it is more likely that the letter was written toward the end of the duke's tenure in Nova Scotia.

[52] *History of the New England Company,* 75. https://archive.org/details/cihm_03421/page/n101/mode/1up?view=theater [accessed 16 September 2022].

servitude that better resembled enslavement than genteel education.[53] Though there is no evidence that explicitly states that Indigenous students were present at the Fredericton Academy, in a later report written by Winslow, who was a trustee of the Academy, he lamented that:

> Academies established in populous villages for general purposes of education, under the control of dignify'd [sic] trustees or corporations, are the worst of all possible places for an attempt to civilize Indians, and money thrown into those funds will – as it ever has been – be converted to other uses. I should therefore object to its being apply'd either to the University at Windsor or the Academy recently established at Fredericton.[54]

Carleton also notes in his correspondence that the number of pupils at the Academy was "exclusive of children under nine years of age." Younger children were preferred by the commissioners to be enrolled at the school in Sussex Vale, and the number of pupils there was composed of both settler and Indigenous children. The commissioners, however, disagreed on whether Indigenous children be allowed to maintain a connection with their parents. In May 1803, five of the commissioners resigned in light of "the ill success of the Company's efforts to accomplish in New Brunswick the purpose of their Charter," and by March 1804, the New England Company discontinued its first of two attempts at a school in Sussex Vale.[55]

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[53] While her on-going research on the Sussex Day school has not yet been published, Dr. Andrea Bear Nicholas has been publicly critical about what she has found in the documentary record with regard to the treatment of students at Sussex Vale. See Elizabeth Fraser, "New Brunswick's long and little-known history of assimilating Indigenous children," CBC News New Brunswick, 6 June 2021. https://www.cbc.ca/news/canada/new-brunswick/new-brunswick-residential-schools-indigenous-1.6051442 [accessed 24 January 2023].

[54] Edward Winslow, "Notes Respecting the Indians and Acadians," 1804, Raymond, ed., *Winslow Papers*, 513.

[55] *History of the New England Company*, 22-23.

Winslow's observations about the New England Company prior to the establishment of its operations in New Brunswick also provide important insight into the actions of the Fredericton Academy's trustees. Reflecting on the "years before the American Revolution," Winslow was frank that "sums supplied by the Company in New England for the propagation of the Gospel among the Heathen Natives… were appropriated to a general purpose by the overseers & corporation of Harvard College."[56] If monies from the New England Company supported Harvard, then it is no great shock that a group of Harvard-educated refugees with dreams of making New Brunswick the "envy of the American States" would employ the same system in Fredericton.[57] Whether this system was a misappropriation of monies can only be determined by further evidence about who the students at the Fredericton Academy were. Regardless, the connections between the Sussex Vale Day School and the Fredericton Academy, the institutional predecessor of the University of New Brunswick, are undeniable, and monies from the New England Company were used when monies from the sale of unceded Indigenous land did not provide enough funds to sustain the Fredericton Academy. To paraphrase Cross and Peace's poignant observation of education in Ontario, in New Brunswick the connections between the establishment of the Fredericton Academy and Sussex Vale Day School "demonstrate common origins as tools used to replace one society with another."[58]

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[56] Winslow, "Notes Respecting the Indians and Acadians," 1804, Raymond, ed., *Winslow Papers*, 511-512.
[57] Edward Winslow to Ward Chipman, 26 April 1784, Raymond, ed., *Winslow Papers*, 193.
[58] Natalie Cross and Thomas Peace, "'My Own Old English Friends': Networking Anglican Settler Colonialism at the Shingwauk Home, Huron College, and Western University," 25; For an examination of the relationship between schooling and settler violence toward Indigenous people, see Thomas Peace, "Search for Order in a Settlers' World: Wendat and Mississauga Schooling, Politics, and Networks at the Beginning of

### 3.3 The College of New Brunswick

On 12 February 1800, provincial articles of incorporation signed by Provincial Secretary Jonathan Odell, reorganized of the Fredericton Academy and formally established the College of New Brunswick. It also marked an end to the four-year deadlock between the House of Assembly and the Executive Council over public finances. The province had been without an appropriations act for over four years, the treasury was virtually empty, and the Council had exhausted its favour with officials at Whitehall. The Assembly, however, bore much of the blame for the long-term loss of revenue by the public who depended on government investment in infrastructure, which in turn paid the wages of labourers. The end of the deadlock meant a short-term victory for Carleton and the Executive Council, but the Executive never recovered the powers it held prior to 1792 and they continued to wane into the nineteenth century while those of the House of Assembly waxed.[59] In the shadow of its reputed victory, the Executive Council issued the Academy's trustees a new charter. The College's new provincial charter expanded the Fredericton Academy's endowment of land to five thousand nine hundred and fifty acres, comprising most of present-day downtown and uptown Fredericton. Although the Assembly still denied the College annual monetary support, the school's newly created Board of Governors and Trustees maintained the right to collect

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the Nineteenth Century," in Mancke, Bannister, McKim, and See, eds., *Violence, Order and Unrest* (Toronto: University of Toronto Press, 2019), 185-213.

[59] Philip Buckner, *The Transition to Responsible Government: British Policy in British North America, 1815-1850* (Westport: Greenwood Press: 1985), 9.

rents from tenants on the College's land, which at that time amounted "to upwards of One hundred pounds … per annum."[60]


**Figure 3.2 Original survey of lands granted to the College of New Brunswick in 1800 set upon a contemporary view of Fredericton, NB., generated by the author with the assistance of Emily Draicchio, February 20, 2022.**

[60] "Charter of the College of New Brunswick," 12 February 1800, UA RG 436, Collection of Royal Charters and Oversized Documents, item no. 2, University Archives and Special Collections.

The lands the Executive Council granted to the College included hundreds of acres already granted to settlers and improved since 1785 (Figure 3.2). The College subsumed tracts of improved land and the original grants cancelled and then College officials reallocated them as leases in perpetuity as stipulated in the terms of the school's charter. In essence, if not also in function, the College of New Brunswick had asserted eminent domain over land and then reconstituted itself as a kind of fiefdom, complete with perpetual tenants and governed under the auspices of a Board comprised of all the trustees of the former Academy.

The Board, however, understood that the College's land, regardless of its considerable size, would not provide a permanent solution to the financial uncertainties of the 1790s. At the first meeting of the Board on 23 July 1800, the members agreed that the system designed by the provincial charter to support their seminary of learning "was liable in time to fail and be defeated for default" of tenants or their heirs.[61] Furthermore, the charter's emphasis on Anglican values and beliefs set out explicit restrictions as to who would be allowed to attend the College or even maintain a lease on the College's land. The Board recognized that the Executive-issued charter and grant had circumvented Assembly comment, but it also recognized, in its own words, that without the Assembly's "support of religion and learning … [the future of the College in] this Province would become precarious and uncertain."[62]

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[61] College of New Brunswick Board of Governors and Trustees Fonds, US RG 40, Book 1, "College Minutes 1800-1828," Archives & Special Collections, University of New Brunswick Libraries, Fredericton, New Brunswick. Meeting of 23 July 1800, 13. The page number in the minutes is an archival addition and not in the original Minutes.
[62] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 23 July 1800, 14.

Despite the Board being granted many unilateral powers by the charter, including the ability to decide rents according to the size of lots, improvements, goods, chattels, and, quite possibly, enslaved peoples, the College of New Brunswick was extremely disorganized.[63] Expenditures easily outpaced income generated from the school's landed endowment, and the Board did little to curb spending considering this reality. By May 1804, the Board resolved again to commission Ward Chipman to travel to New England "to make Inquiry whether a fit Person can be found among the Graduates of Harvard University willing to accept the Office of Preceptor." Whoever took the post was expected to provide instruction in literature, grammar, writing, and "Arithmetic with the Elements of Geometry" in exchange for a small salary of £100 per year.[64] The inclusion of instruction in mathematics and geometry at the College is a noticeable shift from the system of its institutional predecessor, albeit one that still prioritised classic liberal education, but the Board's commitment to having a Harvard-trained educator in Fredericton despite a lack of cash was very much reminiscent of the early ambitions of these same individuals to make New Brunswick enviable.

In early March 1805, the College Treasurer, William Franklin Odell, the son of the Provincial Secretary, presented the Board with the reality of the school's accounts. Though the College did generate just over £100 in annual rents, arrears in rent due to the

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[63] Though no direct evidence of the residence of enslaved Black peoples on college land has been found to date, many of the tenants who petitioned the Board throughout the 1810s, including Stair Agnew, were known to have owned enslaved Blacks. Slavery in New Brunswick was not legally ended until 1828, and, as Harvey Amani Whitfield has pointed out, many Blacks in New Brunswick were enslaved since birth, and that the terms of their enslavement or "servitude" kept them in bondage until their 21st birthday. See Amani Whitfield, *North to Bondage: Loyalist Slavery in the Maritimes* (Vancouver: University of British Columbia Press, 2016), xx.

[64] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 25 May 1804, 17.

Board already amounted to nearly £380. The situation was, as had been feared, caused by an increase in tenants unable or unwilling to pay rents to the Board and a lapse in tenancy within the school's first five years in operation. Although the overabundance of land in New Brunswick appeared to provide a suitable endowment, it proved to be more lucrative because College tenants could seek out freeholds elsewhere and, it would seem, many did. The Board instructed Odell to "notify several Tenants that, unless they execute their several Leases and pay the arrears," they would risk the forfeiture of their leased lands and conceivably the value of the improvements they had made.[65] The school's money troubles would not be mitigated using only rental income, and still required a monetary investment from the House of Assembly using public revenues.

The Assembly finally obliged, passing "An Act for Granting Aid in Support of the College of New-Brunswick," the day after William Odell told the Board that the school's accounts were deeply in the red. In 1805, the Assembly approved an annual provincial appropriation for the College, but the act in support of the College was more carefully constructed than simply allocating funds to the troubled institution. The Assembly, at a cost to the province's Ordinary Expenses, promised "the annual sum of One Hundred Pounds," but made explicit that those funds had to be applied toward "the Tuition of Pupils." Additionally, the Assembly included a clause that if school revenues "amount to One Thousand Pounds annually, then and in that case the said Grant of One Hundred Pounds shall cease and determine."[66] Though the Assembly may have finally given in to

[65] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 4 March 1805, 18.
[66] "An Act for Granting Aid in Support of the College of New-Brunswick, incorporated by Charter and Established at Fredericton," passed 5 May 1805, 45 George III Chapter 15.

the demands of the elite to fund a school for their children, it did so very cunningly and ensured a level of oversight unlike that of the New England Company. By stipulating how that money was to be used for "Tuition of Pupils," the Assembly obliged the Board to recruit students and gave itself legislative recourse to repeal the grant if monies from the public purse were being abused. It also ensured that in the unlikely event the College of New Brunswick figured out how to make a profit from its land that the public would not have to provide further support to New Brunswick's elite. The grant's fine print also shaped the College's curriculum because the school began offering courses in disciplines New Brunswick settlers needed.

In the late summer of 1805, the Board moved to reorganize the instruction of pupils by dividing students into three different classes. The first class followed a curriculum more in line with the original purpose of the Fredericton Academy by undergoing instruction in grammar and languages, writing, and geometry. There were also additional lessons on certain elements of geography and astronomy, broadly defined by the Board as "classical learning."[67] The second class was also taught to read, write, and be given basic instruction in arithmetic, while the third class was only to be taught to read and write. Tuition likewise came into effect to reflect class distinctions, in every sense of the phrase, as students in the first class were charged £5, the second class £3, and the third class £2 per year. In practice, the institution assumed roles as both a collegiate and a country grammar school because the Assembly, which was holding the purse strings, made the Board democratize the College of New Brunswick in a way that the Trustees of the Fredericton Academy had refused to do. The role of Preceptor, which the

[67] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 26 August 1805, 19.

Board wanted filled by someone who was Harvard-trained, was taken up by Mr. James C. Bremner, given the post at the same time the Board restructured classes. Little is known about Bremner, but it is likely that he, too, was a refugee displaced by the American Revolution in light of land he was granted in Saint John County.[68] Whether he was Harvard-trained is less clear, but the choice still demonstrates that the Board abandoned its more lofty aspirations of soliciting the services of a recent graduate in New England, but still committed to paying Bremner a £100 annual salary.

As for the issue of the vacant lands and the monies yet to be paid, the Board moved to remove tenants who had failed to pay rent, some for several years, or to cancel their leases so that they could be re-granted at a rate of one shilling per acre, per year for a term of twenty-one years. Combined with an annual injection of cash from the province, the College's finances improved significantly. Classes at the school were, however, disrupted four years later, in February 1809, when Bremner resigned his post as Preceptor, and the Board resolved to find a replacement, but this time chose to look for one in England. The desire to have an English school master at Fredericton no doubt stemmed from growing tensions between Britain and the United States after President Thomas Jefferson signed into law the Non-importation Act in April 1806, followed by the Chesapeake-Leopard Affair in 1807. Both were part of a chain of events leading to the War of 1812, but the Board's decision also derived from their want of an instructor who could teach students "several practical branches of mathematical Sciences."[69] Indeed, the transition from wanting a classical education for the children of New Brunswick's elite to

[68] Bremner, James C., in Land Petitions: Original Series, 1783-1918, RS108, Microfilm 74189, "Land Petitions," Provincial Archives of New Brunswick.
[69] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 9 March 1809, 24.

a more practical one was supported by the acquisition of books on experimental sciences such as chemistry, magnetism, light and colour written by renowned physicists and natural philosophers such as Isaac Newton, Tiberius Cavallo, and Johann Wolfgang von Goethe who were highly regarded English, Italian, and German scientists respectively. By 1815, the College's library contained a collection of books on the natural sciences that rivaled literary or religious works for prominence.[70]

Still needing a Preceptor, the Board raised the salary to £200 per year for whoever took the post, as well as "Comfortable apartments for a family in the College and an adjacent Garden of one acre." Lacking a suitable candidate a year later, despite the increased salary and promise of free accommodations, the Board made the surprising decision to consider Presbyterians for the job, a break from the charter's rules that explicitly required teachers to be Anglican. It marked the beginning of unprecedented change at the school, and is a surprising choice given the role that rampant denominationalism played in the establishment of different non-secular colleges in both Upper Canada and in Nova Scotia before 1830.[71]

The 1810s became a critical decade for the College of New Brunswick. Consecutive American embargo acts forced the British home government to adopt a series of measures that made provincial fisheries in the northwest Atlantic much more

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[70] The College of New Brunswick library was assembled over many years, beginning in 1785, and continues today as the Harriet Irving Library. In the 1960s, an effort to reconstruct the King's College Library (pre-1859) by the UNB Archives and Special Collections produced a catalogue of 1083 different texts, now known as HIL-SPECKC. Though the original accession dates for every text is not available, there is a noticeable shift in the subject of books held by library after 1800, and in particular by 1815, where the focus on the natural sciences rivaled that of older literary or religious works.

[71] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 26 February 1810, 27.

lucrative, and a revival of shipbuilding encouraged greater trade between Britain and New Brunswick. The greatest boost to the College was the timber trade. The crisis that had arisen in 1806 because of the American embargos was exacerbated when British timber buyers were prohibited access to Baltic pines following the Treaties of Tilsit between France and Russia in 1807. Favorable timber duties encouraged colonial softwood exports and the College, too, participated in the trade by allowing trees to be felled on its land either to be sold for export or used as building materials in Fredericton.[72] The Board was eager to capitalize on its lands after years of poor returns on those portions rented out to tenant farmers. Because there were "frequent Trespasses committed by Cutting and destroying the Timber upon the College Lands," the Board passed a motion that any person found thereon "in future be immediately prosecuted."[73] Given that the western edge of the College's land ran up against reserved lands at Kingsclear, where the village of Ekwpahak once stood, it is not unlikely that the Board was attempting to police both settlers and the Wolastoqiyik whose land had been taken by the settler government and then granted to the College. In the early decades of the nineteenth century, Wolastoqiyik "up and down the river began experiencing severe destitution as a result of the theft of their lands, the influx of settlers, [and] the proliferation of sawmills," with the College contributing to that dislocation experienced by the Wolastoqiyik.[74]

By leveraging timber resources on unceded Indigenous lands, the College of New Brunswick was able to stabilize itself, and, in 1811, successfully recruited a new

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[72] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 22 March 1811, 32.
[73] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 12 February 1807, 21.
[74] Andrea Bear Nicholas, "History of the Maliseet First Nation at Kingsclear to 1950," June 2013, https://www.kingsclear.ca/about/history/ [accessed September 2022].

Preceptor from England to teach at the school. The Reverend James Somerville, a Scottish-born Anglican clergyman, was appointed in October 1811, and, upon his appointment, the Board re-evaluated the tuition of students. Since the school was no longer solely dependent upon its annual provincial grant, thanks to a combination of rents and monies from timber, all students were required to pay just over £5 per year. A new building, in addition to the one constructed by the Fredericton Academy in 1792, was also ordered to be built for the use of students.[75] Somerville's salary likewise grew to £270 per year, and, at least on paper, the College of New Brunswick looks to have been well-positioned to weather the uncertainty of wartime. The College Board even ordered several new surveys of its lands to be done between 1812 and the winter of 1815.

There was little reason to doubt the security of the school until the tenants of the College began to challenge the legality of the Board's control over the land grant.[76] Although war between Britain and the United States did little to complicate the functions of the School, at least according to the minutes of the Board, the College of New Brunswick became the site of a legal battle over whether a corporate body could own and lease land. Schools like the College of New Brunswick and King's College, in Windsor, Nova Scotia, borrowed heavily, at least early on, from an unreformed Oxford model by building residential colleges, enforcing specific confessional principles like the Thirty-nine Articles of the Anglican Church, and structuring curriculum around classical European texts. The purpose was to grant control of education to the Church of England, essentially giving it a monopoly on deciding who could attend and what they would learn.

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[75] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 25 October 1811, 37-38.
[76] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 22 December 1814, 45-46.

But as F. H. Chases, president of Queen's College, Cambridge wrote in 1903, settler colonies like New Brunswick "inherited tradition[s]" but "modified [them] in light of experiences … largely determined by its previous history and by its environment."[77] In New Brunswick, local circumstance arose from infighting between the appointed and elected bodies of government, and the extraction of resources from land fixed between competing British and American Empires shaped its history.

The Board's greatest troubles arose from the land on which it depended. In August 1815, Garnet Clappers, a farmer, applied to lease part of a pasture lot that Isaac Hedden, a retired British Army Lieutenant, owned before 1800. The province escheated Hedden's property in 1800 for the College when the school received the grant that included his land, and it then issued him a lease in perpetuity in light of his original grant from the province. Hedden owned the lease, and Clappers wanted to acquire it on the same terms that Hedden had. The Board, however, was not willing to commit to those terms and instead issued Clappers a lease for twenty-one years. In fact, the Board lamented having ever leased the land in perpetuity to Hedden, noting it "was made unadvisable as the board are of the opinion that the disabling Statute prohibits the granting of Leases for longer than twenty one years."[78] By referencing the disabling statute, also known as the Fraudulent Conveyances Act of 1571, when rejecting Clappers' request the Board enabled other tenants to bring forward serious challenges to the school's corporate authority to lease the College's lands.

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[77] F.H. Chase, "Official Report of the Allied Colonial Universities Conference," *The Empire Review* 6, no. 31 (1903): 79.
[78] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 18 August 1815, 50-51.

On 15 February 1819, seventeen petitioners informed the Board of the College of their intent to "apply to the General Assembly at their present Session for an Act to be passed confirming their Titles," despite those lands having been issued by lease in perpetuity.[79] The Petitioners argued that lands in the Parish of Fredericton originally reserved for the inhabitants of the province to be granted in recognition of losses from the American Revolution was theirs as grants and not leases. To support their claim, the Petitioners supplied documents including copies of minutes from the Executive Council, plans for the common on the riverfront, the 400-acre glebe allocated in 1786, and even notice of the 1786 auction planned in support of the former Fredericton Academy. All the land that was subdivided and occupied prior to 1800 was, according to the Petitioners, "made and registered in the usual manner for Grants in fee."[80] Moreover, the Petitioners contended that rent was only meant to be collected in support of the Fredericton Academy "as a Body Corporate," but because the Crown denied the school articles of incorporation the rental agreement was made void when the College of New Brunswick was given provincial articles of incorporation.[81] A rental agreement, of any kind, was only acceptable to potential tenants in the event that their titles would "be equally valid with Grants from the Crown," but when the Governor, by way of the Executive Council, incorporated the school in 1800 without the approbation of the Crown, the leases were

[79] UNB Manuscript Collection, UA RG 109, Series 1 (College of New Brunswick), File 14, 15 February 1819, "Petition to the Governor and Trustees of the College of New Brunswick," 4.
[80] UNB Manuscript Collection, Series 1, "Petition to the Governor and Trustees of the College of New Brunswick," 3-5.
[81] UNB Manuscript Collection, Series 1, "Petition to the Governor and Trustees of the College of New Brunswick," 5.

invalid.[82] Portions of the land which had already been surveyed and occupied, and then escheated and made part of the College of New Brunswick's land grant, was promised to those tenants in perpetuity, but neither the Board of the College or the Executive Council had the legal means to guarantee it because the 1800 charter was signed by Jonathan Odell and not the Crown's representative in New Brunswick, Governor Carleton. Thus, the Petitioners wanted to protect their interests in the land promised to them in perpetuity and in which they had invested decades of labour. The Board, in light of legal precedent elsewhere, found itself resigned to appealing to the House of Assembly for assistance.

Two weeks prior to the Board receiving the petition, on 2 February 1819, the United State Supreme Court handed down its decision in the matter of *Dartmouth College v. Woodward*, a case that similarly questioned the legal status of colonial charters. In New Hampshire, the Trustees of Dartmouth College took the state government to court after its Assembly attempted to reform the College's charter without the Trustees' consent.[83] Dartmouth's most famous alumnus, Daniel Webster, a preeminent attorney and orator in the United States, represented the College's Board and argued that it was a private and not a public institution because the charter was granted by royal prerogative. Webster was also a prominent figure during the Indian Removals of the 1820s, and similar argued that while the "lands in the United States is holden under purchases from the Indian nations," the settler state had inherited the right from Great Britain to purchase land from Indigenous Peoples.[84] The controversy developing in New England bore many

[82] UNB Manuscript Collection, Series 1, "Petition to the Governor and Trustees of the College of New Brunswick," 7.
[83] Wilson Smith, *Theories of Education in Early America, 1655-1819* (New York: The Bobbs-Merrill Company Inc., 1973), 389.
[84] Calloway, *The Indian History of an American Institution*, 77-78.

similarities to the one Board for the College of New Brunswick faced. When the New Hampshire case went before the Supreme Court of the United States in March 1818, Webster argued that for a place of higher learning to function, it must have the protection of the law to preserve its corporate identity as separate from the political interests of the governing class. As Wilson Smith writes, at issue was how the law ought to be used as a defence for "academic people if they are to carry forward their seeking and teaching independent of outside public opinion."[85] The Supreme Court ultimately ruled in favour of the Board of Dartmouth College, upholding that the charter between the Trustees and the British Crown was a contract protected by the United States Constitution–effectively making Dartmouth College a private organisation meant to serve the public interest. Because New Brunswick's Executive Council created a charter for the College of New Brunswick as a corporate body, signed by the Provincial Secretary and not the Crown's representative, the school was made a creature of the governing class. Without the approbation of the Crown, the College of New Brunswick was a corporate entity that came into conflict with the Statue of Queen Elizabeth I, which prohibited any corporation from leasing land for longer than twenty-one years without royal consent.[86]

With the Executive Council unable to quell the tenants' concerns because it acted unlawfully by incorporating the College without the permission of the Crown, the College's Board turned to the Assembly for assistance.[87] Aid came in the form of an act

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[85] R. Kent Newmyer, "Daniel Webster as Tocqueville's Lawyer: The Dartmouth College Case Again," *American Journal of Legal History* 11, no. 2 (April 1967): 130; Wilson Smith, *Theories of Education in Early America,* 387-388.
[86] "An Act Against Fraudulent Deeds, Alienations, &c.," passed 1571, 13 Elizabeth, Chapter 5.
[87] Governor Carleton supported incorporating the Fredericton school, and knew that the 1800 charter invoked his name, but was signed by Jonathan Odell. Had Carleton signed the charter, he would have directly violated the wishes of the crown to leave the school

passed by the House on 22 March 1820 that enabled the College's Board to sell its land, and made provisions for "all deeds and conveyances of the said Governor and Trustees of the College of New-Brunswick, *made under and by virtue of this Act*, ... are hereby declared to be good and effectual in the Law."[88] The legislation also provided protection to the tenants who had been granted lands prior to 1800 from the conditions of the Statute of Queen Elizabeth by recognizing their leases in perpetuity. New Brunswick's House of Assembly, however, was not going to defy English legal precedent for the sake of College's Board. Instead, the Assembly added a final clause that their Act would only be in force in the province if, and when, "His Majesty's Royal approbation be thereunto had and declared."[89] Gaining the approval from the Crown would be a lengthy process–it took four years–and required further action on the part of the College's Board, and they had little choice but to agree to the terms for "the passing of an Act to confirm the leases in perpetuity."[90] To avoid being in breach of the statute until such time when royal approbation was acquired, the College had to cancel the collection of rents from roughly nine-hundred and seventy-nine acres of land, which amounted to less than £40 per annum, and forgo the sale of licenses for cutting timber.[91] Even with the favorable timber economy of the pre-war years to offset the loss of rents, this was a major blow to the College of New Brunswick's annual revenue. By March 1823, still without the Crown's

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unincorporated. Whether he was aware of all the legal ramifications that provincial charter might entail is unknown.

[88] "An Act to confirm and perfect, and to carry in to force and effect, an agreement made between the Governor and Trustees of the College of New-Brunswick, and certain Tenants of the said Governor and Trustees," passed 22 March 1820, 6 George IV Chapter 25. [Emphasis my own].

[89] 6 George IV Chapter 25.

[90] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 1 March 1820, 66.

[91] "Schedule B," in 6 George IV Chapter 25.

approbation, the Board was forced to concede "the funds and state of the Corporation were such as to prevent" the Board from "attempting to put the Institution into any thing like a Collegiate form."[92] Up to that point, only four students had actually matriculated, so the Board made the decision to surrender its Charter to the House of Assembly, not to the Executive that created it illegally, in the hopes that a new royal charter might granted.

### 3.4 The Legislative Path to King's College

The legislation, titled "An Act to enable the Governor and Trustees of the College of New Brunswick, to make a conditional surrender of their Charter, and for the further endowment of the College, upon the granting of a new Charter," passed with the near unanimous support of the House on 23 March 1823.[93] Unlike the Board of Trustees in New Hampshire, who sought to pull their charter and articles of incorporation away from the auspice of the state government, the Board in New Brunswick was in a position where it had to concede that the College was a public institution in order to avoid collapse and for legal protection. Article five of the official act of surrender even states, "[T]his Act shall be deemed and taken to be a Public Act," underscoring that it was not piece of private legislation for a private institution, and thereby emphasising the kind of significance that Assembly members placed on public oversight when it came to

[92] "An Act to enable the Governor and Trustees of the College of New Brunswick, to make a conditional surrender of their Charter, and for the further endowment of the College, upon the granting of a new Charter," passed 25 March 1823, 5 George IV Chapter 33.
[93] 5 George IV Chapter 33; *Journal of the House of Assembly of the province of New-Brunswick, from Wednesday the 5th day of February, to Thursday the 27th day of March, 1823* (Fredericton: G.K. Lugrin, 1823), 84-85.

institutions like schools.[94] Part of the surrender, which also outlined some of the Board's key requests for their new charter, included that a "the sum of six hundred Pounds currency per annum," be "payable out of the aggregate Fund of the Province."[95] Seeking not only larger government oversight when it came to the re-chartering of the College, the House of Assembly stipulated it would have control of the university's annual monetary endowment from the Crown, funnelled through the public purse. This stipulation was a stark reversal from the deadlock between the Assembly and the Executive over appropriations and contrasted considerably with recent developments south of the border.

