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INTO THE WILDERNESS: REDISCOVERING TITUS SMITH JR'S PHILOSOPHY OF NATURE

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ABSTRACT

Except in some academic circles, Titus Smith Jr. is mostly a forgotten man. The year 2018 marked the 250th anniversary of Titus Smith Jr's. birth in Granby, Massachusetts (1768-1850). While general articles about Smith's life exist (Punch 1978), surprisingly there have only been three serious studies celebrating his knowledge and scientific thinking (Piers 1938, Clark 1954, Gorham 1955). Smith lived prior to the era when science hardened into specialized fields and when a single mind could move between disciplines allowing each to inform the other. Smith's interdisciplinary methods and his belief that nature is a global force are once again coming to the forefront as climate change emerges as the single most important threat to the survival of the planet. This essay attempts to bring this 19th century philosopher of nature into a modern environmental context.

INTRODUCTION

On March 9, 1802, the provincial treasurer Mr. Michael Wallace stood in the Nova Scotia House of Assembly and presented the account of the expenses owed to Titus Smith Jr. for his surveys of the interior parts of Nova Scotia. Lieutenant Governor Wentworth's instructions to Smith were to communicate his discoveries in the form of a journal, which Mr. Wallace also tabled. Wentworth clearly communicated to Smith that he was not to explore the interior parts of Nova Scotia as a naturalist seeking to document any rare and previously unknown flora, but as an agent of the government hired to carry out an agenda to provide information useful to the Navy Board and Admiralty. However, in the tradition of similar government enterprises, Smith

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was to convey in the journal his conclusions with "reference to notes at the end, which will contain the detail" (Wentworth 1802).

Wentworth's orders to Smith and his travelling companion Mr. Carter, whose identity remains a mystery, were explicit. "Your principal object in this survey will be, to visit the most unfrequented parts, particularly the banks and borders of the different rivers, lakes, and swamps, and the richest uplands, for the purpose of discovering such spots as are best calculated for producing hemp and furnishing other naval stores" (Wentworth 1802). In addition, Wentworth instructed Smith to evaluate the soil, portray the landscape, determine the species, the size, and the quality of timber, and estimate the number of acres suitable for cultivation. Smith also was to record topographic details and correct local place-names on the poorly drawn existing provincial map (Cuthbertson 1983). Smith's stipulated second objective was to provide information on the major river systems including the Stewiacke, Musquodoboit, and Saint Mary's, and examine those rivers that empty into the Annapolis River. Wentworth also wanted Smith to examine Lake Rossignol, and investigate any other phenomena and objects in natural history he might encounter, as long as these observations did not delay or impede the principal purpose of the survey.

Smith's inventory of forest reserves represented a new way of thinking about the role of government in resource management and linked what historian Suzanne Zeller has called the colonial inventory tradition highlighted by "the mapping and cataloguing of resources and other natural phenomena" (Zeller 2009) to the beginning of Canada's "transcontinental national existence" (Zeller 2009). Throughout Smith's journeys, local people played fundamental roles in helping him to determine the character of the land and to document local place-names. Often these colloquial designations reflected the hopes and dreams of settlers (Garden of Eden), their ethnic heritage (Dundee), their loyalty to the homeland (New Germany), or the acceptance of indigenous place names (Musquodoboit). Smith also recorded idiomatic words for mountains, rivers and forests, and carefully drew the dirt tracks and roads connecting remote communities that would become the highways of the future. In the end, Smith's journals and map (Morrison 1986) took the fragmented descriptions of the interior parts of the province and consolidated them into a unified geographical vision. Smith's 1801 and 1802 journeys were also

pivotal in setting the course of his own life. Following his return, Smith immersed himself in discovering and understanding the processes of nature, finding not conflict but harmony, and in doing so came close to the nature of things, the essence of which he distilled in his writings and lectures. The scientific observations Smith made during these travels would fuel both his ecological theories and his unpopular environmental discourse about the destructive forces of resource exploitation on nature and society.

Throughout his life, Smith's scientific method was relentlessly inductive, employing observation, measurement, and experimentation to study natural occurrences. Smith practiced natural philosophy in a disciplined way recording the processes of change and renewal that he observed in the natural world. His writings were both a celebration of the forces of nature and a warning about the social ills that resulted from the destruction of forests and other natural habitats. His ideas about the interconnectedness of all living things rooted his thinking in Anglo-American nature writing and incorporated ecological concepts not previously considered. Above all things, Smith was a keen observer. He compared everything he saw in nature to what he had previously seen and learned. Unlike other naturalists, he was not seemingly interested in discovering new species or filling taxonomic gaps, but in collecting knowledge to understand the workings of the natural world. In doing so, Smith generated an environmental discourse based on his belief that human beings and nature could not be understood in isolation but were inextricably linked.

