

# Cholera, the “Sawdust Menace,” and the River Doctor: How Fear of an Epidemic Triggered Canada’s First “Pollution” Controversy

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*A probe of nineteenth-century newspapers and other sources has revealed that it was an effort to prevent a cholera epidemic in the Province of Canada in 1866 that sparked a landmark controversy over sawdust dumping in the Ottawa River, Canada’s first major battle over industrial pollution. Ottawa’s newly appointed medical officer of health, Dr. Edward Van Cortlandt, was a leading figure that year in shaping both the city’s and the colony’s strategies to combat a feared cholera outbreak when he sounded alarms about the harmful impacts on fish, navigation, and human health of sawdust waste emanating from the famous Chaudière Falls lumber mills just upstream from Parliament Hill. This previously unidentified trigger to the “sawdust question”—the only explicitly “environmental” issue raised during the Confederation debates as well as the start of a 40-year struggle over sawmill “offal” in the Ottawa and across the country—represents an important intersection in the early histories of the Canadian conservation and public health movements. The cholera-sawdust connection is also noteworthy as the first high-profile case in Canada in which the word “pollution” was used in its primary modern sense. Thus, this study also constitutes a Canadian contribution to a significant body of scholarship in the U.K. and U.S. on the mid-nineteenth-century emergence of a pointedly environmental meaning for this societally transformative term.*

*Comme le révèle un sondage effectué dans les journaux et autres sources du XIX<sup>e</sup> siècle, une tentative de prévention d’une épidémie de choléra dans la province du Canada en 1866 souleva une controverse mémorable à propos du déversement de sciure de bois dans la rivière des Outaouais. Ce fut la première grande bataille au Canada en matière de pollution industrielle. Le Dr Edward Van Cortlandt, qui venait d’être désigné comme responsable de la santé publique à Ottawa, joua cette année-là un rôle de premier plan dans la conception des stratégies tant*

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*de la ville que de la colonie pour combattre l'écllosion redoutée du choléra. Il sonna en effet l'alarme à propos des effets nocifs sur le poisson, la navigation et la santé du bran de scie déversé par les célèbres scieries des chutes de la Chaudière, tout juste en amont de la Colline du Parlement. Ignoré jusqu'à ce jour, cet élément déclencheur de la « question de la sciure de bois » fut le seul problème manifestement de nature « environnementale » soulevé pendant les débats de la Confédération. Ce fut aussi le point de départ d'une lutte de 40 ans contre les « déchets » des scieries dans la rivière des Outaouais et partout ailleurs au pays, lutte qui représente un croisement important dans les débuts du mouvement de défense de l'environnement et dans celui de la santé publique au Canada. Le lien entre choléra et sciure de bois se distingue également comme le premier cas à avoir attiré l'attention au pays dans lequel le mot « pollution » a été utilisé au sens actuel. Par conséquent, la présente étude constitue aussi une contribution du Canada à un important corpus de travaux savants menés au Royaume-Uni et aux États-Unis sur l'émergence, au milieu du XIX<sup>e</sup> siècle, d'une acception propre à l'environnement de ce mot symbole de l'évolution de la société.*

THE REPEATED CHOLERA outbreaks of the nineteenth century and the battles over sawdust pollution during the second half of the 1800s have each been closely studied by Canadian historians—the former phenomenon as the key driver in the origin of the country's public health system, the latter as Canada's prototype environmental controversy.<sup>1</sup> While the two issues clearly overlap on the timeline of Canadian history, there has not been any demonstrated linkage between the two—no interpretation in which the contemporaneous “visitations” of cholera and rising concerns about sawdust dumping were seen as somehow interwoven. This study reveals a previously undocumented connection between these issues and shows how a feared cholera epidemic in Ottawa on the cusp of Confederation was, in fact, the trigger for what would become that city's—and the country's—long-running, precedent-setting struggle over the impact of sawmill waste on waterways, wildlife, and human health. The controversy played out most conspicuously within the political and geographic context of a fledgling capital city sharing its Ottawa River home with one of the world's largest lumber-mill complexes. Similar disputes would arise in many places across post-Confederation Canada,<sup>2</sup> but the uproar over sawdust “pollution” on the Ottawa helped propel the mid-nineteenth-century redefinition of that term—a change in common diction then occurring in Britain and the U.S., as well—to connote a primarily environmental

1 On cholera, for example, see Geoffrey Bilson, *A Darkened House: Cholera in Nineteenth-Century Canada* (Toronto: University of Toronto Press, 1980) and Christopher Ruddy and Sue C. Sullivan, *This is Public Health: A Canadian History* (Ottawa: Canadian Public Health Association, 2010). On sawdust, for example, see R. Peter Gillis, “Rivers of Sawdust: The Battle over Industrial Pollution in Canada, 1865-1903,” in David Freeland Duke, ed., *Canadian Environmental History* (Toronto: Canadian Scholars' Press Inc., 2006); Jamie Benidickson, *The Culture of Flushing* (Vancouver: University of British Columbia Press, 2007); John P.S. McLaren, “The Tribulations of Antoine Ratté: A Case Study of Environmental Regulation of the Canadian Lumbering Industry in the Nineteenth Century,” *U.N.B. Law Journal* 33 (1984).