The actions of the House of Assembly underscore the growing anti-elitist predisposition in New Brunswick, which first appeared when the Assembly rejected Governor Carleton's request to grant an annual allowance to the school in 1792. Tamson Pietsch shows that "attempts to extend to the colonies the monopoly over education that the Established Church enjoyed in England provoked strong opposition," typically from numerous Presbyterian, Roman Catholic and nonconformist groups that comprised different colonial communities.[96] In New Brunswick, the House of Assembly, not a specific ethnic or religious group, offered stiff resistance in opposing continued exertions of excessive power by the colonial Executive. The Assembly understood that the College

[94] 5 George IV Chapter 33. Legislative bodies in the United States passed many pieces of private legislation, such as acts of incorporation. Legislative bodies in British North America have fewer powers to grant private acts, particularly acts of incorporation, until the early 1830s, at which time the number of private acts, largely for commercial enterprises, rose dramatically.
[95] 5 George IV Chapter 33.
[96] Tamson Pietsch, *Empire of* Scholars, 18.

was being mismanaged, and by extension, its lands were used in questionable ways to support a Board almost entirely made up of members of the Executive Council.[97]

The public's growing desire to open education in the province also overlapped with an era of progressive liberal policy, aided in part by the appointment of Lieutenant Governor Howard Douglas in 1823. "The arrival of Sir Howard Douglas," wrote W.S. MacNutt, "coincided with the approach of new tensions that were to project New Brunswick into a more articulate and assertive phase of provincial development."[98] This is, in part, true. When Douglas came to New Brunswick, he supported the liberalization of many of the province's public institutions, like the College.[99] Nevertheless, MacNutt gives far too much credit to the Lieutenant Governor. By 1824, New Brunswick was already engaged in the kinds of progressive policy debates that historians have mistakenly characterized solely as Douglas's torch to bear. Certainly, the help of the newly appointed Lieutenant Governor moved things along faster, but developments often accredited to Sir Howard Douglas were long underway. Bearing that in mind, Douglas did become one of the greatest advocates of a New Brunswick college, and he lobbied a great deal for a royal

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[97] In Upper Canada, the question of land in support of education ballooned because of the language of the Constitutional Act of 1791; 31 George III Chapter 31 (U.K.). Section 36 of the Act set out the "Appropriation of Lands in the said Provinces, for the Support and Maintenance of a Protestant Clergy," including for schooling, but did not specify the Church of England as the clergy to be maintained. Disputes over the interpretation of the 1791 Act influenced the Presbyterian Church to establish Queen's College in 1841 in Kingston, Ontario, later re-charted as Queen's University. For a transcribed copy of the Constitutional Act (1791), see *Compendium of Language Management in Canada* (CLMC), University of Ottawa, https://www.uottawa.ca/about-us/official-languages-bilingualism-institute/clmc; For a historical overview, see C. Bissell and R.S. Harris, eds., *Changing Patterns of Higher Education in Canada* (Toronto: University of Toronto Press, 1966), 87-106.

[98] W.S. MacNutt, *New Brunswick, A History:1784-1867*, 193.

[99] S.W. Fullom, *The Life of Sir Howard Douglas: From His Notes, Conversations, and Correspondence* (London: John Murray, Albemarle Street, 1863), 263.

charter. A renowned military officer in Britain and then colonial administrator, Douglas reiterated the belief that supporting higher education in New Brunswick would prevent British subjects there from having to go to the United States.[100] Broadly speaking, the College of New Brunswick needed to act as a bulwark against republican American influences, which the governing classes perceived as a threat to British power. Nevertheless, anxieties had long plagued government officials and inspired various middling groups to use assertive and well-articulated language and shrewd appeals to the legislative system to move their college toward a more open policy of admission.

Just over a month after the passing of the Assembly's Act to for the Board to surrender the College's charter, on 26 April 1823, the Board submitted a separate petition to the King to express their desire for a new royal charter. Like the Act that passed by the House of Assembly in 1820, confirming the institution's desire for new articles of incorporation in the province, the petitioners expressed their need for monetary aid. The same request for an annual sum of six hundred pounds was made, and the petitioners requested that a larger sum of monies be made available upfront for constructing a new building for the college in Fredericton. Unique to the Trustee's petition, however, is a clause stipulating that:

> [T]he present Collegiate Establishment with their Political Existence, and barely crave leave most respectfully to suggest for the consideration of Your Majesty the expediency of not requiring as a teste[sic] from the Students general a Subscription to the Thirty Nine Articles upon taking their Degrees.[101]

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[100] D. Murray Young, "Douglas, Sir Howard," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.

[101] New Brunswick Executive Council Papers: 1784-1877, MIC-Loyalist FC LPR .N4E9P3, Reel 3, Boxes 19-20, "To The Kings Most Excellent Majesty, The humble Petition of the Governor and the Trustees of the College of New Brunswick," 26 April 1823.

Unlike the Act passed a month prior by the Assembly that confirmed that degrees were to be conferred "in the same manner as they are conferred by Universities in England," the petitioners asserted that they did not want their college to be another Oxford.[102] The actions of the Board differed significantly from those taken by similar institutions in either Nova Scotia or Upper Canada where tensions wrought by rampant denominationalism had so fiercely divided the public around questions of land reserved to schools. New Brunswick's House of Assembly, which had a longer history of trying to navigate a sustainable education system in turbulent financial times, understood what was at stake.

It was not strangers in the 1820s, but other Loyalists in the 1790s who first opposed a college as "a citadel of Tory and Anglican privilege." It is clear, however, that the old-guard elite Loyalists were sowing the seeds of their own ruin when they began funneling monies from the New England Company to hold their citadel together and actively resisted by another group of Loyalists in the Assembly. After the Trustees surrendered the 1800 Charter, the Assembly requested a royal acknowledgement of the surrender, which came by Order in Council from Windsor, England on 18 November 1823. This allowed the Assembly to set in motion its first major reform to collegiate education in the province, almost a full year before Howard Douglas assumed his post in New Brunswick in 1824. At that time, he willingly advocated for a new charter, for which the Assembly had cleared a path.

[102] "An Act to enable the Governor and Trustees of the College of New Brunswick, to make a conditional surrender of their Charter, and for the further endowment of the College, upon the granting of a new Charter," 5 George IV Chapter 33.


***Figure 1.3*** **Abraham Wood, *View of the King's College, Province of New Brunswick* (London: Engraved by w. Gauci, 1829). Winkworth Collection of Canadiana at the National Archives, R9266, item no. 3019688. Courtesy of Library and Archives Canada.**

It took several years before the College of New Brunswick received royal articles of incorporation in December 1827, but the school did not formally reopen until Douglas unveiled the new royal charter of King's College, Fredericton on New Year's Day, 1829 (Figure 3.3). The Colonial Office contributed an amount of £1000, so long as the House of Assembly made a similar commitment, and it did. Moreover, the new royal charter, considering the petition made by the former College's Board, did not make it mandatory that students take a test, or oath, in accordance with the Thirty-nine Articles, with the

exception of students of divinity who would become Anglican clergy members. Students from non-Anglican Protestant sects were able to attend, and matriculate should they wish, and the new Board consisted of members of both the Executive Council and House of Assembly. Now with royal approbation, King's College Fredericton could once again resume a system of land leasing and, owing to the Act of 1820 and similar legislation passed in 1836, which gave the school greater autonomy to sell portions of its property.[103]

The new Board was also able to resume issuing timber licenses that it had been prohibited from doing since 1820. Yet, both the freeze on the collection of rents, and prohibition against the issuing of new timber licenses, produced a considerable debt, which King's College Fredericton had to subsume when it opened. According to a final audit of the College of New Brunswick published in the *New Brunswick Courier* in 1829, the annual income of the College, independent of provincial grants, had only been a meager £84 per annum since 1823 when the Assembly passed the Act allowing for the surrender of the provincial charter. Since that time, "Debts due from the Old Corporation of the College of New Brunswick [amounted] in the whole to about £2400."[104] In short, the combined total of both the provincial and Crown grants given to the new King's College was gobbled up in its entirety by debts accumulated from the many mistakes of New Brunswick's Executive Council and the former College's Board.

Understanding how King's College was formed leading up to, and after 1829, is critical to understanding the relationship between settler science and settler colonialism in New Brunswick. Training youth in the province was thought to be a critical part of

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[103] "An Act to enable the corporation of King's College to dispose of certain parts of their Lands," passed 16th March 1836, 6 William IV Chapter 54.
[104] "Annual Income of King's College, New Brunswick, independent of Provincial Grants," *New Brunswick Courier* (Fredericton), 2 July 1829, 2.

making competent British settlers out the children of American Loyalist refugees. The organization of the Fredericton Academy after 1785 also exhibits how white settlers in Britain's remaining North American colonies believed they could leverage Indigenous lands as capital to invest in an institution dedicated to the production of knowledge about that land. When the capital drawn from the land was proven to be insufficient to sustain a school for the children of the political elite, the Executive was obliged to misappropriate large sums of money from a corporate body in Britain whose funds were intended for the proselytization of Indigenous children and destruction of Indigenous culture in New Brunswick. After the Executive Council created a corporate body out of the Fredericton Academy in 1800, and did so against the wishes of the Crown, it attempted to establish a collegiate institution akin in function to Oxford University. Granting land to that corporate body, however, allowed a Board with near-autarchic power to foist itself upon both settlers and the Wolastoqiyik whose community and reserved lands at Ekwpahak met those of the college just above Fredericton. When this system was in turn challenged by the tenants of the College, the unlawful actions of the Executive became the responsibility of the House of Assembly, which at that point had been fighting against the highhanded actions of old-guard imperialists for nearly three decades. The changes that followed after King's College was chartered in 1829, and the ways that knowledge produced by faculty at the institution were used by settlers in New Brunswick, assisted in the transformation of the land into an expanding settler-colonial space. King's College, and after 1859, the University of New Brunswick, was critical to the development of a weaponized settler scientific knowledge framework.

# **Chapter Four**:

## The Promises of Science in the Timber Colony

So much about life in nineteenth-century New Brunswick was characterized by the labour of log drivers and the rhythmic chopping of an axe bellowing throughout the tree-laden hills. Though the majority of New Brunswick's settlers in the first half of the nineteenth century were farmers, the fortunes made by the region's forests positioned the province within Britain's resource extractive empire as an important timber colony that could supply wood throughout a transatlantic colonial network.[1] Benefiting from a temperate climate, an abundance of navigable rivers and streams which swelled during seasonal spring freshets that could float large felled logs, New Brunswick's tall white pines accounted for roughly 40 per cent of all square timber imports into Great Britain by 1830.[2] Even disruption wrought by the Great Miramichi Fire of 1825, which devastated nearly one third of the province's interior and centered around the Miramichi River's watershed, failed to uproot the power and influence of the timber economy within provincial politics.[3] Though vast swaths of New Brunswick's land was cleared by 1830,

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[1] See A.R.M. Lower, *The North American Assault on the Canadian Forest* (Toronto: University of Toronto Press, 1936); W.S. MacNutt, *New Brunswick: A History, 1784-1867* (Toronto: MacMillan and Co., 1963); Graeme Wynn, *Timber Colony: A historical Geography of Early Nineteenth Century New Brunswick* (Toronto: University of Toronto Press, 1981); Béatrice Craig, "Agriculture in a pioneer Region: The Upper St. John Valley in the First Half of the 19th Century, in Kris Inwood, ed., *Farm, Factory, and Fortune: New Studies in the Economic History of the Maritime Provinces* (Fredericton, Acadiensis Press, 1993): 17-36; T.W. Acheson, "New Brunswick Agriculture at the End of the Colonial Era: A Reassessment," *Acadiensis* XXII, no. 2 (Spring 1993): 5-26.
[2] Bill Parenteau, "Looking Backward, Looking Ahead: History and Future of the New Brunswick Forest Industries," *Acadiensis* XLII, no. 2 (2013): 13.
[3] Alan MacEacheron, *The Miramichi Fire: A History* (Montreal & Kingston: McGill-Queen's University Press, 2020), 131.

either by the swing of an axe or scorch of fire, neither force could reconcile the marginality of arable farmland outside of the Saint John and Kennebecasis river valleys. Indeed, the lure of logs was far more appealing to the British capitalist than the agricultural potential of the Loyalist province such that even contemporaries were apprehensive to "strangers who have taken no interest in the welfare of the country."[4]

The historiography of the New Brunswick timber economy is expansive, however there has been significant debate about the state of agriculture in the province before 1867 because of the influence of the timber trade. In 1936, A.R.M. Lower established the long-standing narrative that the province's population was a "usual mixture of amateur farmer and timber cutter," and that in the winter months farmers turned to the woods for cash, often at the expense of their farms and New Brunswick agriculture never surpassed a state of subsistence.[5] W.S. MacNutt likewise accepted this narrative at mid-century. It was not until 1981, with the publication of Graeme Wynn's *Timber Colony*, that historians began to recognize the success of New Brunswick agriculture in the first half of the nineteenth century.[6] Despite this historiographic development, many contemporaries living in nineteenth-century New Brunswick, such as Peter Fisher, feared that New Brunswick's agriculture production was lacking and pointed to this as an example of the province's supposed backwardness. Many New Brunswickers, including Fisher, were aware of the finite nature of a timber economy, and foresaw the steady decline and collapse of the province's staple industry. This chapter examines how settlers perceived natural science

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[4] Peter Fisher, *History of New Brunswick, as Originally Published in 1825* (St. John, N.B.: The New Brunswick Historical Society, 1921), 73.
[5] A.R.M. Lower, *The North American Assault on the Canadian Forest*, 103.
[6] Graeme Wynn, *Timber Colony*, 81; See also Graeme Wynn, "Late Eighteenth-Century Agriculture on the Bay of Fundy Marshlands," *Acadiensis* VIII, no. 2 (Spring 1979): 81-89.

and knowledge as inventing new avenues for provincial development and industry, but also was thought of as an alternative to preserving political order in New Brunswick if timbering and lumber should fail.[7] Financial ruin, according to both legislators and professors of natural history and philosophy at King's College Fredericton, was not guaranteed if the produce of the province's soil could made bountiful so to forestall, and, perhaps, reverse New Brunswick's ecological and financial degeneration wrought by aggressive settler extractivism vis-à-vis the timber trade.[8]

Writing of the natural environment of New Brunswick in 1825, Peter Fisher, an early New Brunswick historian and commentator, was blunt in his opinion of the disparity in knowledge about resources found in the "Bays and Harbours [which] are well supplied with Cod, Pollock, Haddock, &c.," compared to what "little can be said about the mineral or fossil productions of a country which is yet in its infancy." Indeed, the development of industry by the inhabitants of the province was far more profitably employed on the "surface of the earth than in ransacking its bowels."[9] Timber interests not only superseded the prospects of mining in New Brunswick in the earliest decades of the nineteenth century, but also obstructed the expansion of the province's agricultural resources and the production of greater knowledge about the land beyond the trees that grew on it. This point was laid bare when crop failures triggered by the 1815 eruption of Mount Tamboara in the Dutch East Indies and the resulting volcanic winter of 1816/1817 that caused

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[7] On making political order in British North America, see Macke, Bannister, McKim, and See, eds., *Violence, Order and Unrest* (Toronto: University of Toronto Press, 2019).
[8] For an examination of resource extraction and settler extractivism, see, Zoe Todd, "Fossil Fuels and Fossil Kin: An Environmental Kin Study of Weaponised Fossil Kin and Albert's So-Called 'Energy Resources Heritage,'" *Antipode* 0, no. 0 (2022): 3.
[9] Fisher, *History of New Brunswick*, 18.

unusually cold temperatures across the Northern Hemisphere, forcing New Brunswick's House of Assembly to pass "An Act to prohibit the exportation of Corn, Meal, Flour, and Potatoes" in February 1817.[10] Because Timber, rather than farm produce constituted the majority of New Brunswick's connection to external markets, the province was not at all prepared for a food shortage. Ton timber exports, however, rose in excess of 240,000 tons in 1819, almost a 150 per cent increase over exports prior to 1815, and despite the near collapse of the province's food economy.[11] Britain's demand for wood took precedent over the possibility that crop failure might result in the mass starvation of British subjects in New Brunswick, and contemporaries such as Fisher were cognizant of the callousness of foreign capitalists in this regard. Strangers to the province, according to Fisher, wasted the capital of the country and with "no improvement of any consequence made to compensate for it, or to secure a source of trade to the inhabitants, when the timber shall fail."[12] The plundering of New Brunswick's forests only foreshadowed the province's sinking into insignificance when the timber was gone.

The specter of vanishing New Brunswick timber was not enough to curb the willingness of the provincial government to open swaths of Crown lands to speculation for private venture. The decline of the timber trade also gave rise to lumbering operations that only grew in size after October 1825 by a massive forest fire that burned along the Miramichi River and its tributaries, devastating nearly one fifth of the colony's tree-covered interior.[13] In response, provincial regulations governing both Crown lands and

[10] "An Act to prohibit the exportation of Corn, Meal, Flour and Potatoes out of the Province for a limited time. Passed the 17th of February, 1817," 57 George III Chapter 1.
[11] Graeme Wynn, *Timber* Colony, 33.
[12] Fisher, *History of New Brunswick*, 72-73.
[13] Alan MacEachern, *The Miramichi Fire*, xiii.

forests were implemented to encourage greater capital investment in lumber production, particularly in Northumberland County where the fire was most severe.[14] In 1827, Britain sent instructions to reform the land granting system in place in New Brunswick, making it possible for sections of land up to 1200 acres to be sold at public auction, opening the way for larger lumbering operations to purchase greater portions of land. Owners were no longer expected to cultivate lands for settlement, and thus New Brunswick entered the 1830s continuing to focus on resource extraction rather than development.[15]

Elsewhere in British North America, resource development was diversifying British investor's portfolios despite the finite reality of timber and lumber economies and was accompanied by land settlement by British migrants. For example, in Nova Scotia, capital investment in the extraction of coal, copper, or gypsum had spurred mineral resource development along the Northumberland Straight. The Bank of Nova Scotia committed support to the London-based General Mining Association which was capitalized in 1825.[16] In contrast to New Brunswick's timber and lumber operations, the General Mining Association's operations in Nova Scotia also tried to increase the settler population for the sake of its business as part of "programmatic enterprise," an unintended benefit to the colonial government that justified its monopoly over Crown land.[17]

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[14] "An Act to authorize the Justices of the County of Northumberland, to regulate the Grazing and Depasturing of certain tracts of Land within that County, passed 7 March 1826," 7 George IV Chapter 6.
[15] Graeme Wynn, *Timber* Colony, 143.
[16] Daniel Samson, "Industrial Colonization: The Colonial Context of the General Mining Association, Nova Scotia, 1825-1842," *Acadiensis* XXIX, no. 1 (Autumn/Automne 1999): 21
[17] Samson, "Industrial Colonization," 24.

Though the Miramichi Fire did not deliver a death blow to the timber industry in New Brunswick, it did cause the industry to adjust to the reality that stocks of tall white pine that could be used for ship masts would be exhausted more quickly than previously anticipated. The expansion of squared timber (which began in 1806) and lumber for building after 1825 "opened a vastly greater proportion of the New Brunswick forest to exploitation."[18] Sawmill operations were already well-established outside of the Miriamichi River basin, but the timber trade in the latter half of the decade was driven by mills in the Saint John and Restigouche River tributaries. The opening of other parts of New Brunswick's forests did not quell concerns about the wanton wastefulness of the trade when it was dominated earlier in the century by ship mast production. The track toward the environmental degradation of New Brunswick's forests by British timber capitalists curved to encompass younger forest growth. Colonial administrators, however, were hesitant to use timber stands in the lower Saint John River Valley, which had been felled prior to 1800, and believed they were not mature enough to be actively lumbered after 1810. Writing to Nova Scotia Governor John Wentworth in January of 1811, Edward Winslow noted that it "was the cause of much concern that these nurseries for Timber should be too freely resorted to."[19] In reference to an application from the Robertson, Forsyth Trading Company, a British lumber company, for access to crown reserves at Kingsclear, Winslow was apprehensive to issuing a license for cutting 4000 tons of timber and concluded that it was safest only to proceed with "cutting such a quantity of Timber upon the reserved and [hitherto] ungranted Lands as appeared

[18] Bill Parenteau, "Looking Backward, Looking Ahead," 14.
[19] Edward Winslow to Sir John Wentworth, January 1811, in W.O. Raymond, eds., *Winslow Papers, A.D. 1776-1826*, (Boston: Gregg Press, 1972), 660.

necessary."[20] Though not an endorsement of stricter regulation, Winslow's expressed anxiety reveals at least an awareness by colonial executives about the fragility of New Brunswick's forests.

Early attempts at regulation against the destruction of New Brunswick's forests were generally locally enforced and only for a short time. Prior to 1800, the Provincial Assembly was more concerned with the regulation of exports than the regulation of interior resources, excluding wild game and other food resources, and passed successive acts that combined the regulation of fish and lumber exports in 1786, 1787, and 1797, the House of Assembly only attempted to regulate the quality of wood leaving New Brunswick ports, and not how much wood was actually felled and brought downriver to fuel the extractivist settler economy.[21] Regulations for exports were highly detailed, and in some respect were responsive to market-specific needs. For example, all square edged boards that left New Brunswick had to be an eighth of an inch thick, "except such as are for the New-Foundland [sic] and Kingston in Jamaica Markets which shall be one inch thick."[22] It was not until the first decade of the nineteenth century that the province's House of Assembly crafted county-specific legislation that considered the environmental effects of the timber industry with regard to the navigability of rivers. Passed in March 1805, "An Act for the Regulation of Booms" in Charlotte County granted powers to Justices of the Peace to make and establish regulations "necessary to secure the safe

[20] Edward Winslow to Sir John Wentworth, January 1811, *Winslow Papers*, 661.
[21] See 26 George III Chapter 50; 27 George III Chapter 11; and 37 George III Chapter 4 of the *Acts of the General Assembly of the Province of New-Brunswick*, available on the British North America Legislative Database, bnald.lib.unb.ca.
[22] "An Act for regulating the Exportation of Fish and Lumber, and for repealing the laws now in force regulating the same. Passed the 18th February, 1797," 37 George III Chapter 4.

delivery [of timber] to the owners," but the Act did little to clarify what constituted necessity for regulation.[23] County-specific legislation did improve, however, and after the 1825 Fire legislation drafted in Fredericton was far more critical of wasteful forest management "in consequence of the neglect of some of the owners of Timber and Saw Mills," but regulation was still framed within the dichotomy of "lumbering and mercantile interests," and not inclusive of the interests of New Brunswick loggers, labourers, or perspective settlers.[24]

New Brunswick was sending more large pine masts to Britain than Nova Scotia and the Canadas combined, and by 1830, loggers were moving further into the Saint John, Nepisiguit, and Restigouche watersheds to extract what tall pines remained in the province's interior. Sawmills appeared in areas where the largest trees had been felled to cut logs from smaller trees and often what was cut for lumber but unprocessed by mills was simply left on the ground to rot.[25] Graeme Wynn, in his preeminent work on New Brunswick's staple industry, *Timber Colony*, noted that "the effects of the onslaught on the forests were soon clear." Regulation did not impede exploitation, and when surveys of the forest stand were commissioned in 1820 "they catalogued widespread destruction of Crown timber."[26] By 1830, the policies of Thomas Baillie, the Commissioner of Crown Lands and Surveyor General of New Brunswick between 1824 and 1851, generated a strong opposition from both local government officials and small lumbering operations.

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[23] "An Act for the Regulation of Booms for securing Masts, Logs, and Lumber, in the County of Charlotte. Passed the 5th of March, 1805," 45 George III Chapter 14.
[24] "An Act to empower the Justices of the County of Charlotte to make regulations for driving Timber and Logs down the Rivers Saint Croix, Magaguadavic, Digdeguash, and their branches. Passed the 19th March, 1827." 8 George IV Chapter 15.
[25] Mary C. Young, *Nature's Bounty: Four Centuries of Plant Exploration in New Brunswick* (Fredericton: UNB Libraries, University of New Brunswick, 2015), 40.
[26] Graeme Wynn, *Timber Colony*, 139.

Baillie heavily favored larger foreign investors over local lumber merchants and sold large swaths of Crown land to British capitalists. Ballie benefited from his government role when he acted as the lead in forming the London-based New Brunswick and Nova Scotia Land Company, which purchased roughly 350,000 acres of land in York County in 1831, and though large sums of money filled the provincial treasury, proceeds were regularly expended on Ballie and his deputy surveyors' salaries.[27] Ballie's corrupt and authoritarian management of the Crown lands enraged local magistrates, colonial administrators, and Saint John-based lumber merchants to the point that the tranquility of the province was in jeopardy.[28] Grappling with similar ferment in the Canadas, the colonial secretary, Lord Glenelg, was eager to make concessions to New Brunswick to maintain peace. In 1836, a deal was reached whereby the legislature assumed control over Crown lands in exchange for paying the salaries of province's civil list.[29]

Increased Assembly control over the province's Crown lands, which garnered greater autonomy over New Brunswick's natural resources by the legislature, was not a cure for the years of ecological degeneration of the province's Crown forests. Neither was the Assembly attempting to undo aggressive extractive settler behaviours. Moreover, the growing scarcity of large pine and fir trees on New Brunswick Crown lands shifted investment to lumber and sawmilling after 1835, to such an extent that the Assembly made attempts at regulating how incorporated bodies, such as King's College Fredericton,

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[27] W. S. MacNutt, "Ballie, Thomas," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.

[28] Graeme Wynn, "Administration in Adversity: The Deputy Surveyors and Control of the New Brunswick Crown Forests Before 1844," *Acadiensis* VII, no. 1 (Autumn/Automne 1977): 60-61.

[29] The surrender of the Civil List to the House of Assembly did not transpire until 1837, at which point Ballie also lost his seat on the Executive Council.

could granted licenses for cutting timber to be milled and how corporate entities could sell parcels of land for similar purposes. Though the College of New Brunswick improved upon its fiscally precarious early foundations, strengthened by its reincorporation in 1829 as Kings College by royal charter and a significant monetary endowment from both the Crown and the province, the institution's corporate identity did not release the school from the temptation of profit at the expense of its land wealth. As early as 1811, the College allowed logs to be cut on its land for the construction of public buildings such as Christ Church Fredericton for a fee.[30] The College began granting its own timber licenses in 1815, which allowed individuals to fell pine "Standing on the College lands… sold by the Treasurer to the highest bidder."[31] The auction of timber licenses was disrupted after tenants of the College's land challenged the legality of the school's land-leases. Only after the dispute was settled by the promise of a new royal charter in 1827 did the College resume its granting of licenses by way of auction resume, and better reflected provincial tonnage rates that increased support to the school. Several petitioners for licenses, however, were approved by the College's Board for a fee of £5 per ton exclusive of all other expenses incurred by the license holder. At all points, the Board maintained that it was exempt from provincial timber fees and resolved at one of its meetings to reject "assessment made upon the College property for Parish Rates" as the Board was "of opinion that the property of the Corporation is not subject to Taxation."[32] After two

[30] College of New Brunswick Board of Governors and Trustees Fonds, US RG 40, Book 1, "College Minutes 1800-1828," Archives & Special Collections, University of New Brunswick Libraries, Fredericton, New Brunswick. Meeting of 22 March 1811, 32. The page number in the minutes is an archival addition and not in the original Minutes.
[31] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 18 August 1815, 50.
[32] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 27 March 1824, 134.

decades of allowing the removal of tall pines and firs from its property, however, the Board, in 1836, decided it was necessary to dispose of certain portions of land that were no longer made profitable by auctioning timber licenses. In a petition to the Legislature for permission to sell portions of the College's 1800 land grant, the Board estimated that the College held "Wilderness Lands in the Neighbourhood of the Town of Fredericton in quantity about Four Thousand Acres, which produce very little income" but could be sold for a large enough sum to sustain the school for years to come.[33]

The school, no longer beholden English legislation that limited leasing agreements, which prevented the Board from leasing any part of its 1800 grant for a term longer than twenty-one years, a point which forced the Board of the College of New Brunswick to seek assistance from the House of Assembly in 1823, entered a new phase of financing the production of knowledge in New Brunswick using stolen lands. Though the reincorporation of the school as King's College amended the initial problem of leases granted in perpetuity, the sale and leasing of lands owned by the College still required an act of the legislature to approve the sale of property. "Being restrained by Law from disposing of the land," according to the Board in its petition to the House, it was "necessary then for a Law" to be passed in the province allowing the Board to sell College lands so that "annual income and interest alone be expended for the purposes of the Institution."[34] The controversy over Ballie's tenure as Surveyor General of Crown Lands, and likely also his sale of huge tracts of land in York county, had a decided impact on how the Assembly chose to allow King's College to sell land. Passed on 16 March

[33] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 30 January 1836, 115.
[34] College of New Brunswick Board of Governors and Trustees Fonds, Book 1, "College Minutes," 30 January 1836, 116.

1836, "An Act to enable the corporation of King's College to dispose of certain parts of their Lands" stipulated that the Board had the prerogative to decide when it wanted to sell portions of its 4000 acres of "wilderness and uncultivated lands," but that "the aggregate of any lands which may be sold and disposed of under the provisions of this Act, shall not exceed one fourth part in quantity," leaving the Board with only 1000 acres it could legally sell.[35] The Assembly also prevented the College from selling potions of land in excess of 100 acres and adjoining blocks of similar acreage could not be sold to the same buyer. In short, the Assembly prevented the wholesale disposal of King's College's property by its Board. Similar legislation was also passed for the Madras Schools in the province, which, as incorporated bodies, made them beholden to the same statute as King's College, but which likewise regulated how the trustees of those schools could sell land.[36] Though this legislation should not be seen as an early attempt at conservation by New Brunswick's House of Assembly, it was a move toward greater regulation of corporately owned natural resources that were fast approaching exhaustion.