Another of Smith's achievements was to make science and nature accessible and popular through his agricultural experiments, his lectures before the Halifax Mechanics' Institute, and his articles in various regional newspapers, particularly the *Acadian Recorder*. For Smith, specialized knowledge, visible and comprehensible by only small numbers of elite individuals, was not the inevitable consequence of social hierarchies. Such knowledge, he believed, should be shared, exchanged, and made available to everybody to motivate people to work collectively for the good of society. In doing so, Smith embraced the notion of an "ecology of community" to overcome the social distances between individuals created by rigid class distinctions. This would coordinate social, environmental, political, educational, and scientific initiatives and activities, thereby sustaining the community as a whole. (Field 2019).

Harry Piers considered Smith to be one of the first botanists to study the flora of Nova Scotia using Linnaeus's system of classification. Smith became familiar with this taxonomic method as a young man following Lieutenant Governor Wentworth's gift to his father of Linnaeus's *Systema Naturae* (1758-1759) that introduced the system of binomial nomenclature. This gift to Smith marked "the commencement of scientific taxonomical botany in Nova Scotia" (Piers 1938). Smith used this system throughout his Nova Scotia journeys when identifying plants, using both the common and Linnaean names for 33 species of trees, 50 species of shrubs, and 20 species of grasses, sedges, and rushes. Smith also documented over 100 medicinal plants (Clark 1954). Consequently, Smith's botanical research not only represented the first systematic description of the natural history of Nova Scotia, but also contributed to the origins of a provincial scientific community that eventually reported their findings before newly created learned societies including the Halifax Mechanics' Institute (1831) and the Halifax Literary and Scientific Society (1839).

SMITH'S NOVA SCOTIA JOURNEYS, 1801-1802

Although Piers and others have presented Smith's 1802 northern journey as if it was part of his original surveys for the government, according to Wentworth's instructions to Smith it was not. Wentworth's letter to Smith clearly stated that he was to survey the eastern and western sides of the province. The northern part of the province from Halifax to Pictou was better known and settled, and thus it remains unclear as to who authorized and/or funded his northern survey. It is possible that Smith undertook this journey on his own, unaccompanied by Mr. Carter, in order to complete a survey of the entire province. The fact remains that Smith did not depart on the Northern Tour until September 1, 1802, six months after Mr. Wallace, the provincial treasurer, had tabled Smith's expenses and the final report that Wentworth had requested. Smith's 1801 travels for the government included "The Eastern Tour," from May 12 to June 19, and "The Western Tour" from July 8 to October 16. "The Northern Tour" took place in 1802, from September 01 to October 16. In all, Smith spent 123 days over a period of two years surveying some of the most difficult terrain in Atlantic Canada (Field 2013).

For most of his travels in the eastern and western regions of the province, Smith was reliant on the good will of settlers to provide him with provisions, information on the wilderness, routes to travel, and introductions to planters and fisher folk. Particularly consulted were land surveyors and members of the local militia for their knowledge about the topographical character and geological composition of the terrain. Smith was quick to praise the help and friendly treatment he received from people, at times expressing specific regard for individuals who impressed him. Two distinct trends emerged from Smith's journals during his 1801-1802 field seasons. The first were the day-to-day scientific descriptions of the geography, natural habitat, and geology of the province. These were occasionally laced with comments about the communities and peoples he encountered. The second trend, recorded in his "General Observations" for the Eastern, Western, and Northern Tours, expressed Smith's personal and philosophical judgments about the agricultural, mineral, and settlement potential of the province that he later recounted during his appearance before Lord Durham's Commission at Quebec City in 1838.

Ten days after receiving Wentworth's letter (May 2, 1801), Smith departed from Halifax journeying east, beginning the colonial government's first official expeditions. He set out to inventory the natural resources of the interior parts of Nova Scotia. Rumours and unconfirmed reports offered conflicting descriptions of daunting barriers of water and rock, and a topography devoid of arable soil and commercial timber —hardships imposed by nature that seemingly made settlement and farming impossible. Smith experienced first-hand some of those adversities, negotiating impenetrable thickets of black spruce, facing voracious incessant insects, and confronting the relentless spring rains that forced him to alter his itinerary and often seek food and shelter through the kindness of strangers.

Smith's *Journals* and *General Observations* represented the first systematic description of the natural history of the interior, which were also documents full of personal annotations and reflections about provincial society. Smith gave accounts of the farms and communities he visited, commented on the daily lives of some of the French inhabitants he encountered, and was openly sympathetic to the plight of the Mi'kmaq. He observed that many of the settlers, who were originally tradesmen turned farmers, were somewhat awkward at their new occupation. For instance, in his *General Observations on*

the Western Tour, Smith expressed his views on fishing and agriculture. "In every part of the province where we have been we generally found those who followed fishing complaining of poverty and hard country; whilst those who depend entirely on farming generally hold an opposite language and appear well satisfied with their situations, and sensible that they are in a thriving condition" (Smith 1802). Smith's travels took him through the rugged interior where ordinary farmer and fisher folk struggled to survive against the hardships imposed by climate and nature, and where inhumanity toward the indigenous population remained an unpleasant fact. Smith detailed the struggles of the Mi'kmaq to protect their way of life, and commented on the prejudices of white settlers and Mi'kmaq alike. Smith first voiced some of his concerns about the treatment and condition of the Mi'kmaq in his *General Observations of the Western Tour*.

"We have found it impossible to converse with the few Indians we have met with, owing to their suspicious temper which renders them afraid of strangers. We have met with a very few instances of Indians who have undertaken to cultivate the ground, and to work with some industry, but where they do it gives great uneasiness to their relations and countrymen, who use every means to disengage them from their new occupation, and seem to have as strong a prejudice against our way of living as we can have against theirs" (Smith 1802).

Smith also revealed his sentiments toward indigenous peoples in a story he related about an "Indian" farmer at Nictaw.

> "There is an Indian at Nictaw who has been at work this season, and raised a small crop of corn, wheat and potatoes, and who is very desirous of continuing his new occupation: but his countrymen have taken as much pains to divert him from the miserable Kind of life which they fancy he must lead as white men could have done to prevent one of their Friends from living with the Indians…He still persists in his resolution to be a farmer, but most probably his countrymen will finally persuade him to quit his new occupation, as he will be accounted an Indian by white men and if he follows farming, [and] will be looked upon as a white man by Indians" (Smith 1802).

Smith also recorded comments concerning the Mi'kmaw population in his *General Observations of the Northern Tour*:

> "The beavers are almost all destroyed, although there is perhaps no country where they have been more numerous heretofore than in the barren part of this province… I have not seen more than half a dozen inhabited Beaver houses in the whole course of my tour. The consequence of this scarcity of game is that the internal parts of the Province are but little frequented by the Indians in the Winter… I think a considerable number of them have left the Province… Several of them are employed in the Fisheries… and a small number as labourers by the farmers but the greater part choose to follow their ancient mode of living, and make up for the deficiency of their hunting by making baskets and other small articles (which they barter for provisions) and by begging. They are so much addicted to drinking and suffer so much from their own indolence that I think their number must be decreasing… Notwithstanding the low condition to which the Indians are reduced they still retain a considerable portion of national pride and are many of them, much influenced by their religion… I have never heard an instance of theft committed by any Indian who had not been very much accustomed to the company of white people" (Smith 1802).

Smith also gauged the well-being of the European farmers he encountered. "In several places I have seen persons bringing up a large family of sober industrious Children, whose habits of intemperance would probably have made them useless members of Society if they had lived in a seaport, but the charm of acquiring property, constant employment, and above all the difficulty of procuring the means of gratifying their appetites in a new settled place, have got the better of habits, which in a different situation would have proved their ruin" (Smith 1802). He also noted, "I have in the course of my tour, met with many whose Kindness has laid me under an obligation, but not a single person who I have had any reason to complain of" (Smith 1802).

Smith's surveys through the eastern and western parts of the province were a strenuous feat of exploration. Travelling on foot because the rough and sometimes impassable terrain made employing horses impractical, Smith navigated and mapped the landscape using rod and compass. One month into his Eastern Tour, he stated: "We have travelled many miles in black spruce thickets, where we were obliged to squeeze our way through the bushes, which were so thick that we could seldom see two rods (10 m) ahead…and were

often obliged to go constantly on a zig zag line to avoid such places as were absolutely impassable" (Hawboldt 1955). Smith's engagement with this process was also profoundly scientific and political. His reports and observations did more than unlock the natural mysteries of the colony. Smith framed a new understanding of Nova Scotia by providing a measured scientific and cartographic vision that countered the speculations of lumberjacks, farmers, and hunters about the supposedly uninhabitable interior. In the end, what emerged from Smith's pen was a consolidated landscape with towns and roads fixed on a map that for the first time integrated Nova Scotia into a recognizable and governable geographical entity. Secondly, Smith commented on land use and waste, estimating for example that over a million acres of timber had been lost to fire, an observation that eventually led to the managed use of Crown Lands (Leeming 2012). In 1851, one year after Smith's death, it became illegal to burn any forest and the Crown Land Department no longer granted land but leased it to foresters.