The House was cognizant of the destructive impacts that the timber industry had on the province's forests, and the land generally, but were still inclined to attract investors in sawmills for the production of lumber, notably from the United States.[37] Saint John was becoming a major lumber port by the late 1830s, in part thanks to the success of the timber trade in earlier decades which brought scores of immigrants and made Saint John

[35] "An Act to enable the corporation of King's College to dispose of certain parts of their Lands." Passed 16th March 1836," 6 William IV Chapter 54.
[36] "An Act to enable the Governor and Trustees of the Madras School to dispose of certain parts of their Lands." Passed 16th March 1836," 6 William IV Chapter 53.
[37] Bill Parenteau, "Looking Backward, Looking Ahead," 99.

the third largest urban centre in British North American by 1840.[38] The province's acquisition of the civil list in 1836, however, caused the Assembly to modify how it regulated the sale of Crown lands and it did so using the same model that it had applied to King's College and other corporate entities with substantial landholdings. Passed on 22 July 1837, the "Act to establish sundry regulations for the future disposal of Crown Lands and Timber" imposed similar acreage limits on crown lands sold to individuals for lumbering and established a minimum rate of sale at two shillings and six pence per acres.[39] The fact that legislation was applied in like fashion to both corporate and individual persons is certainly an indicator of how liberal ideas were shaping legislative discourse in New Brunswick. Such legislation, however, would have had greater impact at the start of the century before larger commercial enterprises, which were not impacted by provincial legislation in the same way that smaller local proprietors were, dominated the trade. "Lumberers had thinned the cover and reduced proportions of mature pine and spruce over larger areas" by mid-century, according to Wynn, and many began to question what was to be done with the "tracts of Crown lands no longer valuable for lumbering purposes."[40] The province's forests ransacked for decades, Peter Fisher's prediction about the failure of the timber trade appeared to materialize by the latter half of the 1830s, as exported tons of wood products began to decrease for the first time.[41] At that time, the development of both agricultural science and botanical knowledge in New

[38] T.W. Acheson, "The Great Merchant Economic Development in St. John 1820-1850," *Acadiensis* vol. VIII, no. 2 (Spring/Printemps, 1979): 4.
[39] "An Act to restrain the provisions of the fifth section of an Act, entitled 'An Act for the support of the Civil Government in this Province,' and to establish sundry regulations for the future disposal of Crown Lands and Timber in certain cases." Passed 22d July 1837," 7 William IV Chapter 2.
[40] Graeme Wynn, *Timber Colony*, 83; 7 William IV Chapter 2.
[41] Graeme Wynn, *Timber Colony*, 43.

Brunswick was beginning to be encouraged in earnest by the House of Assembly by way of King's College, and different farming and mechanic voluntary societies being established throughout the region.

The desire to encourage agriculture in New Brunswick as a solution to the finite nature of the province's extractive timber economy was not a new one. The idealism, and even nostalgia of a pastoral society was deeply rooted within older genteel Loyalist dreams for New Brunswick. Three generations on, however, that dream had given way to the reality of both social and political developments north of the Bay of Fundy. This reality had permeated the College of New Brunswick, which was originally intended as a citadel to that same dream and molded the school into an institution "Enlarging and extending its material form, and all its capacities to do good," destined to meet the increasing demands of a rising and prosperous people, "as a place of general learning and producing useful knowledge."[42] Producing knowledge that served the needs of colonists depended on the teaching of various branches of both natural history (natural science), which included agricultural chemistry, and natural philosophy (physical sciences) like astronomy and mechanics. Utilising European natural history and philosophy, colonial universities such as King's College Fredericton became centres for the production of knowledge about stolen Indigenous lands that served "settler-colonial interests via redistribution of Indigenous lands and institutionalization of agricultural knowledge

[42] The speech of Sir Howard Douglas as the opening of King's College, 1 January 1829, quoted in France A. Firth, "King's College, Fredericton, 1929-1859," in A.G. Bailey, ed., *The University of New Brunswick Memorial Volume* (Fredericton, N.B.: University of New Brunswick, 1950), 22-23.

production that entrenched white supremacy."[43] New Brunswick settlers were at least as capable as their counterparts in other colonial jurisdictions such as Nova Scotia, Canada, and elsewhere in the British Empire where Western natural history and philosophy acted as "a purveyor of solutions to the needs of imperial governments."[44] Settlers in New Brunswick were actively seeking to improve upon lands that were already cultivated, to expand the breadth of settler knowledge about the geological and botanical components of region, and relied on both a programme of knowledge production and dissemination emanating outward from King's College Fredericton and flowing through those scientific webs that supported empire-building.

The growing demand for training in the mechanical arts and sciences in New Brunswick had a decided impact on the structure of education at King's College and was further influenced by both the House of Assembly and College Board's desire "to find themselves enabled at no very distant period to establish distinct Professorships in Natural Philosophy, Law, Anatomy, and Medicine."[45] The Assembly's acquisition of the civil list in 1837, which had made the Commissioner of Crown Lands in the province an appointment of the legislature, likewise gave the public body direct control over the King's College's operating budget and thus greater influence on the functions of the school. As such, the College responded by creating two new professorships in 1837 aimed at "grounding in the elements of science" into the curriculum of the school.[46]

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[43] Rosalie Zdzienicka Fanshel, "The Morrill Act as Racial Contract: Settler-Colonialism and U.S. Higher Education," UC Berkeley CRNAI Project Reports and Working Papers (June 2021): 1.
[44] Roy MacLeod, ed., *Nature and Empire: Science and the Colonial Enterprise* (Chicago: History of Science Society, 2001), 5.
[45] Peter Fisher, *Notitia of New Brunswick, for 1836, and extending into 1837* (Saint John, N.B., H. Chubb, 1838), 52.
[46] France A. Firth, "King's College, Fredericton, 1929-1859," 26.

Scientific knowledge had become an essential part of a gentleman's university training at British institutions such as Oxford or Cambridge. In British North America, white settlers linked the study of nature to the cultivation of an expansive wilderness. "Science held out a promise," according to Suzanne Zeller in her study of early Victorian science in *Inventing Canada.* Science offered new means "to locate good soils for agriculture and valuable mineral deposits for mining and industry, to cope with climate, and to make commercial use of plants and other natural products."[47] Both science as a theory and as a practice had become woven into the social fabric of the larger British Empire, and in New Brunswick science was likewise central to the cataloging of provincial resources for future development. As such, the appointment of two young Scotsmen at King's College opened a new and dynamic era in scientific knowledge production in the Loyalist province.

### 4.1 Expanding Natural History and the College Museum

Scotland had become a centre of academic science in the British Isles during the Scottish Enlightenment, driven by intellectual and scientific accomplishments by the likes of philosophers and physicians such as Adam Smith and William Cullen, respectively, between the mid-eighteenth and early nineteenth century. Baconian empiricism, which formulated that new scientific knowledge would come about by means of amassing facts through observation and experimentation, gave way to a new scientific tradition that coupled what was natural with what was rational. At the heart of this transformation was

[47] Suzanne Zeller, *Inventing Canada: Early Victorian Science and the Idea of a Transcontinental Nation* (Toronto: University of Toronto Press, 1987), 3.

the University of Edinburgh, a non-ecclesiastical institution that put "scholarship before preaching."[48] The Scottish Enlightenment had far-reaching effects beyond simply one nation's borders, not only because of the esteem garnered by Scottish universities, but also because its ideas were carried by means of an intellectual diaspora because Scotland itself did not have the capacity to employ the growing number of scientifically trained practitioners. Britain's expanding colonial services, however, drew heavily from Scottish university alumni as territorial acquisition through conquest changed the needs and the imperial government.[49]

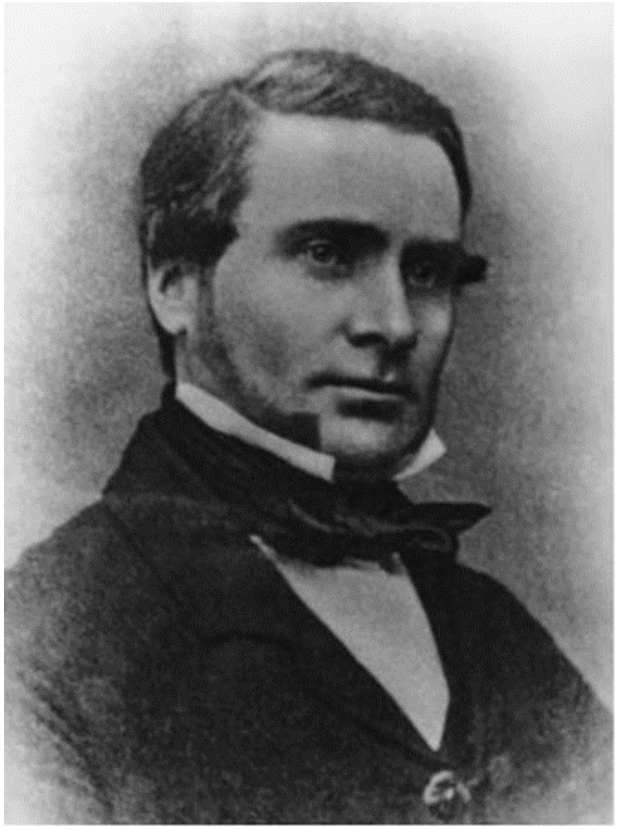

**Figure 4.1 *James Robb - head and shoulders shot*, item: no. 44 (3) [1837?], Courtesy of University of New Brunswick Archives and Special Collections.**

[48] J.B. Morrell, "The University of Edinburgh in the Late Eighteenth Century: Its Scientific Eminence and Academic Structure," *Isis* 62, no. 2 (Summer 1971): 167.
[49] C.A. Bayly, *Imperial Meridian: The British Empire and the World, 1780-1830* (London: Longman, 1989).

As Kapil Raj observes, "it was predominantly the Scots who manned the highly successful operational, scientific, and technological aspects of British activity in India."[50] In New Brunswick, the institutionalisation of scientific knowledge procution likewise drew from a Saltire well when, in 1837, Dr. James Robb (Figure 4.1) and David Gray were appointed as professors of Chemistry and Natural History, and Mathematics and Natural Philosophy at King's College, respectively.

Both Gray and Robb graduated from the University of Edinburgh and, prior to receiving appointments to King's College Fredericton, established themselves as leading educators and being well-versed in both the physical and natural sciences. Gray, who was born in 1810, completed his M.A. in 1829 and for eight years taught mathematics and physics at Dollar Academy, just east of Stirling, Scotland where he achieved "sufficient reputation" amongst his peers.[51] Robb, who was born in 1815, completed his medical degree in Edinburgh in 1835, and attended lectures on zoology at the Sorbonne in Paris where he met Pierre-Joseph van Beneden, a Belgian paleontologist. Robb joined van Beneden in August of 1835 on an extensive research expedition throughout central and southern Europe to collect fossil specimens as part of van Beneden's research on living and extinct aquatic mammals.[52] Both Gray and Robb made themselves known to some of

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[50] Kapil Raj, "Colonial Encounters and the Forging of New Knowledge and National Identities: Great Britain and India, 1760-1850," in Roy MacLeod, ed., *Nature and Empire*, 124.
[51] Desmond Pacey, "The Humanist Tradition," in Bailey, ed. *The University of New Brunswick Memorial Volume*, 62.
[52] Loring Woart Bailey, *Dr. James Robb: First Professor of Chemistry and Natural History in King's College, Fredericton. A Sketch of His life and Labours* (St. John, N.B. : Barnes, 1898), 2; Pierre-Joseph van Beneden, *Ostéographie des cétacés vivants et fossiles, comprenant la description et l'iconographie du squelette et du système dentaire de ces animaux, ainsi que des documents relatifs à leur histoire naturelle* (Paris: A. Bertrand, 1880, i.e. 1868-79).

the most preeminent scientists in Scotland and parts of continental Europe, and in 1836, on the recommendation of Thomas Thomson, Regius Professor of Chemistry in the University of Glasgow, received appointments to King's College Fredericton.[53]

Dr. Robb arrived in New Brunswick in the late summer of 1837, roughly two weeks before David Gray, landing at Saint John following what was a long voyage across the Atlantic made longer by the "Salt Beef and biscuits" paired with "pea soup and rice pudding" at every meal.[54] The port city, which Robb described as being like Glasgow, was in the process of rebuilding its dockyard and waterfront. Though Robb found the "bustle and business" to be like the busy ports of Britain, his first experience in British North America was of a scene of recent devastation from a great fire.[55] Unlike the great cities of Europe where Robb spent time the previous year investigating and collecting specimens, Saint John likely stood as a metaphor to the young Scot for the state of colonial society on the North American continent: under construction. In a series of letters written to his Mother and siblings during his life in New Brunswick, Robb described many of his scientific labours, life in Fredericton, and the utility of King's College to the development of natural knowledge in the timber colony.

Writing to his brother on the first of November 1837, Robb concocted a tongue-and-cheek recipe for building a business in downtown Fredericton. "This is a capital place in one way," wrote the young lecturer, "that is that we have no temptations." But in

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[53] Alfred G. Bailey, "Robb, James," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[54] James Robb to Elizabeth Robb, 21 September 1837 in A. G. Bailey, *The Letters of James and Ellen Robb: Portrait of a Fredericton Family in early Victorian Times* (Fredericton: Acadiensis Press, 1983).
[55] James Robb to Elizabeth Robb, 21 September 1837.

another, "the Stores are ugly, dark shops filled [with things] saleable."[56] A far cry from the commercial centres of Great Britain, and even that of Saint John, Fredericton was a government town carved out of a thick forest and sat upon older Acadian and Wolastoqey settlement.[57] Unlike its sister city, the active seaport at the mouth of the river, Fredericton was by and large the product of Loyalist migration following the American Revolution, chosen for its centrality more than anything else.[58] But to Robb, the region's American attributes brought by the Loyalists were still conspicuous and distinct. "Take a few of the articles from each of the shops in Irongate," proposed Robb, "add another selection from all in the Brownislaw, mix them well together and put a Yanky [sic] with a quill in his ear to overlook them and there you have a North American 'Store.'"[59] It seems odd to imagine a British colony–supplied with British goods and built in such a way that its streets and shops were compared visually to Derby, England–where Americans, rather than Britons, peopled the town. This sentiment, however, was one that Robb believed applied to all colonies in British North America and provides a glimpse into how British immigrants viewed the social landscape of the British colonial world, and the purpose of education as a mean to confer British sensibilities upon distant subjects.

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[56] James Robb to William Robb, 1 November 1837.
[57] Point-Sainte-Anne was attacked and destroyed by New Englanders who staged a campaign up the river valley in 1758. The settlement was burned, and lands were left vacant for later New England planters. See Stephanie Pettigrew, Pointe Sainte-Anne: the Continuity of a destroyed eighteenth-century Acadian village, Acadiensis Blog, 9 July 2019. https://acadiensis.wordpress.com/2019/07/09/pointe-sainte-anne-the-continuity-of-a-destroyed-eighteenth-century-acadian-village/.
[58] Thomas Carleton to Lord Sydney, 25 April 1785, *Letter Books of Lt. Gov. Thomas Carleton, 1784-1812*, Volume 1, Reel 1. Archives and Special Collections, Harriet Irving Library, University of New Brunswick, Fredericton, New Brunswick.
[59] James Robb to William Robb, 1 November 1837.

In the months following their arrival, both Gray and Robb laboured to develop a fledgling programme of science education at King's College.[60] Robb was blunt that he and "Mr. Gray represent the collected Science of our location," and that there was considerable tension between Robb and the school's President, Edwin Jacob, who preferred classical university training as was emphasized by an older Oxford model. Jacob was himself a graduate of Oxford's Corpus Christi College.[61] Gray and Robb, however, were successful in their earliest endeavours, both in soliciting greater support for their lectures at King's College in the province and in connecting New Brunswick within global webs of scientific thought. Within a year of his arrival, Robb had convinced the College Board to allocate £20 for new books on mechanical science and £25 for laboratory equipment. Gray likewise secured £100 for up to three years for the growing mathematics department.[62] Lectures on chemistry, mathematics, and more general natural history commenced in the fall semester of 1837, the popularity of which led Robb to confess that his "time will be wholly occupied with Chemistry this Winter." Through correspondence, to members of their families who remained home in Scotland and to other leading men of science in Britain, France, and the United States, David Gray and James Robb were also able bring to Fredericton "new works on Electricity," "large maps of Canada," and textbooks on "Mathematical Works on Mechanics."[63] Winter did little to cool either's enthusiasm for the dissemination of knowledge, as Robb began a series a

[60] Richard Jarrell, "Science Education at the University of New Brunswick in the Nineteenth Century," *Acadiensis* II, no. 2 (Spring/Printemps 1973): 68.
[61] James Robb to William Robb, 8 January 1839; Richard Wilbur, "Jacob, Edwin," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[62] Senate Minutes, Meeting of 12 March 1838, pp. 170.
[63] James Robb to William Robb, 8 January 1839; James Robb to Elizabeth Robb, 18 March 1838; James Robb to William Robb, 1 April 1838.

"popular lectures" in Fredericton on chemistry, while Gray delivered a "very successful" mathematics course.[64]

By the early spring of 1838, Gray elected to travel to New York via Boston to attend a series of lectures on the different applications of physics during the summer when King's College would close until the new semester in the fall. Robb, who had previously garnered respect amongst his peers in Europe for his fieldwork with van Beneden, lamented that he had "hardly been 5 miles out of Fredericton since [I] came to it." Indeed, Robb felt that between his teaching at King's College, and his popular public lectures in Fredericton, much of his time and energies were pulled away from "botanizing here [in New Brunswick]." A busy winter in Fredericton left little opportunity for Robb to collect either plant or mineral specimens, and the distance from more familiar centres of scientific research, such as Edinburgh or Paris, which Robb had become accustomed, left the young Scot feeling "out of the world and I leave science as it was in August 1837."[65] Geographically disconnected from the intellectual hubs of Europe, Robb felt his own contributions to expanding scientific knowledge had become stagnant by life and professional obligations in Fredericton. Moreover, his own ignorance of the natural histories of New Brunswick created a certain void and anxiety about his own ability to teach the youth of the province about the most basic organic characteristics of their home: about the region's native plants and minerals.

Writing in April 1838 to his brother, William, Robb heralded the arrival of warmer climes, and chance to "make a geological trip through the province" so to prepare

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[64] James Robb to William Robb, 8 January 1839; *Constitution and by-laws of the St. John Mechanics' Institute with the Introductory Lecture by Doctor Gesner* (Saint John, N.B.: The Mechanics' Institute of Saint John, 1839), 12.
[65] James Robb to Elizabeth Robb, 10 June 1838.

himself to teach a course on New Brunswick's natural history when the College reopened in September. "Summer is coming," exclaimed Robb. "I hear its voice. The Willow buds are bursting. Rain is coming instead of snow. The roads are everlastingly cruel and dirty and the river ice is unsafe." "By God's providence," Summer was an opportunity to "begin again Geology and Minerology," and marked a return to the routines of observational science hitherto absent from Robb's life in New Brunswick.[66] Writing home again in June to his mother, Robb discussed the forthcoming closure of the King's College for the season, and his intention to "leave Fredericton immediately thereafter for the woods. I require to know the Geology and Mineralogy and Botany of the country before I begin to teach them."[67]

Eager for the College's doors to close, Robb rejoiced as the hollowing sound of ice melting in springtime finally quieted throughout the river valley, and he began making plans for an expansive expedition throughout New Brunswick, Nova Scotia, and the small coastal reaches of Lower Canada and Prince Edward Island. Having forwarded her a map of the region, Robb eagerly instructed his mothing in Scotland "to follow with a pencil from Fredericton to Woodstock, Grand Falls, Tobique river to its source, down the Nepisiquit [sic] to the Gulf of St. Lawrence. Down the Coast to Miramichi to Baie Verte and Pictou, to Prince Edward Island and Cape Breton, to Halifax to Annapolis to St. Andrews to St. John to Fredericton."[68] An arduous undertaking to say the least, let alone for someone who had only been in the county for less than a year, but a necessary action so to expand his knowledge of the lands and waters that he had been tasked to teach.

[66] James Robb to William Robb, 1 April 1838.
[67] James Robb to Elizabeth Robb, 10 June 1838.
[68] James Robb to Elizabeth Robb, 10 June 1838.

Finally released from his duties in Fredericton, Robb department the town on 29 June 1838, the day after the coronation of Queen Victoria at Westminster Abbey. Leaving behind the town's jubilant celebrations of the new monarch, he headed westward on foot up and along the Saint John River (see Figure 4.2).

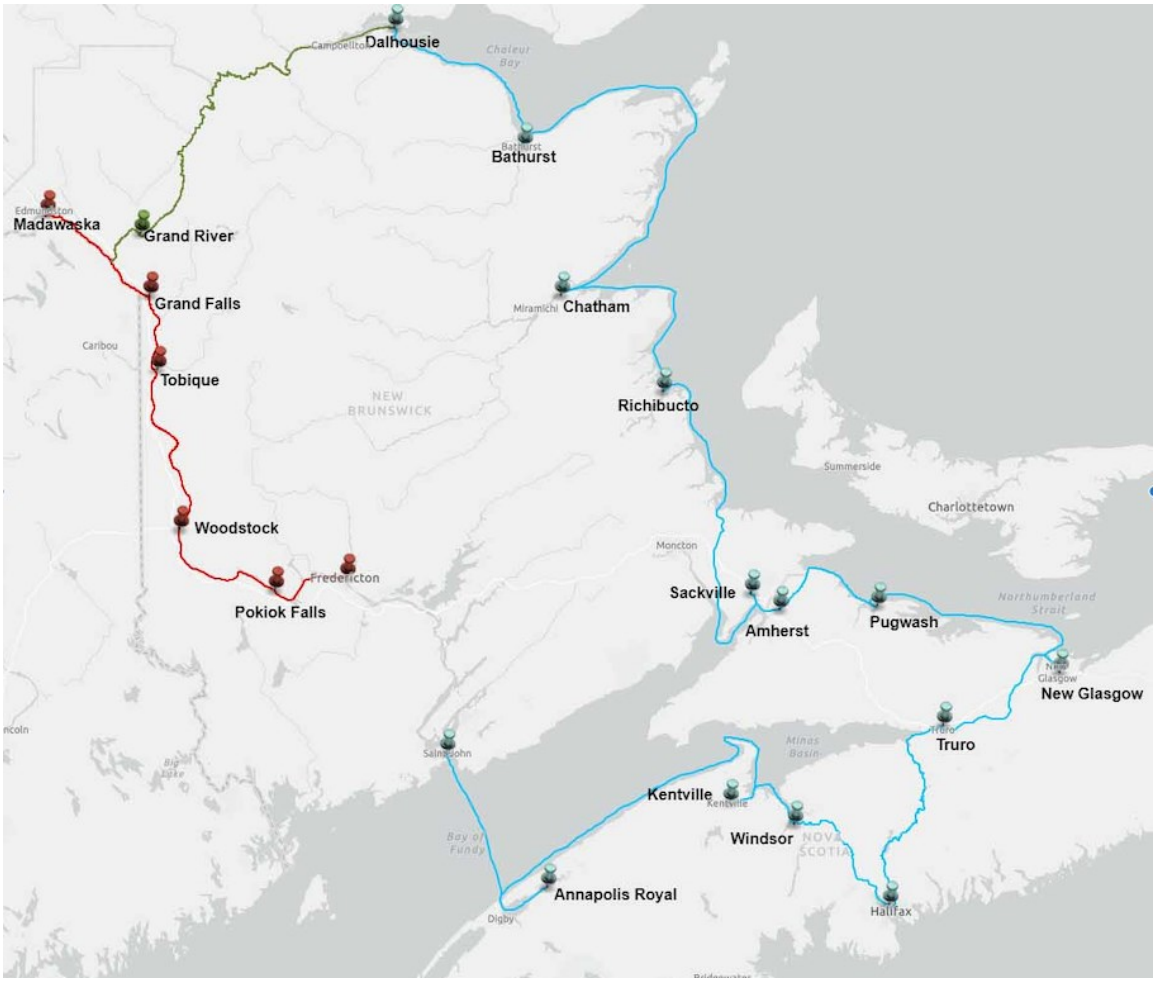


**Figure 4.2 Map of James Robb's 1839 Expedition throughout New Brunswick and Nova Scotia. The red, green, and blue lines indicate when Robb hired Wolastoqiyik, Acadian, and Mi'kmaq guides respectively during his travels according to his letters. Drawn by the author with the assistance of Stephanie Pettigrew.**

The commencement of Robb's first scientific expedition marked not only his return to empirical data collection but also positioned New Brunswick within a new era of Victorian science that would instill within the settler population a "sense of direction,

stability, and certainty for the future."[69] Above all, however, this new era accelerated the acquisition and accumulation of natural knowledge by settlers as a means of Indigenous dispossession, erasure, and the invention of settler sovereignty over stolen land.

Headed toward Woodstock and accompanied by William Shore, one of his pupils at the College, hired to help him collect and carry all kinds of natural specimens along his route, Robb began his expedition on foot along the southern side of the river. After having walked for the better part a day, he arrived at "the falls of the Pokiok, a considerable waterfall about 30 or 40 miles above Fredericton." Though small, the gorge from which the water fell was a well-earned sight, and "amply rewarded me for the trouble of reaching them."[70] It was also there that he realized that walking the length of New Brunswick was probably not a feasible plan and instead chose to hire Wolastoqiyik guides and canoed up the river. Robb's choice is indicative of the enduring and critical necessity of Indigenous knowledge and modes of transportation into the mid-nineteenth century. Robb was by no means the first scientist to solicit help from Wabanaki peoples, preceded by others such as Thomas Wright who sought help from the Peskotomuhkati to identify St. Croix Island. Robb's expedition, however, was the first its scale in the Maritime region for the purpose collecting specimens of diverse plant-life and minerals. Moreover, the long-term result of this expedition allowed him to become a central part of numerous other scientific endeavors in the province over the next two decades. From his 1838 expedition, and others in subsequent years, Robb collected over 400 natural specimens, and amassed a wealth of knowledge about the province's interior which he deployed in his teachings at King's College, informed published literature on the region's

[69] Suzanne Zeller, *Inventing Canada*, 9.
[70] James Robb to Elizabeth Robb, 12 August 1838.

agriculture potential, and was even used to promote New Brunswick to perspective British migrants.

For Robb, it became apparent very quickly just how critical Indigenous peoples were, not just for the sake of his own research, but to commerce and mobility generally. Over the course of six weeks, Robb continued up the St. John River during the summer of 1838. He met with Wolastoqey chiefs at Tobique, portaged the Grand Falls, and even remarked that those falls were "very much better than any of the Swiss water falls which are so much vaunted."[71] At Madwaska, Robb parted with his Wolastoqiyik guides and hired two French settlers to take him up the Grand and Resitgouche River to Dalhousie. Probably the most difficult part of his journey, Robb described the Grand River as "shallow, narrow, winding like a serpent or 50,000 serpents, infested by mosquitos, black flies and sand flies so numerous that the moon could scarcely rise through the heart of them." When they made camp along the gravely riverbed, which Robb more aptly described as a ditch, the expedition used spruce boughs as beds, hunted birds, and made sure to pour enough whiskey in their water to make sleep possible. In a letter to his mother, Robb wrote at length of this part of his journey, describing how the group would:

> Anoint our hands and face with mosquito pastes, put on our gloves and veils and try to sleep. The Sun and the flies called by the Indians 'bite him no see hims' were the greatest pests but at length the sea breeze of the Bay of Chaleur brought a cure for both and worn out and fatigued we arrived at Dalhousie, a thriving Scotch settlement at the Mouth of the Restigouche.[72]

The expedition stayed only a short while before Robb again hired Indigenous guides, most likely Mi'kmaq, who took him southward, first to Bathurst, and then on to Chatham along the Miramichi River where Robb remarked upon the devastation of the

[71] James Robb to Elizabeth Robb, 12 August 1838.
[72] James Robb to Elizabeth Robb, 12 August 1838.

forests. Most of northern New Brunswick was burnt by wildfire in 1825, and over a decade later the scars upon the earth were still visible. Describing the scene in one of his letters, Robb wrote that in order to understand the magnitude of destruction, one must "conceive half of Scotland to be covered with aged pine timber, conceive this tact peopled in part, filled with animals of all kinds and conceive it all to be burnt to the ground in 20-30 hours and you will have an idea of this, perhaps the most frightful on record of any of the dispensations of Providence." Providence notwithstanding, Robb's own astonishment at what he saw in the northern parts of the province, "upwards of 600 square miles still covered with the black withered stumps of tees," resonated and would influence his later efforts to promote agriculture in the New Brunswick.[73]

Leaving the Miramichi River Valley from Chatham, the expedition continued down the coast, portaged over the Ismuths of Chignecto, and pushed further south toward Nova Scotia, first to Pictou where Robb remarked on "the splendid coal mines of New Glasgow," and then Windsor, where he visited Nova Scotia's own King's College and was all together unimpressed at the state of the school "which is ill and falling off in spite of the Bishop [of Nova Scotia]."[74] Going so far as to suggest that the scholarships offered by the school were more like bribes considering the state of education it offered. Finally, Robb and Shore booked passage from Annapolis to Saint John. Reflecting on his journey, which lasted the better part of seven weeks, he wrote home to his mother that:

> I am in good health, considering my late traveller's [sic] way of living. We cannot be too thankful for all the mercies we have experienced in this long and rough journey. My object has been to see the rocks and plants of New Brunswick in order that I may speak of them in my class. I have seen the greater part of the province and have visited the mines and mining districts, as much as possible. New Brunswick is on the whole but a poor country. Its timber is its riches. I never

[73] James Robb to Elizabeth Robb, 12 August 1838.
[74] James Robb to Elizabeth Robb, 12 August 1838.