Smith's surveys were important on two levels. First, they occurred as major changes were beginning in agriculture, manufacturing, transportation, communication, science, and technology. These profoundly affected the socio-economic and political conditions in America, Britain, and Europe. The critical questioning of traditional authority generated greater rights for common people and precipitated the American and French revolutions. This period preceded the industrialized revolution that accelerated the rapid manufacture and accumulation of mass-marketed material goods. Equally important, the early 1800's were a time when there was an expansion of scientific knowledge. John Dalton's atomic theory (1803), Michael Faraday's demonstration of electric current (1831), and the discovery of the planet Neptune by Urbain Jean Joseph Le Verrier in 1846, signalled the beginnings of a new age of science and industry. Furthermore, Britain's Slave Trade Act of 1807, the French invasion of Russia in 1812, the defeat of Napoleon at Waterloo in 1815, and the Slavery Abolition Act of 1833, shifted the balance of political and moral power in Europe. However, no expedition so dramatically and quietly punctuated this new age more than the five-year voyage (1831-1836) of HMS *Beagle* that led Charles Darwin to his origins of humankind.

Smith's journeys also coincided with new approaches to the study of nature that emerged in the American nation. The Eurocentric

assertions of the French naturalist, mathematician, biologist, cosmologist, and author Comte de Buffon's (Georges-Louis Leclerc), about the superiority of Old World plants and animals over their New World cousins galvanized the patriotic fervour of men such as Thomas Jefferson and other supporters of independence. In his massive *Historie Naturelle*, Buffon laid out his theory of degeneracy arguing that all species in America were weak and feeble and proposed that species that had moved away from the centre of creation deteriorated from their original forms. It seemed impossible for European naturalists to entertain the prospect that humans, as well as flora and fauna, had multiple centres of origin, the Americas being one of them. Buffon declared that the indigenous fauna of North America was inferior to that of Eurasia noting that no American mammal was equal in size or strength to the elephant or hippopotamus. Thomas Jefferson stoutly debunked Buffon's degeneracy theory in his 1785 *Notes on the State of Virginia* (Dugatkin 2009, Watson 2006), noting that the excavated skeletal remains of mammoths proved that they were indigenous to North America and at least five or six times larger than an elephant. He also famously dispatched soldiers to the New Hampshire woods to capture a bull moose for Buffon to demonstrate the majesty of living American quadrupeds (Dugatkin 2009). By outspokenly defending the uniqueness of American flora and fauna, Jefferson and others helped to reinforce the self-governing spirit of the emerging nation by stating that discoveries in nature and advances in technology would reveal ways by which Americans could imagine themselves becoming independent from Britain and Europe (Magee 2007).

After the 1783 Peace of Paris confirmed the independence of the Thirteen Colonies, a more independent "scientific" approach to the study of the natural world rose from the ashes of the American Revolution (Magee 2007). While the British continued to view natural history and botanical knowledge as fundamental to their empire building enterprises, America looked to the cultures of natural history as activities essential to the development of an independent nation. As Judith Magee pointed out, "The pursuit of the study of the natural history of America was itself a patriotic activity because it described productions of the New World. The desires to explore, discover, describe, name, and classify the natural world helped serve the utilitarian principle of the age and define the character and future of the young nation" (Magee 2007). It was important for Americans

to become the philosophers, naturalists, and historians of their own national destiny, and not look to Britain or Europe for guidance. The architects of the constitution believed that natural order mirrored democratic order in the new republic. As a new century dawned, naturalists including William Bartram (1739-1823), Alexander Wilson (1766-1813), and John James Audubon (1785-1851) recounted dramatic river journeys and hunting trips collecting, sketching, and describing the young nation's wildlife, and following the Louisiana Purchase, Jefferson commissioned Meriwether Lewis and William Clark to make their way westward through the Continental divide to the Pacific Coast (1804-1806) that would redefine the country's burgeoning national identity.

Breaking Nova Scotia's intellectual and philosophical dependence on Europe, however, was entirely another matter. Half a century after the founding of Halifax, the Province still lacked a methodical system of scientific inquiry. Ironically, it was Britain's need for a reliable source of naval stores, following the American Revolution, that led Wentworth to send Smith into the wilds of Nova Scotia. This was the beginning of a process to liberate the province from the influence of European natural theories. As historian Julian Gwyn (2001) points out, until the outbreak of hostilities with the American colonies, so adequate was the New England supply of mast, spar, and topmast timbers that it never occurred to the Navy Board to look for suitable timber in Nova Scotia. However, all that changed following the forfeiture of the American Colonies. Indeed, in 1777, when the threat of invasion from New England and fears of Mi'kmaw reprisals faded, naval contractors began roaming the woods of Nova Scotia looking for timber (Gwyn 2001). In 1784, the Navy Board concluded that British shipbuilding yards would not need any supplies of masts or deck timber from Nova Scotia. This decision was reversed three years later under pressure from the Admiralty (Gwyn 2001). By 1801, the need for naval supplies became critical. This justified the principle objective of Smith's surveys outlined in Wentworth's letter to locate and record the "thickness and length of mast timber" and "the facility with which it can be removed to market," as well as identify locations for cultivating hemp used for making rope (Gwyn 2001).