> would advise any farmer to go to New Brunswick because Canada or the States have better climate and Soil. No professional man need go, they only live they don't get rich.[75]

An almost damning appraisal of the agricultural capacities of the province, Robb's expedition provided him with not only firsthand knowledge of the landscape, which he employed in his assessment of the state of settler husbandry, but also informed his growing belief that a dissemination of scientific knowledge was essential for the further economic development of New Brunswick. And he was not alone in this belief. Upon his arrival in Saint John Robb was reunited with David Gray, who was "half spent from the heats of New York, where he had been well employed examining the American well-regulated system of Education and their mechanical arts and processes." Robb was less enthusiastic about Gray's high praise of "the go ahead character of the Yankees," but the two received a hearty welcome in the port city and together attended the inaugural meeting of the newly formed Mechanics Institute.[76]

Formed in 1838, as an outgrowth of the New Brunswick Philosophical Society, the Saint John Mechanics' Institute was created "for the purpose of instructing Mechanics and others in popular and useful science."[77] The Institute was intended to enhance settler knowledge, not just about the practical applications of new machinery and how it may be applied to colonial life, but also about the different kinds of natural specimens found throughout New Brunswick. By means of "Lectures, Apparatus, Models of Machinery, a Museum, a Library and a School" the Institute would promote the interchange of useful

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[75] James Robb to Elizabeth Robb, 12 August 1838.
[76] James Robb to Elizabeth Robb, 12 August 1838.
[77] "An Act to incorporate the Saint John Mechanics' Institute. Passed 23d March 1839," 2 Victoria Chapter 18, *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1839* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1839).

knowledge amongst its members and the public.[78] Though not well-supported by the mercantile elite who dominated the city's social and political landscape, who were skeptical of a community-based literary and scientific establishment, the Saint John Mechanics' Institute became a central part of the emergence of popular scientific culture in New Brunswick.[79] Robb and Gray, whose own recent exploits within and outside of the province, were illustrative of the growth of scientific culture in New Brunswick, and thus both were eager to attend the Institute's inaugural lecture by Dr. Abraham Gesner.

Gesner was born in Cornwallis, Nova Scotia in 1797. His father was a Loyalist refugee who migrated to Nova Scotia after the American Revolution. Through his twenties, Gesner sold horses to slave plantations in the Caribbean and parts of the United States, but when this enterprise failed after most of his livestock was lost in two shipwrecks, he took up the study of medicine. In 1825, Gesner traveled to London to train at St. Bartholomew's Hospital and there he developed a lifelong friendship with Sir Charles Lyell, the Scottish Geologist and author of *Principles of Geology* (1830-33).[80] Though he qualified to practice medicine in Nova Scotia, upon his return to the province in 1827 he instead chose to pursue his passion for geology. In 1836, Gesner published his first book, *Remarks on the Geology and Minerology of Nova Scotia*, and in 1838 he relocated to Saint John having been appointed Provincial Geologist (Gesner's career and

[78] *Constitution and by-laws of the St. John Mechanics' Institute with the Introductory Lecture by Doctor Gesner* (Saint John, N.B.: The Mechanics' Institute of Saint John, 1839), 3.
[79] Martin Hewitt, "Science as Spectacle: Popular Scientific Culture in Saint John, New Brunswick, 1830-1850," *Acadiensis* XVIII, no. 1 (Autumn/Automne 1998): 93.
[80] Loris S. Russell, "Gesner, Abraham," in *Dictionary of Canadian Biography [DCB], www.biographi.ca*.

exploits as a settler scientists are explored further in Chapter Five).[81] Gesner's inaugural lecture emphasized the moral significance of the Mechanics' Institute, the necessity of training New Brunswick's youth in the sciences, and, perhaps most appealing to Gray and Robb, the importance of "the science of mathematics [that] we are indebted for the power to behold the great system of the universe." Of Chemistry, Gesner proclaimed it "the science which makes us acquainted with the natural bodies that surround us. With its aid mankind would be deprived of most of their comforts and luxuries, and the mineral, vegetable, and animal kingdoms would remain unexplored."[82]

Electrified by Gesner's words and inspired by the more practical aims of the Saint John Mechanics' Institute and the utility of scientific knowledge in New Brunswick, Robb envisioned a similar institution at Fredericton. Moreover, of his own collection of plant and mineral specimens assembled during his recent expedition throughout New Brunswick and Nova Scotia, he immediately began making plans for a natural history museum at King's College.[83] Writing to brother after having returned to Fredericton in Early September, Robb made several requests for books, including recent publication by Charles Lyell, and ore samples. "Anything for my Museum will be very thankfully received," as Robb intended to make requests to his colleagues in Scotland, including Lyell and other others such as Sir William Jackson Hooker and "John Stirling, who talks

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[81] "An Act to appropriate a part of the Public Revenue for the services therein mentioned. Passed 23 March 1839," 2 Victoria - Chapter 2, *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1839* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1839).

[82] *Constitution and by-laws of the St. John Mechanics' Institute with the Introductory Lecture by Doctor Gesner*, 19 & 20.

[83] For an examination of the making of a natural history museum in New Brunswick after 1860 by the New Brunswick Natural History Society, see Lianne McTavish, "Learning to See in New Brunswick, 1862-1929," *The Canadian Historical Review* 87, no. 4 (2006): 553-581.

also of ores and fossils. [I] will try to get them." Leaning into both his familial and professional networks, Robb moved quickly to build his own cabinet of natural curiosities "to be presented as soon as a suitable place can be procured for their deposit."[84] By winter, Robb's convictions remained strong, and he began to feel a "certain degree of consideration, consequence, [and] respectability connected with our place at King's College, that reconciles us to the location in spite of every incidental obstacle." A far cry from the dislocation he expressed the previous year, "I look upon [New Brunswick] now as a capital place for study and for getting up the principles of my favorite science, Natural History. I don't grudge the labour." [85]

Robb's museum was composed of both the natural specimens he collected during his recent expedition and an assortment of Scottish flora, fauna, and minerals obtained from Professor Thomson of the University of Glasgow, who recommended both Robb and Gray for their posts at King's College. In January 1839, at his own expense, Robb purchased a sleigh and horse to transport materials for the museum between Saint John and Fredericton, while Gray delivered a very successful course on mathematics at the Mechanics Institute and was made an honorary member for his labours.[86] By the spring of 1839, Robb's museum was set up in the College's refectory, and the ample seating provided him with a venue for public courses on botany and geology, which were very popular and even open to women from Fredericton.[87] Robb and Gray were making successful progress in the development of science education in the province, and were

[84] *New Brunswick Courier*, 30 April 1839.
[85] James Robb to William Robb, 8 January 1839.
[86] *Constitution and by-laws of the St. John Mechanics' Institute with the Introductory Lecture by Doctor Gesner*, 12.
[87] James Robb to Jane Robb, 26 February 1839.

generally well-received by both a general public and colonial administrators alike. This early success, however, was disrupted in the Summer of 1839.

Following his arrival in New Brunswick, two of Gray's sisters in Scotland died, and his mother was devastated. "He conceived it a duty to go and condole with her," wrote Robb, reflecting on Gray's decision to quit the province and return home. Professor Gray formally resigned his post at King's College in September 1839, and Robb saw the loss of his colleague and friend as a blow to "the Collegiate character of the Institution." Filling the vacant position was also likely to cause "terrible rows in the House this next Session regarding the College," not least of which because "Mathematics is a very important branch and there are probably none in the province who can replace him [Gray]."[88] Robb also feared that a faction of the Assembly was more inclined to reallocate the mathematics department's funds towards "the support of some such a school as Dollar Academy or the new High School of Glasgow," than allow public monies for Gray's mathematics department to be managed by the College's President, the Rev. Edwin Jacob, who favoured greater emphasis on religious instruction and more classical education.[89]

Robb described himself as conversative and was not opposed to religious instruction at King's College, but in order to prevent a fight between the College and the Assembly he proposed that alterations be made to the duties of the Divinity professorship, which by 1839 included the teaching logic, metaphysics, and, after Gray's resignation, mathematics. Dr. James Sommerville held the position since 1829, and prior to that had been the Preceptor of the former College of New Brunswick since 1809. The growing

[88] James Robb to William Robb, 17 December 1839.
[89] James Robb to William Robb, 17 December 1839.

work, however, overwhelmed Sommerville and he suffered a serious breakdown in his mental health and was admitted to an asylum in Scotland in 1840 when he was deemed "incapable of managing his affairs."[90] Robb wished to separate the teaching of mathematics from the Divinity professorship when it became apparent that Edwin Jacob, who both Robb and Gray detested, would assume the role. A stanch conversative, Jacob was very unpopular, both at the College and with the reform-minded members of the House of Assembly who wanted to liberalize the entire New Brunswick educational system through the 1840s. Jacob aspired to become Bishop of New Brunswick and supported restructuring the College to once again be a bastion of Tory privilege, which the Assembly opposed. Consequently, Robb saw Jacob as a "cold, reserved, vain and uncertain in his behaviour. He wishes to have all the authority, or rather he does not want anybody else to have it if he 'don't!'"[91] Despite his fraught relationship with Jacob, Robb did not wish to completely separate religious instruction from natural history. Rather, he thought it was an important component therein because "Science and morals are the outer courts of which religion is the sanctuary. Morality," however "is not religion nor is science morality."[92] To conflate the two, which Robb suspected Jacob was likely to do, was antithetical to both colonial progress and the development of scientific knowledge in New Brunswick.[93] Jacob's influence, moreover, was likely to encourage the Assembly to

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[90] Quoted in Linda Squiers Hansen, "Sommerville, James (d. 1852)," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[91] James Robb to William Robb, 1 January 1839.
[92] James Robb to Master William Robb, Exact Date Unknown [Summer 1839].
[93] In an article reflecting the state of King's College and tensions between Jacob and the Assembly published in a Fredericton newspaper 25 years after the fact, the author emphasised that Jacob "had no sympathy with Colonial political progress." Robb expressed many similar sentiments, going so far as to say that for his actions against Robb and Gray's endeavours that Jacob was "not to be trusted." See Head Quarters, Fredericton, 22 August 1866; James Robb to William Robb, 18 September 1839.

dismantle King's College altogether, undoing the labours of Robb, Gray, and even Sommerville in the development of education in natural history and philosophy at the collegiate level in New Brunswick. Robb wanted Gray's successor to be an ally against a restoration of an older Oxford model at King's College while also support the expanding the bounds of science in the province.

### 4.2 Brydone Jack, College Reforms, and an Observatory in New Brunswick

Following his return to Scotland in 1839, David Gray assumed a position as Rector of the Inverness Academy but maintained his friendship and professional relationship and Robb through correspondence. Concerned about the future of collegiate training in New Brunswick, Gray actively looked for a candidate to be his replacement at King's College. With the assistance and endorsement of Professor Thomson at Glasgow, Gray submitted his recommendation to the College Board to appoint William Brydone Jack "as the Professor of Mathematics and Natural Philosophy."[94] Jack, like Robb and Gray, was born in Scotland in 1817, and graduated with an MA in mathematics from the University of St. Andrews in Fife in 1840. Trained in the Scottish tradition that emphasised empirical and practical knowledge, Jack arrived in New Brunswick in the Summer and by September 1840 began teaching the "art of observing and the art of experimenting."[95]

Like his predecessor David Gray, William Brydone Jack (Figure 4.3) only anticipated to remain in New Brunswick for a few years and return to his native Scotland

[94] Senate Minutes, meeting of 9 September 1840, p. 196.
[95] Quoted in J. E. Kennedy, "Jack, William Brydone," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.

**Figure 4.3** ***William Brydone Jack - head and shoulders shot*****, UA PC-13, item: no. 27 (1) September 1840. Courtesy of the University of New Brunswick.**

with significant teaching experience so that he might gain a post there. Jack, however, became committed to expanding the intellectual capacities of King's College, and to the aim of developing the school as an institution dedicated to the growth of scientific knowledge in the province and its practical applications within colonial life. Upon his

arrival in the autumn of 1840 Jack initially shared lodgings with James Robb in the College. The two developed a friendship that continued throughout their lives and was built upon each other's professional successes in the province. When Robb married Ellen Coster in December 1840, Jack was in attendance even though they were only acquainted for a few months, and together Jack and Robb weathered many different struggles at the College through the 1840s.[96] The College became the centre of a bitter political storm fought between members of the legislature and Dr. Jacob, each with opposing views about what the function of King's College was to be.

The assault on the College, like that on the province's forests, was born out of the want to expand resources development in New Brunswick. Frances Frith, the former head of the Archives of the University of New Brunswick Library, first made this connection that "the political struggle that took form in New Brunswick… was reflected in the exploitative and self-seeking mentalities of many New Brunswick legislators," many of whom had personal stakes in trade and mining operations.[97] Their view was that the young men of the province were better served learning practical skills than squandering their time and province's own funds perusing several years of classical education at King's College. "They claimed its curriculum had too narrow an appeal and did not provide the kind of vocational training which they considered necessary."[98] Indeed, the Assembly laboured for decades to shift the focus of collegiate training, achieving some early success due to the institution's legal woes instigated by the 1800 land grant. After 1829, and the reorganization of the school by royal charter, many still considered the

[96] James Robb to William Robb, December 1840.
[97] Frances A. Firth, "King's College, Fredericton, 1829-1859," in Bailey, ed., *The University of New Brunswick Memorial Volume*, 24.
[98] Frances A. Firth, "King's College, Fredericton, 1829-1859," 24

College to be a bastion of Tory privilege and in Dr. Jacob the Assembly found evidence to that fact.

Jack's arrival preceded a period of serious internal deliberation about the nature and structure of education at the College, and how that education might be valued in the province. Both he and Robb agreed with Jacob about the duty of the school to impart both intellectual and moral culture but disagreed with using the older Oxfordian model that Jacob had been trained in, being enforced at Fredericton. The College Board, seeing pressures mounting both from within and outside the school, formed two committees in 1842; one to review the College's charter in light of continued rumblings from the Assembly. The other to make recommendations on the expansion of vocational training and practical knowledge at the College. Of the first committee, Jacob refused to change his opinion that only members of the Anglican clergy could preside over the College Board, a change demanded by reformers in the assembly that would effectively erode what power he had. Jacob went so far as to seek legal advice from London regarding the matter and in a meeting of the College Board presented a "Dispatch for the opinion of Her Majesty's loyal advisors, I have received a Report from those Officers which states that it is not necessary that the present Charter of the College should be surrendered."[99] "The Board meets and instead of discussing the actual state of the College," wrote Robb about the unfolding situation, that time "is wasted in discussing the constitution of the Board themselves." In a more pointed observation, Robb blamed Jacob for the target placed on the institution by the Assembly, nothing that the professor of divinity was "a dead weight and until he goes, I feel assured that our situation cannot be altogether comfortable."[100]

[99] Council Minutes, 26 April 1842, p. 214.
[100] James Robb to William Robb, 16 July 1842.

The second committee, a Standing Committee of the Library, was asked to review the potential for increasing vocational training and was headed by Robb and Jack who submitted a report to the Board in July 1842. In it, the two proposed "that £200 a year out of the College funds be set apart and is specifically appropriated towards increasing the College Library and [purchasing] Philosophical Apparatuses" as recommended by the professors of natural history and philosophy. In turn, the Board asked that the committee report on the extent that such apparatuses and the museum be "required to increase with a feasible amount of expense that would be required."[101] In turn, the proposed expansion of the both the library and equipment at the college was supported by the College Chancellor, the newly appointed lieutenant Governor William MacBean Colebrooke, who arrived in New Brunswick in April 1841. Colebrooke, like his earlier predecessor Douglas, took an active interest in the College and in particular the utility of science and technological innovation in the province. In October 1842, Colebrook requested a meeting of the College Board to hear the final report of the Standing Committee on the Library. The committee resolved, unanimously, to recommend to Colebrooke and the Board, not only the annual appropriation of £200, but also the acquisition of new books on the mechanical arts, chemistry, and agriculture for the library, the purchase of apparatuses such as a telescope for Professor Jack, and the expansion of the College museum and library into rooms in the upper corridor on the south side of the College building; a total estimated expense of no less that £1500.[102] The purchase of new instruments requested by Jack was given immediate approval by the College Board, while

[101] Council Minutes, 4 July 1842, p. 218.
[102] "Report of the Standing Committee the Library," College Minutes, 27 October 1842, p. 220.

other recommendations were tabled for further deliberation. With support from the Lieutenant Governor, the purchase of books was approved by the Board the following January, and in April 1844 the Standing Committee delivered another report that the acquisition of books on mathematics and chemistry amounted to half of the £200 annual endowment while books on divinity was less than £50.[103]

Support for the College's library was only the first of several investments and reforms that Colebrooke made in the expansion of the sciences in New Brunswick. Moreover, it marked the beginning of a successful relationship between the colony's Lieutenant Governor and Professors Jack and Robb, which continued throughout Colebrooke's vice regal tenure. Outside of King's College, investment in the sciences was gaining popularity, in part because of the reforms at the College but also thanks to the success of the Saint John Mechanics' Institute. Through its library, the Mechanics' Institute made available to the public some of the most popular scientific literature of the age, such as the American magazines *Popular Science Monthly* (New York).[104] In Britain, Canada and the United States, mechanics' institutes popularized aspects of the sciences for the public, providing both practical knowledge and entertainment through libraries, lectures, and electrical and chemical spectacle.[105] In time, a recognition of the many benefits of science to the greater public developed, and in Saint John this was

[103] College Minutes, 1 April 1844, p. 236.
[104] Randall F. Miller & Diane N. Buhay, "19th to early 20th century geology lectures in Saint John, New Brunswick, Canada," *Atlantic Geoscience* 51 (2015): 311-331.
[105] Martin Hewitt, "Science as Spectacle," 93. See also, Bernard Lightman, "Victorian science and popular visual culture," *Early Popular Visual Culture* 10 (2012): 1-5; Iwan Rhys Morus, "Worlds of Wonder: Sensation and the Victorian Scientific Performance," *Isis* 101, no. 4 (December 2010): 806-816.

particular true of both astronomy and magnetism when the Assembly received a petition "setting forth the great advantage… of an Observatory."[106]

Astronomical observatories played an important part in building a transcontinental British Empire and in New Brunswick they produced important knowledge during the St. Croix Commission (1796-98) that paved the way for the commercial exploitation of Wolastoqiyik and Peskotomuhkati rivers and lands. The use of a temporary observatory built near St. Andrews by the Commission allowed Thomas Wright and Samuel Webber, the astronomers appointed by the British and United States government respectively, to successfully position multiple rivers that flowed into the bay of Fundy longitudinal and secured New Brunswick's claims to resources. At mid-century, the worth of astronomical science to settler colonialism was not lost on either colonial administrators or the professors of King's College. How an observatory could be used to study, map, and understand land and water was central in much of the correspondence written by Jack, Robb, and others, seeking science for a public service. A permanent observatory in New Brunswick was not just an apparatus meant for professors at King's College to observe the stars and discern from them information about the world below. The study of the cosmos and the magnetic composition of the earth became an important buttress to commercial enterprise on land and at sea. In an 1845 petition to the house of assembly of New Brunswick James Agnew, a Saint John watchmaker, boasted of the "great advantages that would result to the Commerce of that place by the erection of an Observatory, and praying Legislative aid toward accomplishing so desirable an object."[107]

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[106] *Journal of the House of Assembly of… New Brunswick from January to April 1845* (Fredericton: J. Simpson, 1845), 86.
[107] *Journal of the House of Assembly of… New Brunswick from January to April 1845* (Fredericton: J. Simpson, 1845), 86.

The utility of an astronomical observatory was not a foreign concept to many New Brunswickers and was complimented by a general fascination with celestial phenomena. The public was kept informed by local newspapers about advances in astronomy and horology. For example, in December 1830, the Saint John-based *New Brunswick Courier* announced the advancement of chronometers as a result of trails at the Royal Observatory, Greenwich, for which a clockmaker named John Carter won £167 for his chronometer that lost just over a second over a twelve-month period. The *Courier* added that the achievement came at a time of steady "Decline of Science in England," adding that "not a single discovery or invention of prominent interest has been made in our College (King's College Fredericton)."[108] Smaller weeklies, such as Woodstock's *Telegraph and New Brunswick General Register*, conveyed the labours of astronomers around the globe, including at the French Academy of Sciences, to more rural New Brunswickers. The *Register* enthusiastically reported on the investigation of "wandering stars," notably the sun-grazing Great Comet of 1843, which developed an extremely long tail during and after its perihelion passage and made headlines up and down the St. John River.[109] By 1845, there was even particular attention paid to the work of the Astronomical Observer to Harvard University, William Cranch Bond, by New Brunswick newspapers. The Great Comet aroused enough public interest in astronomy that Harvard was able to raise just over $25,000 toward the construction of a state-of-the-art observatory, designed by Bond, and furnished with a fifteen-inch German-manufactured

[108] "Chronometers," *New Brunswick Courier*, 18 December 1830 (Saint John, N.B.).
[109] "The Comet," *Telegraph and New Brunswick General Register*, 20 May 1843 (Woodstock, N.B.).

refracting telescope (equal in size to the largest telescope in the world at that time).[110] News of Bond's astronomical exploits in New England made regular appearances in Saint John newspapers, notably his "Discovery of a Third Ring to the Planet Saturn" in 1850.[111] Thus, when the assembly received Agnew's petition in early February 1845 it was given serious attention by the legislative assembly which promptly commissioned the province's naval surveyor, William Fitz William Owen, to investigate the potential for an observatory at Saint John.

Owen presented his report to Lt. Governor Colebrooke and the Assembly within a matter weeks, and was frank that "the necessity of an Observatory at Saint John must be evident, on consideration, at least for the purpose of obtaining true time by the Sun."[112] Doing so would regulate the marine chronometers of the numerous merchant ships that traversed New Brunswick ports on route to New England, Britain, and the small islands of the Caribbean that required precise longitudes. Accurate time keeping had been key to any oceangoing voyage since the early eighteenth century, enabling the navigation of the Atlantic for thousands of European migrants and accelerating colonial expansion to unprecedented levels after 1800. "At Boston," Owen observed, "Mr. Bond has a similar establishment, and is now a very reputable Astronomer, and the advantages derived therefrom to the Commerce of that Port are known to be incalculable; wrecks less

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[110] William Cranch Bond, "Description of the Observatory at Cambridge, Massachusetts," *Memoires of the American Academy of Arts and Science* 4, no. 1 (1849): 177-188; Edward S. Holden, "Portrait of William Cranch Bond, Director of the Harvard College Observatory, 1840-1859," *Publications of the Astronomical Society of the Pacific* 9, no. 55 (1897): 91.

[111] "Discovery of a Third Ring to the Planet Saturn," *Christian Visitor*, 29 November 1850 (Saint John, N.B.).

[112] "Observatory at Saint John: Report of the Honorable Captain Owen," in *Journal of the House of Assembly of … New Brunswick from January to April 1845* (Fredericton: J. Simpson, 1845), cvii.

frequent, navigation and commerce are rendered more secure, and commercial enterprise nourished by its silent effects." He estimated that the use of the observatory by commercial vessels and their crew would draw an estimated annual revenue of £350 to provincial coffers. Owen's report placed little emphasis on an observatory for the sake of science, seeking to emphasise instead its potential commercial advantages, arguing that "In the present advanced state of practical science, it is absolutely discreditable to the whole Province, and more particularly to the extensive Commercial Interests at Saint John, that such an establishment does not yet exist." His argument for building an observatory in New Brunswick was also shaped by a notion of greater public good, and for Owen such a building was comparable to the construction of lighthouses. He even suggested that monies from the Seaman's Hospital and Light House Funds be used to front the cost, estimated at £450.[113]

Despite Agnew and Owen's best efforts, the Saint John observatory was never built, likely due to its estimated cost. As Richard Jarrell has observed in his history of Canadian astronomy, *The Cold Light of Dawn*, initial "government-supported astronomy in nineteenth-century Canada… colonies provided small grants. Before the 1860s, none of these grants were permeant or amounted to much in monetary terms." Legislators in the Canadas and New Brunswick expected a reasonably quick return on their investment and did not intend to create long-term astronomical programmes.[114] The attempt to build an observatory in Saint John, however, amplified wider conversation about the utility of science and astronomy in New Brunswick given its potential in light of a fragile timber

[113] Observatory at Saint John: Report of the Honorable Captain Owen," cviii.
[114] Richard Jarrell, *The Cold Light of Dawn: A History of Canadian Astronomy* (Toronto: University of Toronto Press, 1988), 31.

economy, but particularly as it related to political issues such as the province's borders with Maine and Quebec. Writing in March of 1847, Robb discussed with Lt. Governor Colebrooke, "the subject of a magnetic and meteorological observatory at Fredericton."[115] The construction of an observatory in the province was becoming intricately linked to broader geopolitical questions, and part of a longer legacy of Britain using astronomy to assert its claim to Wabanaki territory in New Brunswick. Robb, who only arrived in 1837, likewise argued that the lack of an observatory in New Brunswick compounded issues around the province's border with Maine–formerly with Massachusetts–a problem that originated from the 1783 Treaty of Paris. Though the Webster-Ashburton Treaty established a borderline between Maine and New Brunswick in 1842, extending beyond the line drawn by the St. Croix Commission in 1798, issues still arose over questions of jurisdiction and property ownership, specifically above the source of the St. Croix River. "The honourable Judge Carter," wrote Robb, was faced with the dilemma of an overabundance of cases brought before him "wherein disputes upon the Boundary Lines arising from want of data" not alleviated by the 1842 treaty.[116] The New Brunswick-Maine border had been a cause of settler anxieties in New Brunswick for nearly three generations and Robb's correspondence with Colebrooke picks up on this tension, especially given his proposition of an observatory as a solution to such a long-term issue. "Study and effectual means," argued Robb, will "preserve the Colonists from falling deeper into this 'bottomless pit of litigation' [and] ought now to be taken."[117]

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[115] James Robb to William MacBean Colebrooke, re: a magnetic and meteorological observatory at Fredericton, 19 March 1847, University Manuscripts fonds, UA RG 109, 1754- 1971, King's College Manuscripts 1841-1850: 2161-4, p. 1.
[116] Robb to Colebrooke, 19 March 1847, p. 2.
[117] Robb to Colebrooke, 19 March 1847, p. 2-3.

As early as the 1790s, cases were brought before the province's Supreme Court in Saint John concerning the ambiguity of New Brunswick's political boundaries. During the St. Croix Commission, testimony, like that presented by James Boyd who was an early settler inhabitant of the Passamaquoddy Bay, was used to support British claims to the disputed lands and rivers. Boyd had been interviewed by the Commissioners in 1798, and when asked by the court if a civil "jurisdiction exercised by the government" ever presided over the disputed St. Croix, Boyd could only answer that locals understood the ancient line between Nova Scotia and Massachusetts by the portage routes used by the Peskotomuhkati.[118] During his work to determine precise longitude of the rivers that flowed into Passamaquoddy Bay, Thomas Wright likewise relied on the knowledge of the region's Indigenous population who colloquially knew that small islet in the Schoodic River as Bone Island, leading to the excavation that found Champlain's lost settlement and confirmed that the Schoodic River was, in fact, the St. Croix River.[119] Of course, the Commission was only able to establish the border some 300 kilometers inland, to the source of the river, and the headlands remained in dispute for several decades. House of Assembly in New Brunswick, and Lt. Governor Colebrooke in particular, wanted to correct the problems caused by the American Revolution left unsolved by the Commission, however the settler state needed settler answers to legitimise its claim to the

[118] "Testimony of James Boyd re. the U.S.-N.B. Border, 10 August 1798," in The Winslow Papers, University of New Brunswick libraries, UNB Archives and Special Collections, Vol. 9, 80.
[119] Rachel Bryant, "Imaginary Lines: Transcending the St. Croix Legacy in the Northeast Borderlands," *Native American and Indigenous Studies* 1, no. 1 (Spring 2014): 49-64; National Park Service, *Saint Croix Island International Historic Site General Management Plan: Environment Impact Statement*, 1998, 14; W. F. Ganong, *Ste. Croix (Dorchet) Island*. Revised and enlarged, edited by S.B. Ganong, Monograph Series no. 3. (Saint John, N.B.; The New Brunswick Museum, 1902), 16-20.

region still in dispute. By using an observatory to refine the process of land surveying above the river's source, astronomical science offered a solution that supplanted the role of Indigenous knowledge about the St. Croix River, its tributaries, and settler dependence upon it, in order to locate the international boundary line with the United States. Solidifying the province's claim to valuable timber resources in the disputed territory proved a far more lucrative investment than an observatory at Saint John, and both Colebrooke and College Board looked to replicate Bond's success by building an observatory at Fredericton.