Although Smith's journeys contributed significantly to the physical and ecological understanding of Nova Scotia, it was not until the founding of the Halifax Mechanics Institute in 1831 that the beginnings of an independent scientific community began to emerge.

Two years later, the government commissioned Smith to collect zoological, geological, botanical, and mineral specimens for an Institute Museum. In the fall of 1838, by which time Smith had testified before Lord Durham's Commission in Quebec City, the systematic study of the flora and fauna of Nova Scotia independent from European science had begun. Thus, Titus Smith Jr. represents a transitional link between two eras of Nova Scotian history. The first looked to England for every aspect of its social, cultural, material, political, and scientific traditions. The second saw the establishment of an increasingly independent scientific community in which Smith was an active participant during a lifetime that bridged the intersections of the Enlightenment, Romantic, and Victorian eras. At first, Smith's ideas reflected early to mid-18th century views on religion and nature inherited as an adolescent from his fundamentalist Christian father. Following his Nova Scotia journeys, however, Titus began to discover a far deeper set of rules beneath the surface of all living things. First, by using his own experiences and observations, he detected interactive networks operating within biological systems that led to his Theory of Ecological Succession (Gorham 1955). Second, and more importantly, Smith generated an alternative narrative that represented the first wave of 19th century conservational thinking by suggesting that capitalist driven industrial development was socially and environmentally destructive.

SMITH'S JOURNALS

The historian I. S. MacLaren in his study of 17th and 18th century exploration and travel writing identifies four stages of narrative development beginning with the logbook or field notebook, followed by the journal, the draft manuscript, and finally publication (MacLaren 1992). Smith's original two leather-bound notebooks, one for each of his Eastern and Western journeys, which measure 4 x 6 inches and 3 x 7 inches respectively, would have fitted neatly into his breast or back pocket. Smith seldom writes in complete sentences, uses inconsistent spelling and grammar, and a stream of consciousness style narrative that employs dashes, colons, semi-colons, and commas to break his thoughts and observations in keeping with the *en route* immediacy of his note taking. Smith also used these notebooks to record information about his other travels. As a result, many pages do not pertain

to his journeys. For example, his first notebook of his Eastern Tour covers a period of 35 years from 1801 to 1836.

When Smith returned from his Western Tour of the province on October 19, 1801, he immediately began to prepare a final report of his surveys for the Nova Scotia House of Assembly. There were two reasons for Smith's haste in doing so. The first was because of the considerable sum of money he was owed, and the second was because at age 34, he returned with the intention of marrying the 17- year- old Sarah Wisdom. Interestingly, his family members living in America noted this great difference in age. In a letter written by Titus's brother William from Litchfield, Connecticut on August 29, 1802, to their father (Smith Sr.) in Halifax, he states, "As to domestic affairs…I never supposed Titus' disposition calculated to suit, or be suited by a young girl (who are not generally much attracted with philosophy or the history of the world.) …but …supposed him to be a person who would be best suited to one who was a trifle given to thoughtfulness and a little sentimental" (Creighton n.d.). Despite the differences in age, the couple produced fourteen children. On March 9, 1802, when the Treasurer Mr. Wallace tabled Smith's journal, Titus the traveller was transformed into Titus the author, who provided an organized narrative for his intended audience, the members of the Nova Scotia House of Assembly.

MacLaren's third stage is represented by two manuscripts, in which a writer other than the traveller becomes involved and alters the ideas and descriptions of the traveller for the intended audience. The first was a transcription by Robert James Wilson's (Wilson 1857) now in the Public Archives of Nova Scotia, and the second was a reprint of Wilson's manuscript edited by Lloyd S. Hawboldt for the Nova Scotia Department of Lands and Forests, published in 1955 and titled *A Natural Resources Survey of Nova Scotia 1801-1802: by Titus Smith Jr.* (Hawboldt 1955). When compared to Smith's notebooks, both selectively delete personal anecdotes, descriptions of rivers and landscapes, settlers encountered, and the difficulties of navigating the terrain in favour of concentrating on Smith's observations about the soil, mineral, and forestry resources. MacLaren's fourth stage of travel writing–a formal publication–does not exist for the Smith journals.

LORD DURHAM'S COMMISSION

In 1838, Lord Durham arrived in Lower Canada to investigate the circumstances surrounding the rebellions of Louis-Joseph Papineau and William Lyon Mackenzie. At the time fewer than two hundred thousand people lived in Nova Scotia with Halifax counting less than 18,000 residents. Nova Scotia did have a representative government in the House of Assembly, but responsible government and municipal institutions were completely lacking. Farming, fishing, mining, shipbuilding and forestry were the chief industries. Durham's main task was to find a way to reconcile the cultural and political differences between the English and French of Upper and Lower Canada. This he finally did by recommending a modified form of responsible government and a legislative union of Upper and Lower Canada and the Maritime Provinces. The proposal was rejected by the British government, and it took 10 more years before parliamentary democracy became established.

In a series of commissions held at Quebec City beginning in 1838, Durham compiled information about the people, geography, resources, agriculture, and immigration in Lower Canada, Upper Canada, the Eastern Provinces, and Newfoundland. Durham stated in his final report that the present condition of the Eastern Provinces presented none of the alarming political features of the two Canadas, their loyalty and attachment to the Mother Country was warm and general. However, he noted that their varied and ample resources were turned to little account. His remarks on the scanty population of the Provinces were indeed bleak, many exhibiting an aspect of poverty, backwardness, and stagnation. He goes on to say that, wherever improvements are evident they result from enhancements made by American settlers and capitalists (Lambton 1839). Durham garnered his opinions from Major Head, one of his assistant commissioners sent to Nova Scotia who described the province as melancholy with lands abandoned and falling into decay. Head also commented on the fact that, like Nova Scotia, the people on Prince Edward Island permitted the Americans to take ownership of the fisheries for the sheer want of capital, and added that a merchant in Halifax told him those wealthy capitalists in the city preferred investing their money in the United States (Lambton 1839).

Durham realized that the suffering of the population and lack of industrial growth and capital venture was due to the "existing disorder

and the doubt which hangs over the future form and policy of the Government" (Lambton 1839). He realized that without government, "the development of the vast resources of these extensive territories is arrested; and the population, which should be attracted to fill and fertilize them, is directed into Foreign States" (Lambton 1839). Durham clearly understood that to create a productive economy you needed not only a stable government but a fraternity of capitalism, industry, and an educated and willing population to participate in the enterprise. "While the present state of things is allowed to last, the actual inhabitants of these Provinces have no security for person or property—no enjoyment of what they possess—no stimulus to industry … I allude to the striking contrast which is presented between the American and British sides of the frontier line, in respect to every sign of productive industry, increasing wealth, and progressive civilization" (Lambton 1839). Durham goes on to say,

> "On the American side, all is activity and bustle. The Forest has been widely cleared, every year numerous settlements are formed, and thousands of farms are created out of the waste; the country is intersected by common roads; canals and railroads are finished, or in the course of formation, the ways of communication and transport are crowded with people, and enlivened by numerous carriages and large steamboats….Good houses, warehouses, mills, inns, villages, town, and even great cities, are almost seen to spring up, out of the desert….On the British side of the line with the exception of a few favoured spots, where some approach to American prosperity is apparent, all seems waste and desolate" (Lambton 1839).

In fairness, the Americans emerged from the revolution an independent nation with a stable government and patriotic consciousness that drove them to promote useful knowledge, popularize science, and mechanize forms of manufacturing that led to the urbanization and industrialization so envied by Durham. All this while expanding west, systematically studying their flora and fauna, and developing a science independent from that of Europe that helped define their new political identity.

In September, 1838, Smith was selected by Nova Scotia's Lieutenant Governor as one of the delegates to represent the province and testify in Quebec City before Lord Durham's Commission of

General Enquiry on Crown Lands and Emigration in British North America about the natural history, geography, geology, agriculture, fishing, mineral resources, and people of Nova Scotia (Lambton and Buller 1839). This was the only time Smith left Nova Scotia since his arrival as a teenager in 1783. After informing the commission that he had travelled extensively throughout the province for the government, a reference to his surveys for Wentworth, and explaining that the Province consisted of 14 counties, the commissioners began to question Smith about each county, beginning with Digby and Annapolis. Most of the questions concerned the nature of the soil, the capabilities for agriculture, and the availability of mineral resources, particularly iron and coal. Smith stated that the lands in Digby and Annapolis were good for cultivation but not settled for want of roads, and that the lands bordering the sea were considerably cultivated. When asked about the slowness of improvement to Annapolis County, Smith replied that the general depression that had existed for a long time was slowly improving.

At the end of the interview, Smith estimated that one-half of the land in the Province of Nova Scotia was available for agricultural production and if these lands were improved, could support twice the number of inhabitants. He also commented that there was great room for improvement in the fisheries that should succeed better than the Americans who had to travel further to the rich fishing grounds. While commenting that the timber industry was in decline, Smith was positive about mineral production in the Province, commenting that more coal mines needed opening, that the grindstone business was increasing rapidly, that there was an inexhaustible supply of plaster of Paris, and that granite was being exported to the United States. Delegate after delegate from Nova Scotia gave similar opinions about the need for an increase in population and investment capital to take advantage of the natural advantages of the province—fisheries, agriculture, mining—and to develop mills and other manufacturers.