Through correspondence, William Brydone Jack kept up to date about advances being made in magnetic and astronomical science in New England and also in the Canadas. At King's College Toronto, an observatory was built on college land in 1840. Though not intended for astronomical work, the structure was part of a series of imperial observatories built under the direction of Maj. Edward Sabine, with similar temporary structures raised in St. Helena, Capetown, and Tasmania. Sabine was a well-regarded soldier, explorer, and astronomer who made several expeditions including an 1819 excursion to the arctic to locate the Northwest Passage and to investigate the correlation between magnetic and meteorological phenomena. Using a network of imperial observatories, Sabine sought to prove that the Earth's own magnetic field was constantly changing and responded to extra-terrestrial events such as solar flares.[120] At Toronto, observations were done continuously, and readings were done so by hand resulting in thousands of painstaking observations; sometimes done as frequently as every five

[120] J.W.L. Glaisher, "Sir Edward Sabine," *Monthly Notices of the royal Astronomical Society* 44, no. 4 (1884): 136-137; Edward Sabine, "On the Periodical Laws Discoverable in the Mean Effects of the Larger Magnetic Disturbances," *Philosophical Transactions of the Royal Society of London* 142 (1852): 103-124.

minutes which were later examined by Sabine in Britain.[121] In 1846, Jack and Colebrooke solicited copies of these observations for the library at King's College Fredericton and received by donation from Sabine "Two volumes of Meterological and Magnetic made at Toronto in Canada."[122] Jack maintained communication with Sabine for several years, and his support and reputation proved to be an important buttress when, in July 1846, Jack and Robb submitted a formal request to the College Council (formerly the Board) for the purchase of an achromatic telescope.[123] The professors request that a sum of £550, "devoted to the object in view which they recommend should be appropriated, namely £300 for the Mathematical Department to be applied in the purchase of a good 7 feet Achromatic Telescope and the remaining £250 for procuring materials, models, and apparatus for the illustration of chemistry and its application to the arts, and models for the illustration of Magnetism, Electricity, Galvanism, and Meteorology."[124] The Council approved the expenditure, and Jack began making the necessary inquires for procuring a telescope while Robb secured equipment for his chemistry laboratory.

Between March and August of 1847, Jack and Colebrooke made inquiries to Sabine about where to purchase a telescope for King's College Fredericton, and the Council increased its contribution to roughly £500. By October, "Mr. Jack's telescope was ordered from Munich," but was not expected to arrive for several months.[125] With Sabine's assistance, a 7.5-foot mahogany and brass achromatic telescope and equatorial mount was ordered and built by Merz and Son, a Munich-based manufacturer, at the cost

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[121] Richard Jarrell, *The Cold Light of Dawn*, 33.
[122] Council Minutes, 18 February 1846, p. 264.
[123] Council Minutes, 23 March 1847, p. 315 (the original request is referenced in the minutes and dated "July last.")
[124] Council Minutes, 23 March 1847, p. 316.
[125] James Robb to Buchanan R. Paterson, 29 October 1847.

of just over £500 that arrived in Fredericton in May 1849.[126] After Colebrook's tenure as vice-regent ended in April 1848, Jack, by way of the recommendation made by Sabine, was also able to convince the College Council to appropriate a further sum of money for the construction of a new building on campus to house the telescope after it arrived. The Council approved the additional expenditure of £336 pounds, and in March 1850 approved plans for the construction of an observatory to house the telescope and other astronomical and magnetic apparatus acquired for the purpose of teaching astronomy, galvanism, and electricity at King's College.[127] Completed in March 1851, at a cost of £170, the King's College observatory was completed[128]

Both Jack and Robb utilized the observatory, its telescope, and a host of other instruments in their teachings at King's College throughout their careers in New Brunswick. Using these astronomical tools, settler scientists and colonial officials in New Brunswick sought a kind of celestial validation to their ownership of the soil that disrupted and erased Wolastoqiyik and Peskotomuhkati knowledge of the landscape. Locating the ratio between magnetic north and true north made land surveying more precise and scientifically endorsed ownership of unceded Indigenous lands by settlers. This phenomenon, as Lorenzo Veracini's writes, demonstrates how "settlers do not discover: they carry their sovereignty and lifestyles with them. As they move towards what amounts to a representation of their world, as they transform the land into their

[126] J.E. Kennedy, "The Early Days of the First Astronomical Observatory in Canada," *Journal of the Royal Astronomical Society of Canada* 49, no. 5 (1955): 181-188.
[127] "Report of the Committee appointed to inquire into the subject of erecting a building for a telescope," College Minutes, 19 March 1850, p. 391.
[128] Colege Minutes, 19 March 1851, p. 408.

image."[129] Thinking of the Brydone Jack's observatory as an example of settler science, and a component to Veranici's definition on settler colonialism, reveals how peoples of European descent not only carried, but also invented their sovereignty over stolen lands. In New Brunswick, the application of astronomical instruments was concentrated on the development of land and sea resources, to facilitate economic growth outside the timber and lumber industries, and points to just some of the silent effects of settler science and innovation in colonial space.

### 4.3 Electrical Enthusiasms and Agrarian Enlightenment

The construction of an observatory at King's College Fredericton became a central part of science education at the collegiate level in the province and was well-utilized by both Jack and Robb who regularly used the building for course instruction. The purchase of an achromatic telescope was an important investment for the development of the College as a growing settler university, and Jack and Robb successfully weathered the turbulent education reforms of the 1840s by advocating for more vocational training within the school's curriculum. Outside of King's College, however, the construction of an observatory was only a single piece toward a wider dissemination of scientific knowledge in New Brunswick. The labours of Professors Jack and Robb to promote the practical sciences extended beyond the Fredericton college's campus and emphasised the utility of science toward a greater public good. This was especially true of the potential applications of chemistry to provincial agriculture, and

[129] Lorenzo Veracini, *Settler Colonialism: A Theoretical Overview* (New York: Palgrave-MacMillan, 2010), 98.

electro-magmatism as a tool for improving inter-colonial communication and commerce. New Brunswick was quickly finding space within greater global networks of science and technological development that was expanding the growth of both British and American colonial empires.

The advent of the electric telegraph, for example, and the start of long-distance telecommunications in 1844, gave rise to a new phase of empire that wove together electrical and terrestrial environments to bring forth real-time communications hitherto unseen in North America. In New Brunswick, and elsewhere, social, political, and scientific networks of all kinds grew at an exponential rate by the mid-nineteenth century as old and new "colonial empires," according to Jean-Guy Rens in his seminal work *The Invisible Empire*, "were built on telegraphy."[130] On 24 May 1844, Samuel F.B. Morse dispatched the first telegraphic message using an experimental line from Washington, transcribing the biblical verse "What hath God wrought," and sending it over 77 kilometers to Baltimore, Maryland.[131] Subsequent extensions lines were built connecting Philadelphia, Manhattan, Albany, and Buffalo. Different Telegraph companies were incorporated in Maryland, New York, and in the territory that eventually became the Dominion of Canada, the electric telegraph was first established at Toronto, and connected the city to the United States via a system of galvanized steel wire in December 1846.[132] Recognizing the significant financial and industrial possibilities of the electric telegraph, the Montreal-based Board of Trade made efforts to encourage provincial

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[130] Jean-Guy Rens, *The Invisible Empire: A History of the Telecommunications Industry in Canada, 1846-1956* (Montreal & Kingston: McGill-Queen's University Press, 2001), xv.
[131] George F. Botjer, *Samuel F.B. Morse and the Dawn of the Age of Electricity* (Lanham: Lexington Books, 2015), 22.
[132] Jean-Guy Rens, *Invisible Empire*, 10.

governments throughout British North America to invest in the creation of a telegraph line that connected the settler colonies by electrical wires. Writing to Lieutenant Governor Colebrooke in November 1846, the Montreal Board of Trade urged for "the co-operation of the respective Governments of the British North American Provinces, for the establishment of an Electric Telegraph from Halifax to Toronto." The earliest British or European intelligence came through Halifax by way of steamship, and by "the suggested line of Telegraph this advantage might further be further confined to British interests, rendering the United States dependent on the said line for the intelligence and thereby obtaining their contribution towards the expenses of the establishment."[133] The cost of establishing Morse's telegraph line was estimated to be £25 per mile for a single line of wire. Provincial assemblies were encouraged to allow local capitalists to support the expenditure, via the creation of new chartered companies to build and manage portions of the line in different provinces.

In New Brunswick, the proposed intercolonial telegraph line would run between Saint John and Fredericton before following the grand communication link to the Canadas via the St. John River. In early January 1847, Colebrooke requested that Robb and Dr. J.B. Toldervy, a local physician and Indian Supervisor of York County, produce a report on the proposed line between Fredericton and Saint John. Submitted on 25 January, Robb and Toldervy's report underscored the value of the technological innovations of electrical magnetism, and suggested that "two wires," supported by twenty-foot-high posts and spaced approximately 200 feet apart, support a "line of sixty five miles, which, we believe, is the length of the rough to Saint John, by the valley of the Nerepis River." A

[133] *Journal of the House of Assembly of ... New Brunswick from ... January to ... April, 1847 ...*: 1847 (Fredericton: J. Simpson, 1847), 31.

shorter line may have been possible, but Robb and Toldervy were also cognisant that building a line "in such a rough country, and in such a tempestuous climate, it would be liable to accidents which would be always difficult to detect, and almost impossible speedily to repair." The two also proposed that if the telegraph in New Brunswick was adopted by the government, and under control of provincial the Post Office, then revenues from the line would go toward the salary of a Chief Superintendent and excess be returned to the provincial coffers. The cost of establishing such a line, however, proved far too great an expense for the Assembly to charge against its ordinary expenses. Robb and Toldervy priced the total for the construction of line £2145, with an annual maintenance cost of roughly £1800. Combined with the annual costs of salaries and offices, the proposed line set the provincial treasury back over £5000 in its first year.[134]

The construction of an electro-magnetic telegraph line remained an object desired by the both the Lieutenant Governor and the Executive Council, but legislators were not convinced. In April 1847, the Assembly passed "An Act to incorporation the British North America Electro-Magnetic Telegraph Association," and allowed for the public to invest in the creation of a telegraph line through New Brunswick, but initial capital from the Assembly was denied by an opposition that opposed the expense to the public for the sake of private investment.[135] The company folded before the end of 1847, and it was another two years before a dispatch transmitted through the Maritimes by way of

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[134] James Robb and J.B. Toldervy, "Report and Estimate concerning an Electro-Magnetic Telegraph between Fredericton and Saint John," in *Journal of the House of Assembly of ... New Brunswick from ... January to ... April, 1847 ...*: 1847 (Fredericton: J. Simpson, 1847), clxiii.

[135] 10 Victoria Chapter 74, *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1847* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1847).

telegraph reached either Montreal or New York via a line built between Saint John and Calais, Maine. Despite inconsistent enthusiasms for electric telecommunications from the House of Assembly, Robb remained optimistic about the promise of science in New Brunswickers, and technological innovation as a means of improving upon colonial life. To that end, Robb's relationship with Lt. Governor Colebrooke aided in the establishment of the Fredericton Athenaeum in April 1847. Colebrooke became patron of the voluntary society, and Robb its secretary, with the goal of promoting "Literature and Science, more particularly as applicable to the circumstances and conditions of this Provinces, and the North American Colonies in general."[136] The ordinary business of the voluntary society consisted of the reading of original papers during monthly meetings held at King's College on a range of topics from pottery to colonial union, and the tides of the Bay of Fundy. The Fredericton Athenaeum also published the first New Brunswick Almanac under the supervision of Drs. Robb, Toldervy and Professor Jack.

The annual publication of almanacs in England began in the second half of the sixteenth century, and by the seventeenth century were some of the most widely published and read periodicals. Almanacs conveyed a variety of types of knowledge, and historically have included weather forecasts, farmers' planting dates, tide tables, and other events regulated by natural phenomena from solstices to the lunar phases. In British America, almanacs continued to be produced with regularity, and were popular both because of the assumed useful knowledge they contained, but also because they were cheap publications and more easily accessible to a wider audience. In short, the almanac was a guide to understanding the natural world and as a result their publication was

[136] "The Fredericton Athenæum, instituted April 23, 1847," New Brunswick Museum Monographs Collection, FC 02 0203 no. 47823.

acutely receptive to later eighteenth and nineteenth-century developments in astronomy, meteorology, and other sciences that expanded knowledge about the different functions of the natural world and how to exploit that knowledge in settler colonial spaces.[137] New Brunswick was no exception, as almanacs were published in New Brunswick prior to the formation of the Fredericton Athenaeum, but the society's inaugural volume introduced itself "with a view to improve the character of the Almanac of this Province." Indeed, Robb, Jack, and Toldervy were acutely aware that any attempt on their part to "predict the state of the weather for the ensuing year," would be tantamount to impossible "without running the risk of being laughed at by every person of ordinary intelligence."[138]

In New Brunswick, where "food for the mind is but scantly supplied," the Fredericton Athenaeum designed its almanac with care and aimed to impart only the most modern and useful of knowledges to "the poor settler, who has 'no other library than his Bible and his Almanac,' [and] should find the latter something more nourishing than the chaff of Astrology, Alchemy and Divination." [139] Robb, Jack, and Toldervy sought to produce a cheap compendium of information, useful for the time and place, and published information in tabular form to condense a dearth of information about planetary cycles, tides, provincial history, and more into only 150 pages. Admittedly, the first edition of the New Brunswick Almanac fell short in terms of the agricultural knowledge it offered to the supposed poor farmer reader. But the object of the authors was still centred on

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[137] Katherine Anderson, "Almancacs and the Profits of Natural Knowledge," in Louise Henson, G.N. Cantor, Gowan Dawson, Richard Noakes, Sally Shuttleworth, & Jonathan R. Tophan, eds., C*ulture and Science in the Nineteenth-Century Media* (Aldershot, Ashgate Publishing, 2004), 98.
[138] Fredericton Athenaeum, *The New-Brunswick almanac and register for the year of Our Lord 1849* (Saint John, N.B.: H. Chubb, 1848), preface.
[139] Fredericton Athenaeum, *The New-Brunswick almanac 1849*, preface.

providing an essential public good, and they envisioned later editions that would remedy such an absence in future. Astronomical observations, vital statistics, and rosters of elected, ecclesiastic, and judicial officials complimented brief histories of different parts of British North American and the United States. What agricultural knowledge was disseminated reflected on the challenges of maintaining the province's food economy in spite of the predominance of the timber economy and encouraged farmers to consider root vegetable crops over grain. "We do not look forward to any great improvement in farming, until a larger surplus of green food is obtained," wrote Robb in an assessment on the state of agriculture, for "without roots, cattle cannot be fed profitable; without cattle, no manure; without manure, no grain."[140] Robb was also cognizant of the distinct local environment of New Brunswick that afforded greater potential for different crops, notably the province's river valleys being more suitable places for grain crops while along the coast, he urged framers to turn "their attention more to dairies [because] the fogs of the Bay of Fundy cause grain crops to be backward and uncertain."[141]

Food for the mind, but also for the body and the provincial economy, was central of Robb's contribution to the first edition of the *New Brunswick Almanac*. As was a proposal from the Saint John Agricultural Society, published in the appendix of the *Almanac*, calling for the creation of a Provincial Board of Agricultural, "by means of which the agriculture of the Province might be raised from its present disgraceful and ruinous position."[142] Agricultural societies existed in New Brunswick since 1790, beginning in Saint John, and other county-based societies were established to encourage

[140] Fredericton Athenaeum, *The New-Brunswick almanac 1849*, 136.
[141] Fredericton Athenaeum, *The New-Brunswick almanac 1849*, 137.
[142] Fredericton Athenaeum, *The New-Brunswick almanac 1849*, 140.

greater agricultural expansion and to end the province's need to import food, particularly after the 1815. Reminiscent of Peter Fisher's earlier predications, the report decried that:

> The time seems now to have arrived, however, when a continuance of apathy and neglect, on the part of the government and the people, in relation to agriculture as a subject of the most vital importance to the Province, will certainly and speedily bring about universal bankruptcy, and the depopulation of the country. As we do not content ourselves with the cuckoo cry of 'something should be done,' we proceed to state what we conceive can and to be done.[143]

The creation of a centralized Board of Agriculture, one that could bring forward and carry out measures of improvement, with sufficient public funds, was viewed as a means to correct the wasteful mismanagement of New Brunswick's so-called "virgin soil." The Board of the Saint John Agriculture Society, and likewise James Robb, did not believe that the state of New Brunswick's agriculture was not the result of a want of industry amongst the populace. Rather, it was "the want of knowledge, which renders farming unsuccessful in this Colony."[144] In turn, the worn-out fields were as good as "*burnt land,*" but the Board of the Saint John Agricultural Society also noted that in other countries, particularly Britain and the United States, state-sanctioned boards of agriculture "employ lectures on agriculture who visit every part of the county." Such Boards, by means of furnishing ample information about modern management of land, through the establishment of schools of agriculture and wider dissemination of useful knowledge, had the protentional to stave off even the "peculiarities" of New Brunswick's position caused by the "protection heretofore enjoyed by our timber in the British market, and the exclusive encouragement given to that branch of trade by our own Legislature." Indeed,

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[143] "Annual Report of the Saint John Agricultural Society, 1848," in Fredericton Athenaeum, *The New-Brunswick almanac 1849*, 140.
[144] "Annual Report of the Saint John Agricultural Society, 1848," in Fredericton Athenaeum, The New-Brunswick almanac 1849, 140.

the greatest deterrent to New Brunswick's agricultural potential was, according to the report of the Saint John Agricultural Society, "timber-getting, and the branches of business intimately connected with, and depending upon it."[145]

The publication of the New Brunswick Almanac, and its inclusion of the report of the Saint John Agricultural Society's report, did not go unnoticed by provincial legislators. By act of the House of Assembly, the province moved to incorporate various county agricultural societies to improve agriculture by means of injecting public funds and through the dissemination "for the purpose of promoting and encouraging Agriculture, and rural and domestic economy, and industry, within the said County."[146] Societies were formed in Charlotte, King's, Carleton, and Sunbury counties and in April 1849 the House passed "An Act for the encouragement of Agriculture" that centralized the regulation of all county societies hitherto or thereafter established by the Assembly. While individual county societies were primarily meant to function using monies from membership subscription, the province also committed £25 allowance per annum per society. The centralizing act also enabled societies to create agricultural schools, and should any society be able to operate those schools for one year, "and that the average attendance at such has not been less than twenty, that proper instruction has been given in Agricultural Chemistry, and in the different branches of Husbandry, and practically applied in the cultivation and management of a portion of land."[147] The house made

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[145] "Annual Report of the Saint John Agricultural Society, 1848," in Fredericton Athenaeum, *The New-Brunswick almanac 1849*, 140-141.
[146] 10 Victoria – Chapter 23, *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1847* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1847).
[147] 12 Victoria – Chapter 35, *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1849* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1849).

regular money appropriations to the societies to reimburse them for the purchase of different agricultural implements, such as plows, but at the end of 1849 session, by a vote of 17-11, the house agreed to commit up to £1000 to commission James Finlay Weird Johnston, an agriculture chemist, "for the purpose of examining the several Counties therein, and reporting on the Soil, and its capabilities for Agricultural purposes."[148]

J.F.W. Johnston was another Scottish-born and educated professor of natural history, who specialised in agricultural chemistry, and was made chemist to the Agricultural Society of Scotland. Widely published and read on both sides of the Atlantic, Johnston's *Catechism of agricultural chemistry and geology*, first published in 1844, went through 33 English editions in his lifetime, and was translated into numerous languages. As Graeme Wynn notes, changes to Britain's preferential tariffs on timber sent New Brunswick's economy into spiral by 1850–a reality Peter Fisher foresaw twenty-five years prior.[149] Seeking to revitalize and reinvent the New Brunswick economy, increased immigration through a programme of provincial agricultural redevelopment was seen a cure for the failure of the timber trade after decades of decimating New Brunswick forests. Johnston arrived at Saint John in the late spring of 1849 and requested James Robb assist him on his tour to survey New Brunswick's soils and agricultural potential. Johnston recognized that Robb had amassed significant knowledge about the natural components of region because "the Geology of the Province had long been a subject of interest [to Robb]," and demonstratively so thanks to his collection of specimens housed

[148] *Journal of the House of Assembly of ... New Brunswick from ... January to ... April, 1849* (Fredericton: J. Simpson, 1849), 316.
[149] Graeme Wynn, "Johnston, James Finlay Weir," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.

in the College museum.[150] Johnston was adamant that the agriculture capabilities of the country depended on its geological structure, a sentiment shared by Robb who, through the publication of the *New Brunswick Almanac*, was already engaged in promoting the development of crops in response to New Brunswick's local environment. Johnston, with Robb, spent 53 days between August and November exploring the province's many rivers and coasts, and ventured into parts of the interior. In total, the group traversed roughly 2,000 miles, including by way of canoe and with different guides, met with many of the county agricultural societies, talked with farmers, and took stock of the produce of the different communities across the province.

At the opening of the House of Assembly, on 7 February 1850, Johnston's report was presented to members of the legislature with the view to "promote an Immigration of a satisfactory character and will stimulate the industry of those who have perhaps hitherto undervalued the resources of their native Country."[151] Johnston's report supplied several suggestions for improving the programme of agricultural development in the province, including expansion of agricultural instruction at King's College with the appointment of an agricultural chemist, but for Robb the most significant outcome was the establishment of a provincial agricultural society. This was the New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce throughout the Province, instituted in August 1849, but incorporated in April 1850 to unite the efforts of the local agricultural societies across the province. Robb played a "leading part in forming the Society" and became its "first president in 1850, and then for some years, its

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[150] J.F.W. Johnston, *Report on the agricultural capabilities of the province of New Brunswick* (Fredericton: J. Simpson, 1850), 5.
[151] *Journal of the House of Assembly of ... New Brunswick from ... February to ... April, 1850* (Fredericton: J. Simpson, 1850), 5-6.

corresponding secretary."[152] Created by act of the Assembly in the same session that Johnston's report was submitted, The New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce throughout the Province (hereafter NBSEA) became a major advocate for both agricultural and industrial development throughout New Brunswick.[153]

Writing in the preface of the NBSEA's first published journal, a compilation of the society's quarterly meetings and publications, Robb was blunt about "the utter prostration of the Staple Trade of this Province–the general impression that the crop heretofore most relied upon–the crop of Timber–had become worthless."[154] Without preferential tariffs, New Brunswick's situation necessitated the transition from the business of lumbering to that of farming and manufacturing, but as Robb and others had feared, the effects of the timber trade turned much of the province into burnt land, and "that making up exhausted land was very different thing from wearing out a fresh and teeming soil." Robb viewed the situation as dire, but held out that the promise of science could yet still reverse the tide of New Brunswick's economic demise. "Let us lay before them [New Brunswickers] the best information," proposed Robb, "if the climate be

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[152] A.G. Bailey, "Introduction," xxvi in Bailey, eds., *The Letters of James and Ellen Robb* (Fredericton, Acadiensis Press, 1983).
[153] 13 Victoria – Chapter 62, *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1850* [Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1850].
[154] James Robb, "Preface," in *Journal of the New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce Throughout the Province* (Fredericton: James Hogg, Reporter Office, 1850), 3.

severe, let us bring under notice all the aids which science furnishes, to overcome and ameliorate the ruggedness of nature."[155]

In the first year of the NBSEA's operation, largely based out of Fredericton, the society published reports on best modes of fattening cattle and hogs for marketable beef and pork, how the colonial government should obtain large quantities of seeds for planting and produced provincial rates of imported and exported farmed products such as wheat, potatoes, and meat. The NBSEA also formed several special committees that inquired as to the best modes of encouraging provincial manufactures, the mechanical arts, and agricultural science for the benefit of New Brunswick's farmers and the provincial food economy. The NBSEA was deeply concerned with navigating New Brunswicker out of a storm of economic downturn caused by the declining timber trade, and likewise wanted to turn the waste of the trade into future prosperity for white settlers. "The great majority of our population," wrote Robb in his penultimate report of 1850, "are and ever must be dependent upon *the land* for their subsistence."[156] Although many farmers held a proverbial dislike for book farming, at least according to the report, the NBSEA actively encouraged the dissemination of knowledge through visual or experiential rather than written means. Robb proposed that agricultural schools be established where possible, and that agriculture formed at least part of curriculum at every school that received funds from the public, including King's College. "When the lumber trade fails," echoing Peter Fisher's decades-old theory, "as in time, it will inevitably fail –

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[155] James Robb, "Preface," in *Journal of the New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce Throughout the Province* (Fredericton: James Hogg, Reporter Office, 1850), 4.
[156] 8 January 1850 Report, in the *Journal of the New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce Throughout the Province*, 102. Emphasis in original.

we must then settle down steadily to agriculture." The NBSEA, Robb, and other concerned and likeminded individuals warned that "in our [the province's] devotion to lumbering hitherto, we have neglected farming, and it is high time that another generation should be rescued from that ignorance of Agriculture as an art and a science – which forced our farming population into the woods and too often keeps them there slaves to an unprofitable employment."[157]

Science, and in particular agricultural chemistry and the mechanic arts, were supported by the provincial society as a means to a prosperous reinvention of New Brunswick. One that could turn the finite nature of the tree stand into long-term provincial success and forestall economic decline. Robb, as president of the NBSEA, wanted to emulate the success of agricultural and industrial developments in Britain, specifically the use of state shows, fairs, and exhibitions to promote the produce of the nation at home. "The bringing of men together for the purpose of purely Agriculture," wrote Robb, and "the prominence which the object thereby assumes in the eyes of the public, the wholesome stimulus of encouragement and competition" that, year by year, would increase production.[158] Exhibitions were a well-established part of the social landscape throughout the British Empire, but by 1850 had significantly increased in scale. At all times, however, the exhibition was "designed to provoke action."[159] In the pursuit of increased production, growing markets, and expanding capital while also attracting

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[157] 8 January 1850 Report, in the *Journal of the New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce Throughout the Province*, 102-103.
[158] 8 January 1850 Report, in the *Journal of the New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce Throughout the Province*, 106.
[159] Elsbeth Heaman, *The Inglorious Arts of Peace: Exhibitions in Canadian Society During the Nineteenth Century* (Toronto: University of Toronto Press, 1999), 3.

new immigrants, the exhibition was, as Elsbeth Heaman eloquently describes in her book *The Inglorious Arts of Peace*, "an enlightenment project to improve humanity."[160] But the exhibition was also an extractivist project that, in settler colonial space, encouraged the exploitation of natural resources in favour of white settler commercial well-being and the destruction of Indigenous economies.

The NBSEA easily convinced New Brunswick's House of Assembly of the merits of a great provincial exhibition, and the success of the London's own Great Exhibition of 1851 further reinforced the utility of such a grand stage to both agricultural and industrial developments in the province. In the spring of 1852, the provincial government allocated £500 to the NBSEA for "establishing a general exhibition of Industry of the whole province under the form of a General Show and Fair the present year."[161] A structure was erected on the riverfront next to the provincial hall (where the present-day Beaverbrook Art Gallery sits) and the event ran in September later that year. Frustrated by how New Brunswick was represented at London's Great Exhibition, members of the NBSEA worked tirelessly to develop their provincial exhibition, entirely under the auspice of the society. The programme for the 1852 provincial exhibition included all kinds of different types of competitions for produce ranging from raw minerals, machinery, farming tools, to garden produce, cattle, and livestock. The first provincial exhibitions also featured many domestic manufactures such as woollen, linen, or woven products, as well as leather goods, soaps, candles, and breads; and artisanal handiworks ranging from clocks

[160] Elsbeth Heaman, *The Inglorious Arts of Peace*, 10.
[161] 15 Victoria, Chapter 39, "An Act to appropriate a part of the Public Revenue for the services therein mentioned," Passed 7 April 1852. *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1852* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1852).

to "philosophical instruments." There were canoe races on the river, ploughing matches along the fields that lined the banks, and all manner of sport and games took place throughout Fredericton such that "there was a determination evinced by all to make the exhibition week one great Provincial holiday."[162] "At the World's Exhibition," Robb reflected, "we disparaged our own resources." "New Brunswick was represented by a lump of asphaltum [sic], the figure of an Indian, and a bark canoe."[163] At Fredericton, however, settler extractivism was on full display as the "richness of the earth, and the various products of the skill and industry of the people," were brought together from far distant parts of the country and exhibited before the eyes of the public.[164]

From the stage of provincial exhibition at Fredericton, New Brunswick was more than just the sum of its timber. As Saint John's *Christian Visitor* reported the following month, "the Provincial Exhibition proves most satisfactorily the people of the Province should fully know and clearly understand, that the Agricultural interest, as the trade in Lumber begins to decline, must daily attain greater importance and become the chief interest of the Province."[165] The provincial exhibition of 1852 surpassed expectations and demonstrated that New Brunswick's soils were just as capable of repaying the labour and care of those who worked them. Moreover, the event asserted the potential for greater industry hitherto unseen in the province, as the handiworks of artisans and mechanics occupied considerable space in the exhibition. The inclusion of different kinds of mineral

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[162] James Robb, "Report of the Provincial Exhibition of 1852," in the *Journal of the New Brunswick Society for the Encouragement of Agriculture, Home Manufactures and Commerce Throughout the Province* (Fredericton: James Hogg, Reporter Office, 1853), 358 & 360-361.
[163] James Robb, "Report of the Provincial Exhibition of 1852," 377.
[164] James Robb, "Report of the Provincial Exhibition of 1852," 387.
[165] "The Provincial Exhibition," *Christian Visitor* 15 October 1852 (Saint John, NB).

specimens also aimed at attracting capital investment to increase the mining of different ores throughout parts of New Brunswick foreshadowed later investment into New Brunswick geological potential. Many of these mineral samples sent to Fredericton for the exhibition were later given to the College museum and remained there for future display and use by Robb in his teaching of New Brunswick's geology.[166] The 1852 exhibition closed on a Saturday evening with a brilliant display of fireworks launched over the Saint John River and a celebration of all the possibilities for New Brunswick's future.