While the economic setting of Nova Scotia in 1838 did indeed seem bleak, the intellectual awakening that started on that winter evening of 1831 when Joseph Howe spoke so eloquently before the first meeting of the Halifax Mechanics' Institute about the Province's future eventually fostered a turning point in the fortunes of the Province. With industrialization driving the need for public education in Britain and America, the Institute's agenda to educate workers led to

the first public lectures by men such as Titus Smith, Jr. Dr. Thomas McCulloch, and Dr. William Grigor among others.

THE WILDFLOWERS OF NOVA SCOTIA, 1839-1840

Along with advancements in the study of astronomy, mathematics, and physics during the scientific revolution of the 17th century, there also occurred extraordinary developments in the field of natural history. As the astounding variety of unknown species flooded in from the Americas, a new commitment to describe, organize, and accurately illustrate nature marked the beginnings of modern natural history (Freedberg 2002). As botany became a science, 17th century florilegia containing magnificent hand-coloured copperplate engravings of exotic flora began to emerge marking the separation of the arts and sciences. The audience for these lavish publications were not scholars, but flower-lovers, who were not interested in plant nomenclature or detailed studies of their habitats, but who simply wanted practical information on how to cultivate them successfully. While these pleasure gardens bolstered the image of their owners, the public display of indigenous plants dispatched from foreign outpost's to be planted in the soil of the mother country also demonstrated imperial power and territorial dominion of the state. In time, plants and seeds from the margins of the known world and from the very heart of the British Empire itself "bloomed at the feet of the king" (Olwell 2005).

An early florilegium that shows the role played by botany in dominating foreign territory is Jacques-Philippe Cornut's (1606-1651) *Canadensium plantarum aliarúmque nondum editarum Historia Cui adiectum est ad calcem Enchiridion Bontanicum Parisiense Continens Indicem Plantarum, quîæ in Pagis, Silius, Pratis, & Montosis iuxta Parisios locis nascuntu* published in Paris in 1635 (Cornut 1635). Cornut was a physician in the Faculty of Medicine in Paris, where Jean Robin and his son Vaspesien curated the important faculty gardens for Henry IV. Cornut successfully exploited colonial networks of botanical correspondence and exchange by studying plant rarities that arrived from North America, including some shipped from Port Royal, Nova Scotia, via Marc Lescarbot and Louis Hébert (Dickenson 1998, Field 2019). Incorporating medical usage and horticultural information, his work reflected the growing importance of applying new scientific techniques to the study of botany. Yet he still felt

obliged to cite Pliny and Dioscorides even though neither knew of the existence of the New World. Cornut catalogued eighty-six plants chiefly from the Faculty of Medicine, including thirty from North America described for the first time. Most of them were illustrated using full-page copper plate engravings based on drawings made from living and herbarium specimens showing root, stems, leaves, flowers, and sometimes fruit (Dickenson 1998).

Published in 1840, *Wildflowers of Nova Scotia* (Morris and Smith 1840) was the first provincial florilegium and is important on several levels. First, it successfully combines an ecological perspective of each plant written by Smith rather than a simple description. This was accompanied by an accurate scientific illustration of each species rendered by Morris from living specimens. Secondly, its publication represents the culmination of Smith's lifelong efforts to educate the public about the natural history of the province, and thirdly, it is also one of the first systematic studies of the flora of Nova Scotia independent from European and British influences. The collaboration between Titus Smith Jr. and Maria Morris (1810-1875), who later married and took the name Miller, to produce this work was part of a widespread trend during the first half of the 19th century that saw the naturalists' task of description and classification becoming inseparable from accurate visual representations (Bolzoni 2008). The 1840 edition of *Wildflowers of Nova Scotia* is a superb example of this development. Morris followed a long line of female botanical illustrators, stretching back to the 17th century, who worked directly from nature in conjunction with naturalists who supplied textual descriptions (Tosi 2008). As the title page indicates, Maria Morris "executed from nature the full size of the blooms" that were "accompanied by information on the history, properties, &c., of the subjects by Titus Smith" (Morris and Smith 1840).

Maria Morris was born circa 1810 in Country Harbour, Nova Scotia, and moved to Halifax after the death of her father in 1813. According to her entry by Charles Bruce Fergusson in the *Dictionary of Canadian Biography*, Morris studied painting under Professor L'Estrange, a visiting British artist, and drawing under W. H. Jones, a Bostonian who taught at Dalhousie College. In 1830, she opened a school to instruct young women in drawing and painting. Six years later, the North British Society of Halifax honoured her as "Painter of

the Year." Shortly thereafter, she was encouraged by Titus Smith, Jr. to produce watercolour paintings of the native flora of the province. In 1840, under the patronage of the governor, Sir William Campbell, C. H. Belcher and John Snow of London, and A. W. MacKinley of Halifax, Morris published six lithographs of her botanical illustrations with scientific descriptions and habitat notes of each plant by Titus Smith Jr. Following Smith's death in 1850, her London publisher issued a second series of lithographs in 1853, this time with scientific notations by Alexander Forrester, followed by a third series in 1866 with notes by George Lawson, the Edinburgh-trained botanist who founded the Botanical Society of Canada.