James Robb's work with the New Brunswick Society for the Encouragement of Agriculture and Home Manufactures coincided with many different types of technological and scientific developments in the province that ultimately reinforced his understanding of the application of science in the British settler colony. The advent of the telegraph in New Brunswick pulled the world together in new and exciting ways, as Robb and others envisioned the sharing of knowledge that defied even the greatest of distances. Meeting in telegraph offices, members of the NBSEA and similar agriculture societies from Halifax to New Orleans now had the ability communicate like never before and could "pledge each other in whiskey and electricity – hear each other's toasts and sentiments over 3000 miles of space."[167]

By 1856, Robb's belief in the significance of the progress of agriculture in New Brunswick was galvanised and took on a decidedly more racial tone. In his final report written for the NBSEA, he argued that agriculture was an index "of the progress of

[166] William Henry Buckerfield to James Robb, 27 August 1852, in MS1 Correspondence, 1850-1895, MC361: New Brunswick Agricultural Societies Fonds, item no. 3, PANB.
[167] James Robb to Elizabeth Robb, 24 November 1850.

civilization" that demonstrated the intellectual faculties of man. Such faculties, according to Robb, were given by nature but only awakened in response to external conditions such as the climate and the soil. "In the original condition of things, man subsists by the chase of wild animals or fishing. It is the age of hunters and Fishermen."[168] Hunting would give way to pastoralism, which would then give way to agricultural settlements and the centrality of landed property necessary for the emergence of a modern capitalist society. Robb's report evoked the four stages theory, a paradigm that emerged from eighteenth-century thinkers of the Scottish Enlightenment such as Adam Smith and John Millar. Yet, Robb's racist assumptions about the linear trajectory of human life and society directly contradicted his own experiences in New Brunswick.

Robb viewed scientific knowledge development in New Brunswick only as mechanism "to clear the way for the introduction of something better." Knowledge, or rather, "wisdom is better than gold, and knowledge is both light and power," wrote Robb. The indoctrination of New Brunswick's rural communities with a knowledge of the principles, practices, and results of the applications of modern science to husbandry and agriculture "ought to bring about the desired result here as elsewhere; that is, as soon as labour can apply this knowledge, and freely bring its products to market."[169] Robb believed that both settler and Indigenous communities had the capacity to implement such a system, and in his report quotes at length an unnamed (likely fictional) "Indian Chief," who addressed his tribe with a view of persuading them to abandon "their primitive and precarious mode of subsistence:"

> See ye not that the Pale-faces feed upon grains,
> While our hunters must live upon flesh;

[168] James Robb, *Agricultural Progress* (Fredericton, N.B., J. Simpson, 1856), 3-4.
[169] James Robb, *Agricultural Progress*, 16

That the flesh will take thirty long months
To grow up and be fit for our use,
And that it is frequently scarce?
That each of those wonderful grains,
Which they strew in the bountiful earth,
Yields straightway a thousand for one?
That the grains will remain and grow up
On the spot where the pale-faces leave them?
That the flesh which we live on each day
Has four legs to flee from our grasp,
While we have but two to run after?
That Winter, which is unto us
The season of toil and of hunting,
Is to our new neighbours the time
In which they enjoy their repose?
No wonder, I trow [sic] then, that they
Have so many children – and live
So very much longer than we do!
I therefore declare unto all
Who sit in the Council around,
That ere these dark cedars decay,
And these maples refuse us their sap,
The race of the eaters of corn
Will replace all the eaters of flesh,
Unless ye – O men of my tribe!
Wild warriors and hunters – resolve
To exchange the pursuits of the chase
For the work of the wise husbandman.[170]

Whether a Wabanaki Chief ever gave such a speech to his council was irrelevant to Robb. What is relevant to this thesis is Robb's belief that such sentiment could exist amongst the people he relied upon in 1838 during his first expedition through New Brunswick. Despite being viewed by settlers, such as Robb, as backward, the Wolastoqiyik, Mi'kmaq, and Peskotomuhkati were an integral part to the system of settler knowledge production espoused by James Robb, a fact simultaneously concealed below the surface of settler extractivist mentalities and yet altogether conspicuous. The Wolastoqiyik, Mi'kmaq, and Peskotomuhkati provided necessary services, contributed to a wider

[170] James Robb, *Agricultural Progress*, 4-5.

commercial economy, and assisted in the development of scientific research in New Brunswick.

This was the promise of science in New Brunswick in the nineteenth century: when one resource neared its depletion, settler scientists such as Robb proposed alternative solutions to invent new bountiful earths in order to further extractivist settler-colonial economies and the commercialization of stolen Indigenous lands and waters. The constant cycle of seeking new resources to develop, new methods to deploy so to capitalize from nature, and new ways to reinvent New Brunswick was an altogether different kind of chase unique to the white settlers who occupied Indigenous land. From this chase, white settlers subsisted, and in the process endeavoured to destroy ways of knowing and living that existed outside the European paradigm of market capital which contradicted notions of the land as simply a commodity in waiting. The irony that the chemist needed to canoeist to succeed in his efforts to save white settlers is poignant, but it also should not be taken as sign that the Wolastoqiyik, Mi'kmaq, and Peskotomuhkati supported broader settler colonial development in the parts of their territory that became New Brunswick after 1784. Rather, it is a reminder of how the Treaties of Peace and Friendship, first signed between Wabanaki Peoples and the British crown in 1725, were embodied and enacted upon when an ill-prepared Scottish scientist thought he could hike from Fredericton to the Chaleur Bay.

# **Chapter Five**:

## Arms of the State: The Geological Survey and Transformation of King's College

Knowledge production is seldom an altruistic endeavour, and this is especially true in the context of knowledge produced both in and by Britain's settler colonies.[1] In New Brunswick, the political and economic motivations for scientific research reveal a great deal about the importance of science as a tool in the development of the settler state. By mid-century, scientific knowledge produced about the natural and physical attributes of New Brunswick reflected the growing desire of settlers to inventory the extractable resources available that, in turn, fed Britain's global commercial empire. The promise of science in New Brunswick was a promise of economic growth, social order, and expansion through a programme of unrelenting resource extraction in unceded Wolastoqiyik, Mi'kmaq, and Peskotomuhkati territories. This promise was laden with contradictions and tensions between the imagined infinite and material finite bounties of the earth, shaping the growing body of knowledge about the natural and physical world while also producing "an accepted method for accumulating it."[2] Public perceptions of science as the mechanism that cast off a more ancient, quiet world, also viewed science and science education as having the potential to produce new wealth and techniques that

[1] The notion that scientific knowledge is produced for its own sake is rooted in the historical myth of its immutable objectivity. Science as an authority or legitimizer of the colonial state is not dependent upon the disinterestedness of the scientists, researcher, or entity undertaking or funding the labour. See Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, NJ: Princeton University Press, 1985).

[2] Suzanne Zeller, "Land of Promise, Promise Land: The Culture of Victorian Science in Canada," *Canadian Historical Association Booklet Series* 56 (1996), 1.

could revolutionize society. Science held the potential to replace the rhythm of the swinging axe or the churn of a plow and give way to a new kind of pulse. Its tempo, no longer dependent upon the labour of men, and accelerated by the vibrations and whirr of machines hitherto unseen, launching the world into an age of steel and sweat.

Following James Robb's first expedition throughout the province, the Victorian age of science in New Brunswick brought about increased investment into a systematic collection of data about the natural resources. The uses of telescopes, electric telegraphs, and the publication of almanac acerated this process of collection and the dissemination of knowledge about natural world. The colonial state also found ways to directly invest in the production of scientific knowledge about New Brunswick, including the formation of a provincial geological survey. The development of the colony's natural resources, and the utility and promotion of science and science education to that cause by the mid-century, drew power "from a dual set of urgent needs: the economy needed new sources of raw materials; and colonists needed the means to master their environment."[3] Such values, which fortified Victorian science, continued to have a decided impact on both the pursuit of knowledge at the collegiate level and function of science in New Brunswick before 1860.

Of all such sciences that emerged from the study of the natural world, geology presented the most obvious utilitarian possibilities for Britain's colonies in North America. The unearthing of new resources held the potential to create great wealth, foster new industry, and drive either patterns of extraction or settlement throughout the unceded Indigenous territories in North America that remained in British hands after 1783. The

[3] Suzanne Zeller, "Land of Promise, Promise Land," 3-4.

untapped mineral potential of the different parts of the continent had captivated British geographers and speculators alike for centuries. Rumors of valuable ore hidden beneath the forests encouraged surveys, including Thomas Wright's survey of Anticosti as discussed in Chapter Two. Although Wright's labours were primarily focused on correctly positioning the island in the Gulf of St. Lawrence, he likewise responded to earlier French reports about deposits of silver hidden somewhere on Anticosti.[4] Investment in collecting this information, its dissemination by the colonial government, reinforced the authority of the settler state and had encouraged the foundation of a provincial collegiate school, as well as efforts to build an astronomical observatory and provincial society for the promotion of agriculture.

The scientific and economic advantages derived from eighteenth-century Imperial state-sponsored projects such as the General Survey or expeditions undertaken to observe the Transit of Venus were essential to the propagation of Britain's global empire.[5] The stimulus for these eighteenth-century projects was largely born from competition with the French, and the imperial state emphasised not only the scientific advantages of such projects but also the "great public utility, as affording the surest foundation for almost every kind of internal improvement in time of peace and the best means of forming judicious plans of defence, against the invasion of an enemy in time of war."[6] These projects relied heavily on collaboration between the Royal Society of London and the

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[4] Thomas Wright and Nevil Maskelyne, "Immersions and Emersions of Jupiter's First Satellite, Observed at Jupiter's Inlet, on the Island of Anticosti," *Philosophical Transactions* 64 (1774).
[5] John Gascoigne, *Science in the Service of Empire: Joseph Banks, the British State and the Uses of Science in the Age of Revolution* (Cambridge: Cambridge University Press, 2011), 25.
[6] William Roy, "An Account of the Measurement of a Base on Hounslow-Heath," *Philosophical Transactions* 24 (1785): 385.

British Government, specifically the Army and the Department of the Master-General of the Ordnance. The former provided philosophically trained mathematicians while the latter provided the necessary practitioners–engineers skilled in the field and more familiar with the demands of work in the field.[7] The success of this relationship led to the creation of a more permanent Ordnance branch of government dedicated to the study of the geography and mapping which, in turn, gave rise to the first Geological Survey in Britain in 1832.

The significance of the Geological Survey to the development of the imperial state cannot be understated. In Britain, such surveys informed the home government about the location and amounts of important minerals such as stone for building, coals for burning, and iron for mining.[8] In 1835, Parliament allocated funding to establish a geological museum, and by 1839 a separate records office was created that supported the annual publication of mineral production and international trade statistics, which began in 1847.[9] The British Empire continued its programme of geological surveys, directly linked with mapping the geographical features of a region, in the hopes of locating new mineral

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[7] John Gascoigne, *Science in the Service of Empire*, 25.

[8] Deepak Kumar, "Economic Compulsions and the Geological Survey of India." *Indian Journal of History of Science* 17, no. 2 (1982): 289-300; James A. Secord, "King of Siluria: Roderick Murchison and the Imperial Theme in Nineteenth-Century British Geology." *Victorian Studies* 25, no. 4 (Summer 1982): 413-442; Evan Schofer, "The Global Institutionalization of Geological Science, 1800 to 1990." *American Sociological Review* 68, no. 5 (October 2003): 730-759; John Gascoigne, "Science and the British Empire from its beginnings to 1850," in 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), 54. In the American context, geology was likewise an important part of that empire-building project. See Mark Hendrickson, "Advance Agent of Expanding Empire: George F. Becker and Mineral Exploration in South Africa and the Philippines," *History and Technology* 35, no. 3 (2019): 237-265.

[9] British Geological Survey, "Our History, 1835-1850," https://www.bgs.ac.uk/about-bgs/our-work/our-history/#1835 [accessed September 5, 2023].

resources to extract and fuel the empire's economy. Discoveries made by surveys done in the different parts of Britain and its empire were popular topics and featured prominently during the Great Exhibition of 1851. The public increasingly placed faith in the significance of the Geological Survey for promoting the wealth of the nation and as a harbinger of modernity. In the territories that formed Canada, geology, as Suzanne Zeller notes, was an important inventory science, that took stock of both the wealth and potential wealth of the nation. As Elsbeth Heaman adds, "Exhibitions were inventory science applied to artifacts, and geology provided a guarantee that the activity was intellectually responsible," an advantage likewise expressed by James Robb as justification for the New Brunswick Society for the Encouragement of Agriculture to host its own provincial exhibitions.[10] In British North America, the science and practicality of a geological survey was not lost on colonial officials who wanted to expand commerce and industry within their own corner of the empire.

The process of collecting and documenting geological specimens by Europeans in North America, and the dissemination of the knowledge to public for practical application, was certainly not a new one in the nineteenth century. However, investment made by settler governments in mineral prospecting was. Prior to 1838, the closest thing to a settler state-sanctioned project meant to investigate the interior of the continent came under the auspice of the Hudson's Bay Company (HBC) in collaboration with the London Royal Society. In the mid-eighteenth century, the HBC played a pivotal role in establishing an observatory at Fort Churchill in time for the Transit of Venus in 1769 "and marked the beginning of the company's sponsorship and encouragement of a wide

[10] Elsbeth Heaman, *Inglorious Arts of Peace: Exhibitions in Canadian Society during the Nineteenth Century* (Toronto: University of Toronto Press, 1999), 156.

range of sciences."[11] After 1800, the HBC continued to support the efforts of the British Navy to find the fabled Northwest Passage, including one expedition led by John Ross in 1818, which was "likewise [a] means of improving the geography and hydrography of the Artic Regions of which so little is hitherto known, and contribute to the advancement of science and natural knowledge."[12] On the recommendation of the Royal Society, Edward Sabine, who 25 years later would support William Brydone Jack in his efforts to build an observatory at King's College Fredericton, accompanied Ross on his expedition north.[13] After 1838, New Brunswick became the first British American colony to undertake its own geological survey when it appointed Abraham Gesner to the newly created post of Provincial Geologist.

New Brunswick's venture into geological science was buttressed by the growth of institutions such as the Saint John Mechanics' Institute and, thanks to the efforts of Robb and Jack, King's College Fredericton. Like the Scottish-born professors in Fredericton, Abraham Gesner built his reputation through his medical training in Britain, friendships with other preeminent geologists such as Charles Lyell, and the publication of his own geological study, *Remarks on the Geology and Mineralogy of Nova Scotia*, in 1836.[14] Gesner's relocation to Saint John in 1838 and his appointment as Provincial Geologist by

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[11] Ted Binnema, *Enlightened Zeal: The Hudson's Bay Company and Scientific Networks, 1670-1870* (Toronto: University of Toronto Press, 2014), 75.
[12] J. Ross, *A Voyage of Discovery, Made under the Orders of the Admiralty, in His Majesty's Ships Isabella and Alexander, for the Purpose of Exploring Baffin's Bay, and Inquiring into the Probability of a North-West Passage* (London: J. Murray, 1819), 73.
[13] Ted Binnema, *Enlightened Zeal*, 143.
[14] Geologists in Nova Scotia frequently sought out collaboration with peers elsewhere in the collection of mineral specimens and the circulation of knowledge gleaned through that collection was transferred via frequent correspondence between scientists in the Maritimes and Britain. See Tim Fedak, "Tracking the Fossil Footprints and Letters of Science from Doctor E.F. Harding in Windsor, Nova Scotia: 1842-1855," *Scientia Canadensis* 43, no. 1 (2021): 74-94.

the Assembly came just three years after the completion of the first Geological Survey of Great Britain. Through a series of published open letters in *The New Brunswick Courier*, Gesner had successfully lobbied, with great enthusiasm, the value of a provincial geological survey to New Brunswick. Having "argued the benefits of the geological survey to the prosperity of the Province," he positioned himself as not only knowledgeable but indispensable to increasing mining production throughout the Saint John River Valley and coasts of the Northumberland Strait.[15] "It has been believed by many," argued one opinion piece in *The New Brunswick Courier*, "that Geology is a science of limited usefulness. But if there ever was a time when mankind derived no benefit from this branch of Natural History, that time has passed away, and the labours of the Geologist have becoming of incalculable importance."[16]

Gesner's labours were perceived to be of great importance to both his career as a settler scientist and the economic future of the settler colony of New Brunswick. The House of Assembly, at a cost of £350 to the province's ordinary expenses, invested significantly in the expansion of the natural sciences outside the halls of King's College with the aim to attract greater capital development in the different parts of the province.[17] "The Earth," wrote Gesner in the preface of his study of Nova Scotia's mineralogy, "not only contains within her bosom, substances the most necessary and indispensable to supply the wants of man; but also exhibits in her vast museum, the most certain, and

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[15] Randall Miller, Diane Buhay, & Michele Hebert, "Specimen Collections from Abraham Gesner's Geological Survey of New Brunswick (1838 to 1842)," *Atlantic Geology* 48 (2012), p. 88.
[16] *The New Brunswick Courier*, 9 February 1839.
[17] 3 Victoria – Chapter 59, *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1840.* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1840).

imperishable records of her own history."[18] To Gesner, geology, and a provincial geological survey, presented an opportunity to unearth not only New Brunswick's geological past, but also its economic future. A systematic inventory of the size and location of the province's various deposits of coals, shales, and stone was "integral to the process of colonization."[19] Several American states, including Massachusetts and North and South Carolina, had already organized such surveys to expand settlement and capital development. In New Brunswick, these examples, combined with "the proximity of the rich coalfields of Nova Scotia," motivated a desire for geologic reconnaissance, and further inspired efforts in Newfoundland in 1839; and the Geological Survey of the Canadas in 1842.[20] "Public patronage should not be wanting," argued *The New Brunswick Courier*, "on these important branches of science before the country." "Hammer in hand," Gesner began his work in the spring of 1838, "gathering information and specimens almost every week in the summer, [and *The Courier* wished] him every success in his enterprise."[21] At the onset, his work was believed to hasten and increase economic returns on the province's investment into the scientific method, but also further unite geology with the configuration of the settler state.

British colonialism relied heavily on geological knowledge, and its amalgam with other branches of science, to ascribe ownership and extract value from the lands that Britain claimed dominion over. Geology became central to the construction of a transcontinental British Empire made up of multiple colonial and settler colonial projects.

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[18] Abraham Gesner, *Remarks on the Geology and Mineralogy of Nova Scotia* (Printed by Gossip and Coade, Times Office, Halifax, 1836), preface.
[19] Suzanne Zeller, *Inventing Canada*, 16.
[20] Suzanne Zeller, *Inventing Canada*, 14.
[21] *The New Brunswick Courier*, 1 September 1836.

For example, in British India, Anglo surveyors employed an amalgam of geology, anthropology, and archaeology to transform a forested region in central India into "Gondwana."[22] Thought to be the site of the oldest rock systems of the subcontinent, British explorers named it after the Gonds, a large tribal community whom Anglo surveyors believed to be the aboriginal inhabitants of the Indian subcontinent. In their reports, surveyors constructed a so-called primitive "Gondwana [that was] simultaneously a geological, anthropological and historical site" and never a political entity.[23] As J.J. Schmidt argues, "geology was used to mark cultural spaces in the colonial imagination," and in Gondwana the Gonds became living relics in that colonial imagining. The construction of Gondwanan as a "settler geology" by Britain allowed the empire "to claim the forced labour of Indigenous peoples in coal mines was appropriate owing to their 'natural' affinity to the earth as living fossils of earlier geological times."[24] The positioning of the Gonds as relics of an ancient past complimented the need of European scientists to inventory and categorize all aspects of the natural world into taxonomic structures. As historians of geology have observed, the study of the physical geographic features of the planet was likewise a study of time, and the construction of human pasts intimately tied to the Earth's geological history.[25] By the late eighteenth century, the

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[22] P. Chakrebarti, "Gondwana and the Politics of Deep Past," *Past and Present* 242, no. 1 (2019): 119.
[23] P. Chakrebarti, "Gondwana and the Politics of Deep Past*," Past and Present* 242, no. 1 (2019): 119.
[24] Jeremy J. Schmidt, "Settler Geology: Earth's Deep History and the Governance of *in situe* Oil Spills in Albert," *Political Geography* 28 (2020): 3.
[25] See, for example, G. Brent Dalrymple, *The Age of the Earth* (Palo Alto, CA: Stanford University Press, 1991); Pascal Richet, *A Natural History of Time*, trans. John Venerella (Chicago: University of Chicago Press, 2007); Paolo Rossi, *The Dark Abyss of Time: The History of the Earth and the History of Nations from Hooke to Vico*, trans. Lydia G. Cochrane (Chicago: University of Chicago Press, 1984).

planet's antiquity was a topic of great interest and the dynamics of the Earth's interior offered potentially boundless possibilities for extraction and commerce.

North American scientific interests were no less fixated by the many hidden potentials of the Earth, which only lay below the surface. In New York state, as David Spanagel has written in his study of the on the relationship between *Geology and Power in Early New York*, observers of the region's topography frequently "reported their encounters with a wildly diverse variety of landforms and natural features," which housed all manner of mineral and ore deposits ripe for the taking.[26] Similar to British geologists and surveyors in India, American observers likewise took inventory of the region's Indigenous peoples, and blended natural and human histories. This coming together was no less violent in the American context, as geological knowledge informed the settler government in Washington about the potentials for mining and agricultural development in the different parts of the nation, which, in turn, provided justification for the forced displacement of the roughly 60,000 people during the Indian Removals, which peaked during the presidency of Andrew Jackson.[27] As Spanagel explains, "contemporary scientific discourse about [human] 'antiquities,' [provided] the rationale Jacksonians had adopted."[28] Unlike the British in India, however, American naturalists and popular literary figures alike interpreted Indigenous peoples, not as precursors to a so-called

[26] David I. Spanagel, *DeWitt Clinton and Amos Eaton: Geology and Power in Early New York* (Baltimore: The Johns Hopkins University Press, 2014), 19.
[27] Gloria Jahoda, *The Trail of Tears: The Story of the American Indian Removals, 1813-1855* (New York: Wings Books, 1995); Jeffery Olster, *Surviving Genocide: Native Nations and the United States from the American Revolutions to Bleeding Kansas* (New Haven: Yale University Press, 2019).
[28] Spanagel, *DeWitt Clinton and Amos Eaton: Geology and Power in Early New York*, 173.

civilized human present, but as trespassers within a linear history of human existence.[29] William Cullen Bryant, an American poet and journalist fixated by geological science and the applications of nature as metaphor to the nation, viewed manmade geological formations such as burial mounds as evidence to this point. In his 1833 poem, *The Prairies*, Bryant writes:

> Let the mighty mounds
> That overlook the rivers, or that rise
> In the dim forest crowded with old oaks,
> Answer. A race, that long has passed away,
> Built them;—a disciplined and populous race
> Heaped, with long toil, the earth, while yet the Greek
> Was hewing the Pentelicus to forms
> Of symmetry, and rearing on its rock
> The glittering Parthenon.
>
> The red man came—
> The roaming hunter tribes, warlike and fierce,
> And the mound-builders vanished from the earth.[30]

The study of the Earth, and by extension, the study of time and human life, was both pervasive and persuasive. In Britain, geological knowledge supported a growing extractive and commercial empire. Similarly, in the United States, the production of geological knowledge was a mirror to the production of the settler state and the realization of an American manifest destiny.

In New Brunswick, as was the case elsewhere in British North America, the uses of geology were no less extractive and violent against the Wolastoqiyik, Mi'kmaq, and Peskotomuhkati. As Gesner set out to dig up New Brunswick's economic future, he was

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[29] For a thorough discussion on the how modernity and human civilization were imagined by settlers in British North America, see E.A. Heaman, *Civilization: From Enlightenment Philosophy to Canadian History* (Montreal; Kingston, ON.: McGill-Queen's University Press, 2022).
[30] William C. Bryant, "The Prairies," in Bryant, *Poems* (New York: Russell, Odiorne, and Metcalf, 1834), 40-41.

likewise laying a foundation to interpret the province's geologic past and construct a fossil record that could be read against the region's original inhabitants. However, Gesner's priority was to confirm the economic advantages of mineral development in New Brunswick. Travelling by horse, on foot, or canoe with hired guides, he made his way through the southern parts of the province and began collecting specimens and making surveys of the shores and islands of the lower Bay of Fundy (Figure 5.1). There, in the reaches of Charlotte County in the southwestern edge of the province, Gesner wrote his first geologic report on the economic potential, mineral value, and geological histories of the different parts of the region, including the Fundy Isles.


**Figure 5.1** ***Map of Abraham Gesner's geological survey travels (1838-42) compiled by Geoffrey Stead*****, Bulletin of the Natural History Society of New Brunswick XV (Saint John, N.B.: Natural History Society of New Brunswick, 1897).**

### 5.1 Grand Manan and New Brunswick's Geological Survey

Gesner's exploration of Charlotte County began in earnest with his examination of the St. Croix River, and the smaller islands of the Fundy archipelago off the coast of the county's mainland. On the river, Gesner identified the geological makeup of the St. Croix riverbed, and the source of two different mineral springs that fed the watercourse from beneath the earth – which no doubt fed into earlier confusion about the source of the river investigated by the St. Croix Commission. On the smaller islands of Campobello and Deer he found deposits of numerous metals, including galena, which was often mined for its silver content or used as a source of lead in ceramic glaze.[31] "By a judicious exploration," Gesner hypothesised, "the ore might be found in sufficient quantities to repay the expense of mind. A small sum of money, properly applied in seeking the lead ore at Campo Bello, might be amply repaid by new discoveries."[32] The bold and lofty coasts and islands of the county offered all manner of potential for future industry. However, the formidable wind-broken edges and sharp needle-like cliffs that extended into the Passamaquoddy Bay so rigidly posed a serious threat to any seafaring vessel caught in the thick fogs that frequented the lower Bay of Fundy. The first geologic survey of New Brunswick had the capacity to demonstrate the economic potential of the province's different regions, but also the limitations of that potential because of the environmental hazards posed by those same geologic structures. The same was true of

[31] G.F. Matthew, "Abraham Gesner, a Review of his Scientific Work," *Bulletin of the Natural History Society of New Brunswick* no. XV (Saint John: S.I., s.n., 1897), 14.
[32] Abraham Gesner, "First Report on the Geology of Grand Manan [1839]," republished in *The Grand Manan Historian* no. III (Grand Manan: Grand Manan Historical Society), 8.

Grand Manan, which was heavily featured in Gesner's first report on the provincial geological survey.

Gesner observed that there were significant geological differences between the largest island in the Bay of Fundy and the mainland, and startling contrasts between the western and eastern coasts of Grand Manan itself. Not only was the entire western side of the island an iron-bound "mural of precipices of majestic grandeur and beauty," but the entire physiological makeup of the bedrock was significantly younger than that of the eastern shoals and beaches populated by small communities of dynamic fishers. Such contrasts were not unimportant for Gesner, and, indeed, for other contemporary geologists who had to reconcile their religious beliefs with their empirical approach to natural science. Gesner viewed extreme mineral diversity, such as on Grand Manan, as a sign of sudden and overwhelming catastrophic events that reaffirmed his faith in biblical accounts of the Earth's creation without disrupting his scientific training or enthusiasms for the future wealth of the colony that only laid beneath the surface.[33] Gesner's *Report on the Geology of Grand Manan* offers a rich and detailed analysis of the island, its different locales, minerals to be found, historical accounts of the inhabitants, and even the disappearance of an entire marsh ecosystem. According to Gesner, this lost marsh connected the larger island with the smaller cluster of Duck and Nantucket islands and was remembered through an oral tradition carried on by several of the island's residents.[34]

Gesner's analysis of Grand Manan's geological features focused primarily on the island's eastern coasts, specific cliff formations at North Head, the smaller islands

[33] Morris Zaslow, *Reading the Rocks: The Story of the Geological Survey of Canada, 1842-1972* (Toronto: MacMillan, 1975), 27.
[34] Abraham Gesner, "First Report on the Geology of Grand Manan," 8.

adjacent to Grand Harbour, and Dark Harbour. The latter being his only point of exploration on the island's western side because it was the "the singular indentation in the cliff," which formed a wall above the sea from North to South Head.[35] The formation of a natural seawall at Dark Harbour, consisting of sand, pebbles, and drift timber, "completely closed the mouth of a safe and very convenient harbour for small vessels," but Gesner estimated that "only a small sum of money would be required to open this singular harbour, which might be entered at all season of the year, and allow the inhabitants to have communication with the mainland during the winter months."[36] Largely conjecture (possibly foreshadowing the fate of the survey), and certainly an underestimation of the expenditures associated with marine construction, Gesner's hypothesis about improvements to Dark Harbour embodied the underwritten logic behind the survey: to make an interested colonial government aware or the province's different economic potentialities. As Margaret Jacobs succinctly observes in her afterword to *Science and Empire in the Atlantic World*, "Motives matter," because the search for knowledge became entangled with "the search for wealth [and] the power of the state."[37] Through reports, articles, and lectures, but also via the collection of rock samples, plant specimens, and recordings of all manner of life encountered by the surveyor including animals, birds, and Indigenous peoples, the geologic survey was as much an investment in

[35] Abraham Gesner, "The First Report on the Geology of Grand Manan [1839], 3.
[36] Abraham Gesner, "The First Report on the Geology of Grand Manan [1839], 4. In fact, the first proper sea wall was erected and opened seven years later in 1846. Storms, including the 1869 Saxby Gale, would close the opening twice during the nineteenth century, before the present-day opening was constructed in 1908. As a result, Dark Harbour continues to be an important site for dulse production on the island, and a necessary safe harbour for small fishing vessels for both Canadian and American fishers.
[37] Margaret C. Jacob, "Afterword: Science, Global Capitalism, and the State," in James Delebourgo & Nicholas Dew, eds., *Science and Empire in the Atlantic World* (New York: Routledge, 2008), 333.

the future as it was a mechanism that allowed settler governments to exercise sovereignty by determining policies of resource management in newly systematized and accelerated ways.

Potential was a powerful logic behind colonialism, which necessitated inventory sciences such as geology, and as was the case in British India and in the United States, in New Brunswick the geologic survey combined natural and human histories. On Grand Manan, Gesner embodied this in notes that he made about veins of quartz containing a sulphuret of iron. At Whale Cove, there was considerable variety of minerals "along the base of the cliff, [where] I [Gesner] collected fine specimens of calcareous spar, heulandite, stilbite, laumontite, and semi-opal, equal in beauty, and like those found in the trap of rocks of Nova-Scotia."[38] Near the point of the cove, the report denotes the presence of quartz with "dark green chlorite in considerable quantities." In exploring these deposits of quartz, Gesner adds that "this mineral is much used by the Indians, who plan an annual visit to the spot, to procure a quantity of the chlorite to make their pipes." These minerals were likewise used by the settler population of the island and seasonal fishers for making pots and other carrying implement and was colloquially known as pipestone or potstone in the nineteenth century. Gesner goes on to denote that "American fishermen transport considerable quantities to the United States, where it is sold for specimens and other purposes."[39] Thus, Gesner's report simultaneously catalogues both the physical characteristics and cultural significances of the minerals of Grand Manan. At the same time, he documents the presence and seasonal movements of the Peskotomuhkati throughout the bay to access these minerals while also providing an

[38] Abraham Gesner, "The First Report on the Geology of Grand Manan [1839], 5-6.
[39] Abraham Gesner, "The First Report on the Geology of Grand Manan [1839], 6.

account of the trespasses of American fishers who extracted the mineral for their own commercial gain.

These trespassers, the American fishers who traversed the waters and shores of Grand Manan, posed a threat to the colony of New Brunswick and the Maritime region more broadly. Their extraction of resources on and around the island presented a significant challenge to the sovereignty and extractive economies of British subjects. American fishing operations, which stretched from Maine to Labrador, were the cause of persistent disputes between the United States and Great Britain over whether the American Federal Government had inherited rights to access those waters, and the rights of Britain's remaining settler colonies to exert jurisdiction over them.[40] Though the Convention of 1818 gave the United States access to the coastal fisheries in Labrador, and a right to safe harbour elsewhere, it effectively gave Britain's colonies the right to police the inshore fishery–within three marine miles of the shore. However, treaty obligations were frequently disregarded, and as Gesner notes in his report, "The number of American vessels fishing at Grand Manan at the time of my visit, was estimated at six hundred, while the number of British bottoms would not exceed one hundred."[41] The documenting of American incursions into British territory in a geologic or other kind of scientific survey was not unusual, and certainly not without purpose. The Hudson Bay Company, for example, merged scientific and corporate interests by frequently commissioning research expeditions through its territories. After the Convention of 1818, which also

[40] Richard Yeomans, "From Olive Branch to Policing Stick: The Fishery and the Constitutional Transformation of the 1778 Taxation of the Colonies Act," *NiCHE*, (September 24, 2020), https://niche-canada.org/2020/09/24/from-olive-branch-to-policing-stick-the-fishery-and-the-constitutional-transformation-of-the-1778-taxation-of-the-colonies-act/ [accessed November 5, 2023].
[41] Abraham Gesner, "The First Report on the Geology of Grand Manan [1839], 7.

sanctioned joint British and American occupation of Oregon Country, scientific reports had the capacity to relay "The American appetite for new lands," and expansionism prior to the ratification of the Oregon Treaty in 1846.[42] Gesner's report was likewise a means to an end that wedded scientific and politic interests, and encouraged the colonial government to exert a greater presence on Grand Manan and preserve its resources for British subjects. "This fishery," Gesner writes, "is of incalculable value to New-Brunswick, and Nova-Scotia, whose inhabitants will discover, perhaps when it is too late, that they should have been protected from foreign aggression."[43]

The increased regulation and extraction of resources, fish or mineral, was central to Gesner's work as Provincial Geologist. Understanding the obstacles that inhibited the growth of the colony's economy was a major component to his first report on the Geological Survey of New Brunswick, but precedence was given to mining and the potential wealth to be made by expanding the province's mining industry. "Mines," according to Gesner, "are the chief support of [the] manufacturing industry, and the great centre of supply for almost every nation upon the earth." Metals and their uses rested at the heart of Gesner's conceptions of what constituted modern and so-called 'civilized,' life, forming "the ploughs of the farmer, the hook of the fisherman, the safeguard of the mariner, and all those engines of war used for assault and defence. Its use distinguishes a civilized people from those who are but little elevated above the brute creation, except in their human form."[44] Others in New Brunswick likewise viewed mining and the utility of

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[42] Ted Binnema, *Enlightenment Zeal*, 156-157.
[43] Abraham Gesner, "The First Report on the Geology of Grand Manan [1839], 7.
[44] Abraham Gesner, *First Report: Geological Survey of the Province of New Brunswick* (Saint John, Henry Chubb, Market Square, 1839), 4. For a historical analysis of this mentality in Canada, see E.A. Heaman, *Civilization: From Enlightenment Philosophy to Canadian History* (Montreal; Kingston, ON.: McGill-Queen's University Press, 2022),

metals and minerals as a barometer of the progress of the state.[45] *The Sentinel*, a liberal Fredericton newspaper, observed in 1840 that "On the European continent, mining has long enjoyed the fostering care of different Governments, Colleges have [even] been founded and cherished, for the sole purpose of qualifying the geologist, minerologist and miner for their important duties."[46] Others, still, looked to the coal towns of Pictou County and Cape Breton, in Nova Scotia, as an example of the significant commercial advantages of mining coals in industrial colonies where extraction from Crown lands permeated order that reinforced the colonial state via private enterprise.[47]

In London, industrialists eager to replicate their invested success with new mines in New Brunswick, commissioned William J. Henwood, in 1839, to produce a report on the *Geology and Mining Prospects of Gloucester and Restigouche, New-Brunswick*. Henwood, who was a renowned Cornish mining geologist and later oversaw mines in Brazil and India, submitted his report to the Royal Geologic Society and it also appeared in the Chatham *Gleaner and Northumberland* in December of 1840. Henwood cited Gesner's labours as Provincial Geologist and his donation of geological specimens to the Royal Geologic Society that were collected during his expeditions for the New Brunswick Geological Survey as enticing enough to support investing British capital into expanding mining in the colony. These specimens formed the bases of an "admirable museum, wholly fitted up by himself [and] illustrative of the geology, botany and fauna in general

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especially chapter 5 "The Sociology of Civilization in the 1840s: The Bagot Report," 245-337.

[45] E.A. Heaman, *Civilization*, 68.

[46] *The Sentinel and New Brunswick General Advertiser*, Fredericton, N.B., 15 February 1840, 1.

[47] Daniel Samson, "Industrial Colonization: The Colonial Context of the General Mining Association, Nova Scotia, 1825-1842," *Acadiensis* XXIX no. 1 (autumn/automne 1999): 5.

in New Brunswick and Nova Scotia."[48] Gesner's collection produced what was considered an illumination of what lay beneath the surface, and sufficient evidence that potential "reward to honest industry would be certain, and emigration could be encouraged," according to Gesner in his first report.[49]

The first published report of the Geological Survey of New Brunswick, the observations recorded in it, and the specimens collected to support it, seized on demands for resources that fuelled both labour and commodity market formation in the British Atlantic. "Modern nations," Gesner remarked, "rest upon natural resources, and the fate of empires depend upon those stores of mineral matter laid up in the earth's vast warehouse."[50] The object of the Geological Survey, to record and collect specimens pertaining to the province's natural and human histories, examine each rocky formation, and to discover all the minerals they contain, "with the view of making them subservient to the demands of the country."[51] In short, the geological survey produced knowledge of the physiological components of New Brunswick that served as a vanguard to increased settler colonial expansionism and resource extractive industry. "Knowledge of latent resources extends much farther than the sphere of local speculation," wrote Gesner, "It reaches to other and more wealthy countries, whose inhabitants are ever ready to extend

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[48] *The Gleaner and Northumberland, Kent, Gloucester and Restigouche Schiedam*, Chatham, N.B., 22 December 1840, p. 1.
[49] Abraham Gesner, *First Report: Geological Survey of the Province of New Brunswick*, 8. For more on Gesner's Collection, and the formation of what was to become the New Brunswick Museum, see Randall F. Miller, "Gesner's Museum of Natural History, An Early Canadian Geological Collection," Steinhammer Paleontology Laboratory, Natural Science Department, New Brunswick Museum, 28 March 2007.
[50] Abraham Gesner, *First Report: Geological Survey of the Province of New Brunswick*, 8.
[51] Abraham Gesner, *First Report: Geological Survey of the Province of New Brunswick*, 9.

their commerce, and call into action such objects as will promote individual wealth, and national greatness."[52] The production of scientific knowledge by the New Brunswick Geological Survey was a buttress to the colonial state and Gesner's reconnaissance fuelled desires to exhume from the earth the minerals and resources necessary for growing an industrialized economy in unceded Indigenous territory.

One mineral in particular, coal, as Harold Innis observes, had a "decided tendence to pull raw materials [and settlers] towards the place of extraction."[53] In Nova Scotia, under the auspice of the General Mining Association (GMA) that had monopolized control over provincial mining rights, whole communities arose from the demand of coal mining. "The GMA was planting industry and population," writes Daniel Samson in his study of rural industry in Nova Scotia, *The Spirit of Industry and Improvement*, "serving the interests of the state," and shaping public policies that fed private exploitation of Crown lands.[54] Expanding coal mining in Nova Scotia beyond the three mines operated by the GMA was, however, significantly restrained until 1858 despite the possibility of other significant coal-bearing sedimentary basins in the region, the discovery of which made Gesner's *Remarks on the Geology and Mineralogy of Nova Scotia* so attractive to

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[52] Abraham Gesner, *First Report: Geological Survey of the Province of New Brunswick*, 81-82.
[53] Harold Innis, "Foreword," in E.S. Moore, *American influence in Canadian Mining* (Toronto, University of Toronto Press, 1941), xii.
[54] Daniel Samson, *The Spirit of Industry and Improvement: Liberal Government and Rural-Industrial Society, Nova Scotia, 1790-1862* (Montreal: McGill-Queen's University Press, 2008), 142. For public policy on exploitation of crown lands, see Hugh M. Grant, "Public Policy and Private Capital Formation in Petroleum Exploration," in Paul A. Bogaard ed., *Profiles of Science and Society in the Maritimes Prior to 1914* (Sackville, N.B.: Acadeinsis Press and Centre for Canadian Studies, Mount Allison University, 1990), 137-160.

the government of New Brunswick.[55] If the GMA was going to limit foreign capital investment in mining south of the Isthmus of Chignecto, geological surveys offered a prospectus on mining potential that could be reaped elsewhere. In New Brunswick, unearthing new resources was seen as a lucrative prospect in a region where capital was overwhelming defined by the timber trade. In the Maritimes more broadly, more than any other region, "the Survey encountered a sustained enthusiasm for its work." According to Morris Zaslow in his tome, *Reading the Rocks: The Story of the Geological Survey of Canada*, "The mining industry of the Maritimes owed its continuing prosperity, and in some cases its existence, to the untiring efforts of the Survey, which was also looked on to inaugurate new mining industries that would enhance the regional economy."[56] Indeed, the allure of rocks, or rather, what laid beneath them, enticed New Brunswick's legislature enough to make it the first British Colony with a government-appointed geologist when it hired Gesner in 1838, and the first colony to fund an annual geological report, written by Gesner, and published between 1839 and 1843.

Gesner's subsequent reports on the Geological Survey of New Brunswick were certainly written with the intention to encourage private investment. In his *Third report on the Geological Survey of the Province of New Brunswick*, published in 1841, Gesner was no less adamant about the wealth that rested below the surface, and how the development of coal mining and opening of new mines throughout the province could fill provincial coffers. His claim that "A Great New-Brunswick Coal-Field," that stretched north from Chignecto and covered one third of the province's surface, spurred

[55] Ian McKay, "The Crisis of Dependent Development: Class Conflict in the Nova Scotia Coalfields, 1872-1876," *Canadian Journal of Sociology* XIII (1988), 11-17.
[56] Zaslow, *Reading the Rocks*, 231.

unprecedent speculative mining.[57] Prior to 1838, the New Brunswick Mining Company was the only incorporated mining operation in the province, and only one coal mining lease had ever been issued by House of Assembly to an Andrew Flemming, whose lease was specific to Long Creek Point, near present-day Minto.[58] By 1851, another three mining companies in Westmoreland, Carleton and York, and Albert counties were incorporated by provincial articles with capital stocks cumulatively valued at £85,000.[59] The number of mining leases issued by the province likewise skyrocketed, with some individuals purchasing multiple leases for the same county.[60] Gesner's geological reconnaissance did exactly what it was envisioned to do: inventory extractable natural

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[57] Abraham Gesner, *Third Report on the Geological Survey of the Province of New Brunswick* (Saint John, Henry Chubb, 1841), 62-63.

[58] "An Act for the Incorporation of The New Brunswick Mining Company. Passed 19th March 1833," *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1833* (Fredericton, NB: John Simpson, Printer to the King's Most Excellent Majesty, 1833).

[59] Westmoreland's capital stock was valued at £25,000, Carleton and York's at £30,000, and Albert's at £30,000. Shares were divided and sold initially sold at £25 each according to articles of incorporation. The fact that the Carleton and York and Albert Mining Companies were established at opposite ends of the decade, but their initial stock was identically evaluated by the province speaks to the nature of speculative mining and what happens when that speculation does not result in a return. See, "An Act to incorporate the Westmorland Mining Company. Passed 19th March 1841 in *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1841* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1841); "An Act to incorporate the York and Carleton Mining Company. Passed 14th April 1847," in *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1847* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1847); "An Act to incorporate the Albert Mining Company. Passed 7th April 1852," in *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1853* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1853).

[60] As an example, Robert Foulis, notable for his invention the steam-powered foghorn, purchased five mining leases all in Albert County in 1850, prior to the incorporation of the Albert Mining Company. See Harold E. Wright, "Robert Foulis (1796-1866): New Brunswick Inventor, Entrepreneur and Geologist," *Geoscience Canada* 17, no. 2 (1990), 103.

resources in such a way that facilitated their introduction into an expanding industrial market economy. Both economic potential and the nurturing of a growing business community in search of valuable ores and mineral deposits proved to be powerful justifications for the New Brunswick Geological Survey that "served immediate material, as well as abstract scientific, ends."[61]

What initiated a mining boom, however, ultimately ended in a bust when the substance of Gesner's greatest claim in his reports as Provincial Geologist did not materialize. In reports published in 1842 and 1843, he offered evidence of an expansive coal field that stretched from Sackville to Fredericton. In reality, the great deposits of coal and other valuable ores were less than great in actual scale. Gesner's work in convincing the government, and a large part of the public, that the value "of the mineral recourses of the province were practically limitless" resulted in substantial losses for investors in private mining operations established throughout southern New Brunswick.[62] Investors directed their blame at both Gesner and the provincial government that commissioned the Geological Survey, which, in turn, resulted in Gesner's dismissal and the termination of the New Brunswick Geological Survey after 1843.[63] Contemporaries were also quick to provide a re-examination of the work done by the unfortunate Provincial Geologist. In 1850, James Robb, while assisting Professor James F.W. Johnston of Durham University with his report on New Brunswick's agriculture potential, heavily criticized "the unwarrantable exaggerations of Dr. Gesner as to the boundless stores of mineral

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[61] Hugh M. Grant, "Petroleum Exploration," 140. Grant is paraphrasing Zeller. See, Suzanne Zeller, *Inventing Canada*, 49.
[62] R.W. Ells, *A History of New Brunswick Geology* (Montreal: Gazette Printing, 1887), 5.
[63] Morris Zaslow, *Reading the Rocks*, 15-16.

wealth."[64] Robb suggested that "Dr. Gesner seems to have assumed that most of the red coloured sandstones" rested above "the great coal formation," and in spite of contemporary evidence produced by Charles Lyell that red sandstones more typically "are below the productive coal measures."[65] Later reassessments of Gesner's tenure as Provincial Geologist published in 1897 were more sympathetic, noting that it was his identification of different geological "outcrops" of coal in the province that "led Dr. Gesner to infer the presence of valuable beds of this mineral."[66] Nevertheless, inference ultimately led to his dismissal, but did not outright diminish the perceived value of geological science.

Johnston, in his published *Report on the agricultural capabilities of the province of New Brunswick*, wrote at length about the value of geological knowledge to the expansion of the colony's food economy. "Agricultural capabilities of a country depend essentially upon its Geological structure," argued Johnson, noting that "the possession of a good Geological Map is of much importance."[67] Determining the value of the surface required an awareness of what lay below. Notwithstanding its failure in accurately purporting the size of extractable resources, the New Brunswick Geological Survey provided a wealth of knowledge that Johnston complimented at length:

> The wisdom and discernment of the Legislature of New Brunswick, and to their energy in developing the natural resources of the Province, that imitating the New York and other State Legislatures, they should have taken such early steps, by the

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[64] R.W. Ells, *A History of New Brunswick Geology*, 5.
[65] James Robb to J.F.W. Johnston, 15 December 1849. Letter transcribed in J.F.W. Johnston, *Report on the agricultural capabilities of the province of New Brunswick* (Fredericton: J. Simpson, 1850), 12.
[66] G.F. Matthew, "Abraham Gesner: A review of his scientific work," *Bulletin of the Natural History Society of New Brunswick* XV [1897], 36.
[67] J.F.W. Johnston, *Report on the agricultural capabilities of the province of New Brunswick* (Fredericton: J. Simpson, 1850), 11.

> appointment of a Provincial Geologist, and otherwise, to illustrate the physical and geological structure of the portion of North America.[68]

In Johnston's view, it was lamentable that both the survey and the appointment of a provincial geologist were thrown out the window, but his positioning of New Brunswick in like terms with New York State for its similar early investment in geologic science is noteworthy. Public investment into the study of natural history was systematized in New York in 1836 with the creation of the New York Natural History Survey, which was an inventory of the State's extractable resources.

The New York Natural History Survey was first proposed in 1836 by John Adams Dix, New York's Secretary of State. Dix asserted that such a survey would "encourage exploration of mineral and other resources," while also adding to a growing body of scientific knowledge. Field work began that summer, with particular focus on the Hudson River Valley, and culminated in a series of final reports that were first published in 1842.[69] Both New Brunswick and New York emphasised the duality of the survey, noting that it assisted in the development of the state through the utilitarian production of natural knowledge, but offering suggestions on how utilising natural knowledge could bolster the economy.[70] Dix, and many other like-minded legislators in either New York or New Brunswick, saw the survey as an experiment in state-formation and "confidently believed that the work, independently of its contributions to the cause of science, will in short time add to the productive industry of its citizens, and annual profit exceeding the whole

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[68] J.F.W. Johnston, *Report on the agricultural capabilities of the province of New Brunswick*, 11-12.
[69] John A. Dix, *Report of the secretary of state, in relation to a geological survey of the state of New-York. Made to the Legislature, January 6, 1836* (Albany: Croswell, Van Benthuysen and Burt, 1836), 4-5.
[70] Philip G. Terrie, "The New York Natural History Survey in the Adirondack Wilderness, 1836-1840," *Journal of the Early Republic* 3, no. 2 (1983): 185.

amount expended in its execution–a profit which will be regularly augmented, as the resources which it opens to view, are brought into operation."[71] Such extractive settler mentalities were not exclusive to either American or British American colonial projects, but rather were capitalised upon in like fashion through the eighteenth and nineteenth century, pointing to a colonial continuity in extractivist settler mentalities. Even after Gesner was removed as Provincial Geologist, the public did not divest from inventory science, and much like in New York State, reoriented toward trained practitioners and the institutions that produced them as arms of government.

### 5.2 Practical Demands on an Impractical Institution

The dissolution of the office of the Provincial Geologist did not negate the colonial government's dependence on scientific knowledge as a generator of wealth and industry. Gesner's removal from the post, and the subsequent state of destitution he found himself in, created something of a vacuum for the preservation of the advanced study of natural phenomena in New Brunswick. Though there was a considerable number of local voluntary organizations that considered the applications of natural knowledge within colonial life, such as the Fredericton Athenaeum and Saint John Mechanic's Institute, only one institution was adequately poised to assume the task of systematically teaching and promoting the kind of practical knowledge necessary for transforming New Brunswick's landscapes: King's College Fredericton. The College was already home to a museum that contained a considerable collection of mineral and other specimens that

[71] John A. Dix, *Report of the secretary of state, in relation to a geological survey of the state of New-York. Made to the Legislature,* 53.

documented the colony's natural histories. Its library, which had initially consisted primarily of literary and religious works, had expanded to include texts on agricultural chemistry, botany, and geological science including Gesner's own study of Nova Scotia geology.[72] Professor Robb had also established himself as both a capable and reliable authority on New Brunswick's geology, biodiversity, and as an advocate for practical training and science education at the collegiate level. However, the College was the subject of serious disagreement in the House of Assembly about both denominational influences upon collegiate education in the province and the purpose of an institution of higher learning within a settler colony. Following the discontinuation of the geological survey, maintaining the production and dissemination of practical knowledge in New Brunswick became a central part of the debate about the future of King's College Fredericton, and played a significant role in shaping the institution after 1844.

Following his dismissal in 1843, Gesner incurred serious debts from poor investments and losses in court, which forced him to reinvent himself in Saint John as a popular lecturer on topics including geology, but also galvanism and the resurrective effects of electrical current. In one notable presentation, the former provincial geologist attempted to resuscitate a severed ox head in front of an audience of nearly one thousand gobsmacked Saint John residents.[73] Still, the rise of popular scientific culture did not cure the former Provincial Geologist's financial woes. Gesner amassed a collection of over two thousand specimens of natural history, including flora and fauna, minerals, insects, animals and birds, and also so-called "Indian relics." In a synopsis of the contents of his

[72] College Minutes, meeting of 30 March 1840, p. 191.
[73] Martin Hewitt, "Science as Spectacle: Popular Scientific Culture in Saint John, New Brunswick, 1830-1850," *Acadiensis* XVIII, no. 1 (Autumn/Automne, 1988): 107-108.

museum of artifacts, published in order to draw donations from interested spectators, Gesner notes that in his procession were "Indian Stone Pot[s], Axes," spear and arrow heads, other "relic[s] found among Indian Bones," but also "Indian Beads and the Fur Grave Clothes of Indians, from the Oromocto [River]," and a "Copper Kettle of French Manufacture [which] contained the skulls of two Indians."[74] Hoping to capitalize on the spectacle of his cabinet of curiosities, Gesner advertised the opening of his own museum in an apartment that he rented on Prince William Street in Saint John. All the while, he was attempting to sell his collection of specimens to either the province or the city's Mechanics' Institute. Only after he left Saint John in 1846 did the majority of the artifacts in his museum end up in the city's Mechanics' Institute, likely at a fraction of what Gesner valued them at.[75]

According to Randall Miller of the Natural Science Department of the New Brunswick Museum, Gesner's collection of specimens had become a matter of interest to the provincial government.[76] The Assembly moved to consider the acquisition of Gesner's collection of geological specimens and other "objects of Natural History, contained at his museum at Saint John."[77] The issue went to the Supply Committee to decide, but ultimately was voted down a year later. King's College Fredericton, however,

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[74] Abraham Gesner, *Synopsis of the Contents of Gesner's Museum of Natural History, at Saint John, N.B. Opened on the Fifth day of April 1842* (Saint John: Henry Chubb, Market-Square, 1842) 48.
[75] Randall F. Miller, "Gesner's Museum of Natural History, An Early Canadian Geological Collection," Steinhammer Palaeontology Laboratory, Natural Science Department, New Brunswick Museum, 28 March 2007, https://journals.lib.unb.ca/index.php/gc/article/view/10232/10611 [accessed January 23, 2024].
[76] Randall F. Miller, "Gesner's Museum of Natural History, An Early Canadian Geological Collection."
[77] Journal of the House of Assembly of ... New Brunswick from January to March 1841 (Fredericton, J. Simpson, 1841), 155.

was likewise interested in acquiring part the collection to add to their own museum, and compared to the Mechanics' Institute, the College was in a better position to control and promote the production of natural knowledge in New Brunswick. The Board of the College had been investing in its own collection of natural specimens through the 1830s, under the management of Professor Robb, and resolved to acquire certain geological specimens from Gesner.[78] Robb, who was present during Gesner's inaugural lecture of the Saint John Mechanics' Institute, and was later a critic of Gesner's work as Provincial Geologist, laboured to encourage the study of natural history and philosophy at the collegiate level in New Brunswick. Much like Gesner, Robb, and his colleague William Brydon Jack, justified their encouragement of the sciences as a means of increasing the economic and industrial capacities of New Brunswick. Though the majority of the collection of specimens that Gesner gathered during his tenure as Provincial Geologist was acquired by the Mechanics' Institute via his creditors, the Board did utilize "funds of the College [to] pay the expense of Packing and convoying by Dr. Gesner the Collection of Minerals he had expended from his collection."[79] The remainder, according to Zaslow, became "the nucleus of [what was to become] the New Brunswick [Museum]."[80]

King's College Fredericton was becoming an important nucleus for producing scientific knowledge in New Brunswick, albeit at the reluctance of College President Edwin Jacob. However, Robb and Jack, as well as several members of the Assembly saw the potential for the school to continue the functions of the geological survey. Though the provincial government would no longer finance geological reconnaissance to the same

[78] College Council Minutes, 30 June 1841, p. 141
[79] College Council Minutes, 30 June 1841, p. 141
[80] Moris Zaslow, *Reading the Rocks*, 16.

scale that it had, efforts to exploit new resources and expand natural knowledge about the province found support in Professors Robb and Jack.[81] The College provided a central and systematic mechanism to promote the effectual study of New Brunswick's natural history, and Robb remained committed to the expansion of the institution's influence in this matter by regularly making requests for new "zoological and botanical apparatuses in the College," and the College Board often obliged given the success of Robb's labours both on and off campus.[82] Jack found success in the construction of an astronomical observatory on the College's campus in 1850, and both professors built connections through correspondence with other leading scientists, including the astronomer William Cranch Bond at Harvard and naturalist Jacob Whitman Bailey at West Point.

Despite such support, and the importance of Robb and Jack's efforts to expand scientific knowledge and its applications in New Brunswick, tensions between the province's House of Assembly and the College Board, and also between Robb and Jack and the College's President, had reached a critical point following the dissolution of the New Brunswick Geological Survey. Through a decades-long struggle, as discussed in Chapter Three, the assembly cemented its power as the legislative branch of government and gained significant influence over King's College Fredericton through the control of its monetary endowment. This influence gave considerable license to Assembly members to further criticize the illiberal disposition of President Jacob, who refused to open the Fredericton institution to more Protestant denominations or shift the school's focus

[81] The College regularly hosted a series of lectures on Agriculture, presented by Robb, members of the Saint John Mechanics Institute, and even Abraham Gesner. By 1849, the College Council established a committee to consider the creation of Professorship of Agriculture. College Council Minutes, 10 March 1849, p. 360.
[82] College Council Minutes, 31 March 1849, p. 369.

toward more practical types of science education.[83] Jacob's commitment to an Oxfordian model, one that emphasised the Anglican establishment and classical education, proved particularly antithetical to the needs of the colony as expressed by the Assembly.[84] As Richard Jarrell has aptly observed, "New Brunswick–thinly settled with a tiny upper class, with an extractive economy and few occupational outlets for the classical-trained student–was ill-suited for an Oxford style education."[85] Though small reforms to the College's royal charter were introduced in 1844, a growing faction within the House of Assembly continued to advocate for greater change to the province's educational landscape. This faction, which included members of the Assembly who had attended King's College Fredericton, advocated that the subjects taught by Jack and Robb represented the kind of practical knowledge that justified a reorganization of the institution rather than its ruin.[86] The transformation toward a more practical curriculum, rooted in the natural sciences and knowledge that aided economic growth in the colony, was more sensible to members of the legislature given realties of life in New Brunswick.