The six wildflowers illustrated in the 1840 series include the Mayflower (Plate 1: *Epigoea repens*), Pigeon-berry (Plate 2: *Cornus canadensis*), White Pond lily (Plate 3: *Nymphoea odoraton*), Indian Cup (Plate 4: *Sarracenia purpurea*), Tree Cranberry (Plate V: *Viburnum opulus*), and Indian Hemp-Milkweed (Plate 6: *Asclepias syriaca*). Smith's ecological notes for each flower provide a description, habitat, occasional anecdotes, and personal comments. In his entry for the Mayflower (Plate 1) for example, he states, "This neat little flower grows in healthy grounds, in woods, and in turfy soil. Its delicate tints, and delicious perfume, make it a general favorite. Its name is connected with a custom of repairing to the Wodds [woods] on a "May Morning," for the purpose of gathering specimens of this earliest of Nova Scotia wild flowers" (Morris and Smith 1840).

SMITH'S PHILOSOPHY OF NATURE

Today, we face a disappearing world. We are witnessing the complete collapse of ecosystems that go back thousands of years, as the seemingly irrevocable consequences of fossil fuel pollution overwhelms the climatic and environmental integrity of the planet, dramatically transforming the traditional economic, social, and ritual significance of everyday life. With the increasing impact of these changes, a host of scientific, government, community-based, and individual efforts have been implemented to save the planet. However, as much as this crisis is perceived as a modern development, it ignores the passionate environmental views expressed by past individuals and groups about the destructive influences of industrialization on nature and society. Like Smith, many openly expressed reservations about the

unchecked exploitation of nature for profit, and the destruction of old growth forests to fuel the fires of industry.

Smith was correct in his belief about the deep ties linking humans and nature stating that "whenever man neglects the dictates of nature, he is sure to suffer" (Smith 1835). What Smith did not understand, however, was that, if God inscribed the search for knowledge on the human heart, why were there so many crimes directed against the natural world? Importantly, Smith's philosophy of nature was not isolated from the mainstream environmental thought of his day. His concerns about the growing conflict between humans and nature paralleled the thinking of other North American naturalists during the 19th century including Susan Fenimore Cooper (1813-1894), the daughter of James Fenimore Cooper. Her book, *Rural Hours* that appeared in 1850, the same year Smith died, is the first major work of American literary environmentalism that anticipated and influenced Thoreau's *Walden* (Walls 2009). Cooper also framed her beliefs on the notion that nature represented the manifestation of God's design, which provided humankind with the ability to shape and cultivate the wilderness. More importantly, she believed the human social community was situated within the larger context of the shared ecological community, thereby linking changes in one to alterations in the other. And like Smith, Cooper expressed the same pointed critiques about the destructive influences of industrial capitalism on society and nature that Smith did two decades earlier (Walls 2009).

Cooper's solutions to counter the excessive exploitation of nature for profit were also the same as Smiths—knowledge and a community-based ecology where people experienced nature through connection and direct engagement with their local environment. Thus, if people knew more about their natural world, they might approach it with more respect and less greed. According to Laura Walls, "Cooper's writings are an extended argument 'for a sustainable balance' between culture and nature, approached through an ecological awareness that actions have unanticipated consequences" (Walls 2009). Essentially, this is the same message Smith presented in his lecture on natural history to his Mechanics' Institute audience in January 1835. Smith concluded, "The accounts we so frequently receive of the distress of the manufactories appear to prove that more hands are employed in them than there ought to be. …many among us, who might have supported themselves by agriculture, are now suffering from the

failure of projects for acquiring wealth, in which they would not, perhaps, have been engaged, but for the same disposition to follow the beaten track, and to trust the supposed wisdom of others…" (Smith 1835).

Finally, it seems we have come full circle. Just as Smith forewarned, the specter of humankind's accumulated transgressions against nature haunt the 21st century. Along with his travels, his experimental gardens, his exchange of plant specimens with European correspondents, his testimony before Lord Durham's Commission, and his popular articles on agriculture and nature, Smith was inextricably linked to the forces behind the emergence of a new provincially-based natural science and the very beginnings of a unified Canada. More importantly, Smith's environmental advocacy and natural philosophy not only represented the first wave of 19th century environmentalism but also facilitated the historical beginnings of the environmental movement in Nova Scotia to create a sustainable society in balance with the global forces of nature. Ironically, Smith's proposed utilitarian approaches to land use and agriculture that challenged the wisdom of a society organized around extensive manufacturing, and his rejection of the rampant exploitation of natural resources for profit, seem almost as radical today as they did during his lifetime.

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