The transformation of King's College began in 1845, only two years after the discontinuation of the New Brunswick Geological Survey, due to growing pressure from both the legislative and executive branches of government. During William Colebrook's

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[83] As late as 1851, President Jacob was publicly advocating for a more classically focused style of education that better resembled the structure of degree-granting institutions in England. See Edwin Jacob, *The experience, prospects and purposes of King's College, Fredericton: oration delivered at the encœnia, June 26, 1851* (Fredericton, N.B.: J. Simpson, 1851).
[84] Richard Wilbur, "Jacob, Edwin," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[85] Richard Jarrell, *The Cold Light of Dawn: A History of Canadian Astronomy* (Toronto: University of Toronto Press, 1988), 58.
[86] Frances A. Firth, "King's College, Fredericton, 1829-1859," in A.B. Bailey, eds., *The University of New Brunswick Memorial Volume* (Fredericton, University of New Brunswick, 1950), 28.

tenure as Lieutenant Governor, 1841-1848, Robb and Jack successfully lobbied for the expansion of science education at King's College. The expense of the College, which increased dramatically during the ensuing years with the added costs of new buildings and astronomical equipment such as the 7.5-foot refracting telescope, ignited debate about the costs associated with preserving King's College at the expensive of other denominational academies. Since King's College Fredericton was an Anglican institution, critics viewed the school's growing public expense as creating a "favoured class" of scholars.[87] To quell opposition, and in response to denominational infighting about collegiate education in the province, which already resulted in the opening of a separate Wesleyan Academy in 1843, the assembly reformed the Fredericton collegiate school's charter in 1845 to allow non-Anglicans to join the newly formed College Council, which replaced the former Board as the entity responsible for the management of the school.[88] This move, according to John Ried in his history of Mount Allison University, "had temporarily abetted the attacks upon the King's College, but within a few years its narrow classical curriculum, its continuing association with Anglicanism, and its failure to secure large numbers of students were again attracting attention."[89]

Between 1845 and 1848, the Assembly moved to establish several other Mechanics' Institutes throughout the province "for the purpose of instructing Mechanics

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[87] Open Letter of Humphrey Pickard, *New Brunswick Courier*, 18 March 1845. Pickard was a Methodist minister, educator, journalist and the first principal of the Wesleyan Academy, which opened in Sackville, New Brunswick in 1843.

[88] "An Act to amend the Charter of King's College. Passed 27th March, 1845," 10 Victoria – Chapter 111 (1845). *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1847* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1847), 186-191.

[89] John Reid, *Mount Allison University Volume I: 1843-1914* (Toronto: University of Toronto Press, 1984), 75.

and others in morality, Literature, and the different Branches of useful Science."[90] These voluntary societies focused on the general dissemination of useful knowledge that encouraged the transformation of the New Brunswick countryside, as they were legislated to do, and encouraged agricultural expertise that was grounded in geology and chemistry. The College Council was not oblivious to the increase in competition for students with the opening of new Mechanics' Institutes but faced serious internal division about the reforms necessary to compete for pupils. In 1849, the Council heard a proposal from Robb for the creation of a new course on agricultural chemistry, one that would utilize the school's endowed land to "combine the theory with the practise of agriculture."[91] The Council struck a committee to consider the proposal, which would have increased Robb's salary by £25 pre annum, but ultimately voted down the proposal without stating a serious cause in the Council's meeting minutes other than Jacob's argument that such a course would "be contradictory to the fundamental principles of our Charter."[92] Later, during the encaenia of 1851, Jacob dug-in, delivering an hour-long oration on the "prospects and purpose of King's College," where he challenged his critics in the Assembly who "thought our collegiate system is 'unsuited' to the state of the country; and that, if we would render our instructions generally useful, we must make them practical." Students who pursued such practical training, he scorned, were "Men of inferior education… [performing] the practical work," "if that process deserves the name of tillage, which

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[90] 8 Victoria – Chapter 50, "An Act to incorporate the King's County Mechanics' Institute. Passed 27th March 1845, in *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1845* (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1845). Similar legislation was passed in following years that established Mechanics institutes in Miramichi (1847), Dorchester (1848), and Woodstock (1848).

[91] Meeting of 10 March 1849, College Minutes, p. 360.

[92] Meeting of 17 March 1849, College Minutes, p 365.

scatters wild labour over indefinite space, and leaves the exhausted soil in a state worse than that which nature had presented."[93] Jacob imagined a system of learning for the sake of class distinction while his opponents sought classes for the sake of learning the skills necessary for exploiting the resources of the land. In either case, knowledge was never for knowledge's sake, but Jacob's mutual lack of altruism provided him with little common ground to challenge seriously the critics of his vision for King's College.

In 1854, criticisms of the impractical education offered by King's College Fredericton reignited debate in the legislature. Lemual Allan Wilmot, a lawyer and former student of the institution, spearheaded the defence of the Fredericton collegiate school, arguing in favour of reforms in an independent report that he drafted on the condition of the College. His report, which was tabled in February during the winter session of the house, contained suggestions for sweeping "reforms in the Constitution and management of the College as will satisfy the public."[94] Despite his connection to the school, Wilmot condemned the College Council, noting that "It must be admitted by all that up to the present time King's College has failed to realise the expectations of its founders." And in a thinly vailed jab at President Jacob, Wilmot noted that "The cause of such failure is not now necessary to enquire into but… improvements must necessarily be regarded without any interference [from] their precious Religious opinions – then such a measure ought to be attempted." Wilmot, recognizing that the assembly had long wished to make King's College Fredericton a provincial institution, endowed with public funds, and "therefore belonging alike to every Denomination of Christendom," recommended the complete

[93] Edwin Jacob, *The experience, prospects and purposes of King's College*, 9-10.
[94] Lemuel Allen Wilmot, "Report on the College, and Plan to Improve," in College Council Minutes, 441.

secularization of the institution, and through it the creation of a provincial collegiate school that emphasised the kind of education necessary to New Brunswick as a settler colony.[95] His proposal to the Assembly stressed the "rewards of mechanical industry," and how a collegiate education that focused on more practical training and scientific knowledge rather than classical learning would be advantageous to both students and the government.[96]

Colebrook's successor as Lieutenant Governor, Edmund Walker Head, was sympathetic to the Assembly member's criticism of the state of collegiate education. In response to the report that was drafted by Wilmot, appointed a commission in September 1854 to investigate the efficiency and usefulness of King's College and to propose changes to the college that better reflected the spirt of the legislative reforms passed in 1845. At a cost of over £500, The King's College Commission was chaired by John Hamilton Gray, an assemblyman, and future Primer of New Brunswick. Gray was joined by two other members of the legislature, John S. Saunders and James Brown, and two leading experts from outside New Brunswick, J.W. Dawson, the preeminent geologist and Presbyterian, and future Principle of McGill College, and Egerton Ryerson, the methodist author and a well-known educationalist in the Canadas. Established by an Act of the Assembly, the Commissioners were charged with two objectives: to determine which

[95] Wilmot, "Report on the College, and Plan to Improve," in College Council Minutes, 441-442.
[96] Wilmot, "Report of the Committee on the Welfare of Kings College," in *Journal of the House of Assembly of ... New Brunswick from ... February to ... May 1854* (Fredericton: J. Simpson, 1854), 151.

system of education was "best adapted to supply the wants of the Province," and to determine if King's College as it was then constituted was able to deliver that system.[97]

In response to their first objective, the Commissioners stated unequivocally in their later report that a university education ought to be "comprehensive, special, and practical."[98] This included courses typically taught in universities in Great Britain and the United States, plus courses tailored to the local population, focussing on such disciplines as agriculture science, mechanical industry, manufacturing, and the commercial possibilities of teaching sciences such as geology and botany in New Brunswick. The report went into further detail on the exact type of special courses to be offered, and on the non-denominational nature of the school, emphasising that "courses of study of Civil Engineering and Land Surveying" were in response to "the higher educational wants and interests of New Brunswick," but that the "duty of Government to give such religious instruction" must not be "constituted to represent and inculcate the sentiments of any one religious persuasion."[99]

On the second objective, the Commissioners were again clear in their language that King's College in its current form, and despite the charter reforms from a decade prior, was not able to bring to fruition their recommended system. In response, the

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[97] The initial sum of £250 was allocated through order-in-council at the request of Lt. Governor Head, but an additional £270 was allocated by the Assembly. 18 Victoria – Chapter 20, "An Act to appropriate a part of the Public Revenue for the services therein mentioned. Passed 12th April 1855," in *Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year 1855* (Fredericton: John Simpson, Printer to the Queen's Most Excellent Majesty, 1855), 70.

[98] "Report of the Commission appointed under the Act of Assembly relating to King's College, Fredericton," in Appendix, *Journal of the House of Assembly of ... New Brunswick from ... May to ... December 1854* (Fredericton, J. Simpson, 1854), clxxiv.

[99] Report of the Commission appointed under the Act of Assembly relating to King's College, Fredericton," in Appendix, *Journal of the House of Assembly of ... New Brunswick from ... October to ... November 1854 (*Fredericton: J. Simpson, 1854), clxxiv.

Commissioners outlined a path whereby public investment in King's College could also increase the number of trained practitioners who could apply their skills and knowledge in the colony. The solution was not simply a re-investment by the colonial government into one collegiate school, but a renewed investment in the primary and secondary education systems as well. For example, in their report the Commissioners pointed out that there would have to be remedies established for the "chief anomalies and weaknesses" that existed in the Grammar and Parish Schools.[100] They also made a strong plea for the establishment of a Model and a Normal School, and the development of a system of libraries beyond those that existed in the different Mechanics' Institutes throughout New Brunswick. Though King's College and collegiate education generally was the central focus of their work and eventual report, the Commissioners were drawn to the idea of linking all educational institutions in the provinces as a means of creating a centralized and comprehensive system for the dissemination of useful and scientific knowledge in New Brunswick.[101] Meeting in Fredericton and Saint John, the Commissioners were unanimous in their opinion that the system of education should merge the best practise of both British and American approaches to collegiate schooling. In particular, "courses of instruction adapted to the agricultural, mechanical, manufacturing, and commercial pursuits and interests of New Brunswick."[102]

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[100] "Report of the Commission appointed under the Act of Assembly relating to King's College, Fredericton," in Appendix, *Journal of the House of Assembly of ... New Brunswick from ... October to ... November 1854 (*Fredericton: J. Simpson, 1854), clxxxvii.
[101] Katherine MacNaughton, *The Development of the Theory and Practice of Higher Education in New Brunswick*, (MA Thesis: University of New Brunswick, 1947), 157.
[102] "Report of the Education Commission," clxxxiv.

In his speech from the throne opening the Assembly in February 1855, the Lieutenant Governor acknowledged the two reports submitted in the last session on the state of King's College and collegiate education in New Brunswick. He echoed Wilmot's position that "the subject of Education is of vast importance to the moral and social well-being of the people of this Province," and further added that practical education in the sciences of geology and chemistry was necessary for "the future prosperity of New Brunswick, [which] depends on the continued and improved culture of the soil."[103] Though many in the Assembly agreed about the importance of a practical education to New Brunswick settlers, doubt as to the capacity of King's College to impart that knowledge persisted because it was, at least on paper, an Anglican institution servicing only one segment of the population. In the same session that the Assembly received Wilmot's report on the status of Fredericton's collegiate school, the legislature voted down a motion for ending the practise of granting monies in support of alternative denominational and private schools on the grounds that public "monies so granted are those of the whole people and not of any sectarian denominational portion of them."[104] Robb, a Presbyterian, imagined that the practise would bring about the end of King's College Fredericton, stating his expectation in a letter to his mother in Scotland that "the College will go now and probably instead of a general one there will be several smaller [schools] in the hands of different sects. That was the game to break the endowment."[105]

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[103] Address of Lt. Governor John Manners-Sutton to the House of Assembly of New Brunswick, *Journal of the House of Assembly of New Brunswick from October to November 1855* (Fredericton: J. Simpson, 1855), 46-47.
[104] "On motion of Mr. Boyd," *Journal of the House of Assembly of New Brunswick from October to November 1854* (Fredericton: J. Simpson, 1854), 136.
[105] Ellen Robb to Elizabeth Robb and Jane Paterson, Fredericton, 20 March 1858, in Bailey, ed., *The Letters of James and Ellen Robb: Portrait of a Fredericton Family in Early Victorian Times* (Fredericton: Acadiensis Press, 1983), 130.

Notwithstanding the generally positive reception of the report of the King's College Commission, the battle over the future of the school persisted in the House of Assembly for another three years. Critics saw the failure of changes to the school's charter in 1845 as evidence that merely amending the charter again would do little to improve the actual function of the school so long as Jacob remained at the helm as President of the College Council. "The crescendo of the battle," according to Frances A. Firth, the former head of the University of New Brunswick Archives, brought with it "all kinds of proposals for its improvement, such as its conversion into an agricultural school with a model farm attached, its removal to Saint John, and even the closing of its doors altogether."[106] The political whirlwind surrounding the College drew large crowds that filled the galleries of the legislature during debates, and tension was even thought to have spilled over into the streets with rumors that debaters engaged in duels when discussion in the Assembly failed to produce any navigable solution to the question of King's College.[107] On campus, however, Robb was optimistic about the proposed reforms and the potential intervention by the Assembly into the structure of collegiate education in Fredericton. "The Report of the College Commissioners has come in – it is very good and proposes to continue and extend the College… one this is certain Dr. Jacob will not continue in the management."[108] His optimism was well placed, and his hypothesis that Jacob would resign proved accurate following the passing of the "Act to Establish the University of New Brunswick" in April 1859.

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[106] Frances A. Firth, "King's College, Fredericton, 1829-1859," in Bailey, eds., *University of New Brunswick Memorial Volume*, 28.
[107] Frances A. Firth, "King's College, Fredericton, 1829-1859," in Bailey, eds., University of New Brunswick Memorial Volume, 28.
[108] James Robb to Elizabeth Robb, Fredericton, 25 February 1855, in Bailey, *The Letters of James and Ellen Robb*, 113.

When the Assembly drafted the bill for the radical reorganization of the institution, it incorporated many of the recommendations of the report of the King's College Commission, forming the University of New Brunswick as a non-denominational provincial university. Perhaps the most controversial change was the abolition of the Chair of Theology, a post Jacob had held for nearly thirty years. In retaliation, Jacob appealed to the Secretary of State for the Colonies, the Duke of Newcastle, on the grounds that a provincial legislature did not have the constitutional authority to cancel a royal charter.[109] When this failed, Jacob was offered a retiring allowance before the Act came into effect, which "he did not accept," according to Robb, thinking Jacob to be acting "like an old fool, as he is."[110] After the Act for reorganization had passed, the newly created University Senate was to be comprised of "laymen not exceeding nine, of whom the President of the University when appointed shall be one."[111] Because of his clerical status, this precluded Jacob from assuming the role and he refused to accept his demotion to the role of Professor of classics and moral philosophy, and the emphasis of the new institution upon practical education and the sciences within most of its degrees.[112] Reflecting on his final months as President, still adamant in his belief in the Oxonian tradition, he argued that his labours "to communicate knowledge [were] intrinsically

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[109] Richard Wilbur, "Jacob, Edwin," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[110] James Robb to Elizabeth Robb, 5 November 1856, in Bailey, eds., *The Robb Letters*, 126.
[111] 23 Victoria – Chapter 63, "An Act to establish the University of New Brunswick. Passed 13th April 1859," in Acts of the General Assembly of Her Majesty's Province of New-Brunswick passed in the year
1860 (Fredericton, NB: John Simpson, Printer to the Queen's Most Excellent Majesty, 1860), 153.
[112] John Reid, *Mount Allison University*, 87.

valuable, with the disposition to use it for the common benefit."[113] This was the closest Jacob ever came to asserting knowledge for knowledge's sake, albeit knowledge that was rooted in specific Anglican moral and religious tenets.

### 5.3 Science as Settler Reconnaissance

In his first encaenial address in 1839, Robb alluded to those who believed "that the establishment of King's College was premature, that such an institution is needless… to so young a Country." He added that "I am not one of those who foresee any ill consequences from the dissemination, however early, of the principles of science."[114] At length, Robb assured his audience:

> On the contrary, it is my conviction, and I trust that it is equally the conviction of all those whom I now have the honor to address, that the members of every enlightened Legislature, so soon as they have made provisions for the civil Government and commerce of a Country, are bound to provide the means of knowledge for the people whom they represent.[115]

Knowledge was key to the emergence of a settler society, he argued, because "science, which was simply knowledge reduced to a system, conferred power."[116] In doing so, science (knowledge) provided an understanding of the natural world that would make it subservient to the bearer's purpose. Science, according to Robb, was also a powerful metaphor in the making of New Brunswick.[117] By linking the development of government

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[113] Quoted in Richard Wilbur, "Jacob, Edwin," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[114] James Robb, *Oration Delivered at the Encaenia in King's College, Fredericton, June 24 1839* (Fredericton, N.B.: J. Simpson, 1839), 4.
[115] James Robb, *Oration Delivered at the Encaenia in King's College, 1839*, 5.
[116] James Robb, *Oration Delivered at the Encaenia in King's College, 1839*, 5.
[117] Susanne Zeller, "The Colonial World as Geological Metaphor: Strata(gems) of Empire in Victorian Canada," *Osiris* 15 (2000): 85-107.

and commerce in New Brunswick to the establishment of a collegiate institution, Robb underscored the symbiotic, if not also symbolic, relationship between developing a system of knowledge production that secured political order and maintained the authority of the colonial state.[118] The fight for control over the shaping of education at King's College was a fight for controlling the development of New Brunswick as a settler colony.

Through his correspondence, in letters to his mother, brother, and even to his peers in the pursuit of scientific knowledge, Robb frequently referred to the tenuous situation of King's College over the course of two decades. He witnessed, over many years, the tension between the House of Assembly and College Council and he understood that an Oxonian model of classical learning was not sustainable. New Brunswick needed practitioners, not philosophers, and the Assembly was not going to continue to support an institution that did not serve the desire of the state to expand its programme of resource extraction and settlement. For this reason, Robb frequently found support in the Assembly, and the body often turned to him for his expertise. In November 1856, during the debates about King's College, the Assembly appointed Robb a commissioner to report on the state of, and means to improve, agriculture in New Brunswick. His experience with J. F.W. Johnston in 1850, and his own work in gathering specimens related to the province's natural history, made him an ideal candidate. In lieu of there being a formal Provincial Geologist, Robb was also tasked to "prepare a geological map of New Brunswick for Sir William Logan," who founded the Geological

[118] Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985), 81-83.

Survey of Canada in 1842.[119] After King's College was reconstituted as the University of New Brunswick, "[Robb] was every where talked of as the new President of the University." Tragically, he died 2 April 1861 from pneumonia. His colleague, William Brydone Jack, assumed the role of President shortly after, but referred to Robb's death as a great public calamity.[120]

Reform to King's College in the wake of the dissolution of the Geological Survey was the culmination of two decades when the settler state realized that controlling the production of knowledge about land was vital to controlling production upon the land. Knowledge, specifically scientific knowledge, was an important mechanism through which the settler state could accelerate the extraction of resources that fuelled both colonial and imperial economies. How that knowledge was produced, in the form of the Geological Survey or through collegiate-level instruction, was more than simply a process of fact-gathering and the dissemination of fact. It became rooted in the development of New Brunswick as a British settler colony. To expand on the work of Brian Shipley, natural sciences such as geology were intrinsically a settler science, "one which goes a long way towards establishing (or rediscovering) the outdoors," while "surveying by definition is a work of extension: the application of a process not just in one or several places but just about everywhere over a territory."[121] The Geological Survey of Canada was the union of both – establishing a view of the outdoors while acting as an extension of the state in all parts of a territory that it claimed dominion over. When the survey

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[119] James Robb to Elizabeth Robb, 5 November 1856, in Bailey, eds., *The Robb Letters*, 126.
[120] Alfred G. Bailey, "Robb, James," in *Dictionary of Canadian Biography* [*DCB*], www.biographi.ca.
[121] Brian C. Shipley, *From Field to Fact: William E. Logan and the Geological Survey of Canada* (PhD. Diss.: Dalhousie University, 2007), 7.

ceased operation, due to a combination of lost legitimacy and investment dollars, the settler state still needed a mechanism for the collection and dissemination of natural knowledge about New Brunswick. Professor Robb's work in the natural science, his reputation and ability, and his advocacy for practical education at King's College only provided the House of Assembly with further reason to reform the collegiate institution.

Colonial colleges and geological surveys were both arms of the settler state that emphasised the transformation of the landscape through the gathering and dissemination of knowledge. In New Brunswick, dominion over unceded lands, waters, and resources was made possible through the careful observation and inventorying of both humans and non-human specimens. Gesner's work on Grand Manan demonstrates how the geological survey provided not only important reconnaissance into the mineral potential of that region, but also impediments to that potential and challenges to New Brunswick's sovereignty on the island in the form of extractive foreign fishers. The discovery of new extractable resources was an important precursor to an expansion of "capital, labour, and knowledge that colonisers transmitted onto frontiers."[122] This transmission was aided by land-grant universities, such as King's College Fredericton, which supported the production of specific forms of knowledge about the land that they came to occupy. As Caitlyn Harvey very recently argued, land owning universities stimulated a formation of such knowledge and, "although university buildings were geographically fixed, the knowledge that emerged from these edifices was not."[123] As a professor of natural

[122] John C. Weaver, *The Great Land Rush and the Making of the Modern World, 1605-1900* (Montreal: McGill-Queen's University Press, 2003), 90.
[123] Caitlin Harvey, "University Land Grabs: Indigenous Dispossession and the Universities of Toronto and Manitoba," *The Canadian Historical Review* 104 no. 4 (December 2023): 491.

history, Robb frequently made expeditions throughout the province, making both a name for himself and demonstrating to the Assembly the practical potential of King's College to teach settlers how to inhabit the space they came to occupy. Both the New Brunswick Geological Survey and King's College Fredericton/University of New Brunswick were important engines in the settler state's formation, gathering and disseminating knowledge that in turn supported its exploitation of unceded Indigenous territories.

# **Chapter Six**: Conclusion

Shortly after his death, James Robb was replaced by Dr. Loring Woart Bailey (Figure 6.1) as Professor of Chemistry and Natural Science at the University of New Brunswick. Bailey was an American chemist, trained at both Harvard and Brown University, and was the son of Jacob Whitman Bailey, an accomplished professor of geology at West Point whom Robb had corresponded with on matters related to New Brunswick's mineral and geological resources.[1] Reflecting on the career of his predecessor, Loring Bailey wrote of Robb as living "constantly in an atmosphere of science," as he collected and studied various types of natural specimens, the "nucleus" of which resided in the University of New Brunswick.[2] This atmosphere existed prior to Robb's arrival in New Brunswick but was something that he entered into, and actively contributed to, over the course of his career as a settler scientist.

How scientific knowledge powered the making of New Brunswick as a settler colony can be traced in the legislative record of its House of Assembly, the records of the colony's collegiate institution, the labours or aspirations of individual colonists, and how knowledge produced about New Brunswick was exported elsewhere. This dissertation

[1] J.W. Bailey to James Robb, 8 September 1855, in A.G. Bailey, ed., *The Robb Letters: Portrait of a Fredericton Family in Early Victorian Times* (Fredericton: Acadiensis Press, 1983), 117.
[2] Loring Woart Bailey, *Dr. James Robb: First Professor of Chemistry and Natural History in King's College, Fredericton: A Sketch of his life and labours* (St. John, NB.: Barnes, 1898), 3.

**Figure 6.1 Loring Woart Bailey in the lab, UA RG 433, Susan Montague Fonds, item: no. 28, File 2 [186-?]. Courtesy of the University of New Brunswick Archives and Special Collections.**

argues that science shaped how the colony's border was projected onto a map, encouraged reforms to provincial institutions such as King's College Fredericton, and influenced how New Brunswick settlers presented their colony as a place for capital investment fueling the resource extractive economies of the British Empire. Developing a

system to produce knowledge was tied to developing political order and power of the settler colonial state. Doing so served in the ongoing dispossession of the Wolastoqiyik, Mi'kmaq, and Peskotomuhkati whose homelands were claimed by and reinvented as New Brunswick by white settlers.

Indigenous knowledge was, however, a vital resource that settlers simultaneously depended on and sought to erase. The line that comprised New Brunswick's contested western border on European maps was understood on the ground by the portage routes of the Peskotomuhkati, making the search for a St. Croix River dependent on local knowledge of a place called Bone Island. Imperial officials and settlers alike rested their claims to unceded Wabanaki territory on this small point that they could claim as the ancient boundary which divided the colonies they created. The bones of dead settlers planted in the ground on that island acting as seeds for a later political harvest. By reading the sun and the immersions and emersions of Jupiter's satellite moons, trained astronomers such as Thomas Wright repositioned Indigenous homelands under a settler cosmos, transposing that place onto new maps as colonies with newly invented jurisdictional authority.

This invented authority, and the securing of New Brunswick's border, likewise safeguarded access to resources that settlers could extract and build from. The construction of an academy of arts and sciences in Fredericton was built not only on, but with unceded Wolastoqey territory as settlers leveraged land as foundational capital. When the Board of that institution failed to secure a monetary endowment from the colony's House of Assembly, they turned to the New England Company and funnelled monies meant for the destruction of Indigenous cultures into the school's coffers. After 1800, and the reorganisation of the Fredericton Academy as the College of New

Brunswick, land became a central part of collegiate education as Loyalist legislators sought to expand and control the production of knowledge about the land that they had successfully invented jurisdiction over. The struggle to control the production of knowledge vis-à-vis Fredericton's collegiate school reflected an ongoing contest for political power between New Brunswick's appointed and elected houses of government. When the illegal actions of the Executive Council forced the hand of the appointed branch to relinquish some power to the House of Assembly, it likewise began a process where the focus on classical liberal education at the provincial seminary shifted toward a curriculum that responded to the practical needs of colonial life. These needs were driven by a "logic of maximum extraction of value," positioning the moral imperative of education in a need to improve land, and to re-arrange land into resources that could feed colonial and imperial economies.[3]

The later appointment of professors of natural history and philosophy at King's College Fredericton was in response to this demand. When James Robb arrived in New Brunswick, he understood his task to teach New Brunswick settlers about the natural environment that they occupied but lacked the knowledge himself to do it. Setting off on fruitful expeditions to collect specimens and learn of the resources and agrarian potential available at the fingertips of New Brunswickers, Robb constructed a museum of natural history at the College that facilitated in the dissemination of knowledge not only to his students, but the wider public through the creation of the New Brunswick Society for the Encouragement of Agriculture. Robb's colleague, William Brydon Jack, similarly used the College as a base for locating parts of the province longitudinally. From an

[3] Max Liboiron, *Pollution is Colonialism* (Durham and London: Duke University Press, 2021), 71.

observatory built on the campus, and using an electric telegraph, Jack produced the first accurate positing of Fredericton compared to observatories at Greenwich and in Massachusetts. Science promised new advancements in New Brunswick that could accelerate the colony's extractive industries and bring local resources to global markets.

The search for investment in New Brunswick's resources from British capitalist was an alluring prospect for the House of Assembly, and offered an alterative future to the colony, hitherto defined by the timber trade. The finite nature of timber was a cause for concern to some New Brunswick legislators, who worried that the exhaustion of the tree stand would bring about a collapse of political order. In response, the commissioning of Abraham Gesner as Provincial Geologist and the establishment of the Geological Survey in New Brunswick laid the groundwork for reconnaissance into the different mineral potentials hidden beneath the earth. New Brunswick's foray into prospecting science was perceived by some settlers as a sign of the colony's maturation, while others saw the potential that new extractable resources held for further colonial development. When the possibility of infinite potential turned out to be a bust for British investors, the colonial government ended the Geological Survey, but the idea that science provided valuable reconnaissance into the natural world was enough to justify the further reorganization of King's College and the creation of the provincial University of New Brunswick.

Science, as both an idea and an action, was instrumental in the consolidation of British imperial and colonial power in New Brunswick. The unceded homelands of Mi'kmaq, Wolastoqey, and Peskotomuhkati peoples that made up the territory that settlers later called New Brunswick was as much a colonial invention as it was a British imperial formation. This dissertation has argued that the production of scientific

knowledge, beginning in 1763 (the end of the Seven Years War), and ending in 1859 (the formation of the University of New Brunswick) played a significant role the development of the settler colony of New Brunswick. By tracing the labours of individual settler scientists, it is clear where and how the settler state differed to the connections, exchanges, and networks of science, as well as learned societies, universities, and observatories to reaffirm its authority and dominion over unceded land. Both the settler state in New Brunswick and imperial state in London had expectations of developing scientific knowledge that they saw as inventing a bountiful earth from which to further extractivist settler-colonial economies and the commercialization of stolen Wolastoqey, Mi'kmaq, and Peskotomuhkati lands and waters. The colonial society that emerged by 1860, and the utility of science to that process, bore a striking resemblance to what had come before. Accelerated by reforms to institutions that enhanced the collection and dissemination of knowledge, the continuity of science in the making of New Brunswick as a settler colony enabled later generations to reap from the fruits and labours of earlier settlers in ways not unlike the Loyalist refugees who first made New Brunswick their laboratory for North American development in 1784.

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