2 McLaren, “The Tribulations of Antoine Ratté,” pp. 206, 215.

rather than moral meaning. This study’s newfound intersect between the 1866 spike in public fear over a looming cholera epidemic and the emergence of the sawdust issue as a local-cum-national controversy highlights the ways in which such problems—often conceptualized as separate “social” and “environmental” concerns, even today—are not, in fact, easily separated. Nor were such concerns always so neatly compartmentalized in the past, as evinced by this case study from the dawning days of the country itself, when a perceived public health emergency and an incipient water-quality crisis coalesced to begin altering the perception and vocabulary of contamination in what might be characterized as a classic “Mary Douglas moment”—an abrupt reconceptualizing of a type of “dirt,” in the phrasing of the influential British anthropologist and pollution theorist, by a community under exceptional strain and facing adverse circumstances.<sup>3</sup> What emerges is an intriguing new point of convergence in the early histories of the Canadian public health and Canadian conservation movements—storylines that come together in a “landmark” letter sent by Dr. Edward Van Cortlandt, Ottawa’s senior medical officer of health, to Alexander Campbell, the Province of Canada’s Commissioner of Crown Lands, on May 30, 1866.

#### **A Missive Sent to Protect the River—And Human Health**

Van Cortlandt, a Newfoundland-born physician educated in Quebec City and London, England in the 1820s and early 1830s, had arrived in Bytown (renamed Ottawa in 1855) just after the 1832 cholera epidemic and prior to the next one in 1834, during which he clashed with older doctors in the community over what he viewed as their haphazard response to the crisis and distinguished himself as the most alert detector of the disease.<sup>4</sup> He went on to become a leading surgeon, coroner, and medical officer of health in Canada’s capital before his death at age 70 in 1875. In 1866 he served as a key figure in shaping cholera-prevention measures for both the City of Ottawa and the Province of Canada.

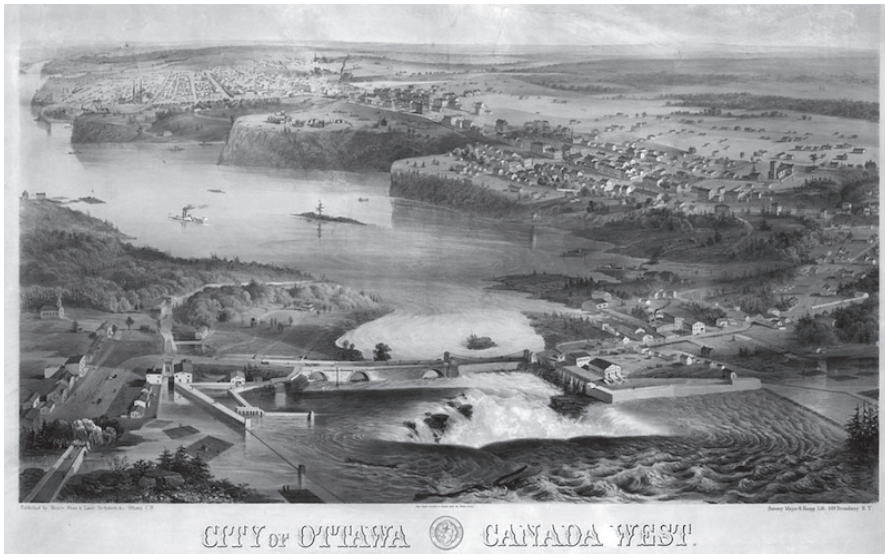
Previous studies have identified the May 1866 letter written by Van Cortlandt as the catalyst to what would become a 40-year controversy over sawdust pollution on the Ottawa River and throughout the Dominion of Canada.<sup>5</sup> In his missive to Campbell’s Crown Lands department of the pre-Confederation Province of Canada (present-day Ontario and Quebec), overseer of the colony’s forestry industry, fisheries, and navigable rivers, Van Cortlandt urged that “action be taken to restrain mill owners from throwing saw dust, bark, blocks, etc., into the Ottawa River, not only on account of the destruction to navigation and the fisheries, but also in a sanitary point of view.”<sup>6</sup>

3 See Mary Douglas, *Mary Douglas Collected Works* (London: Routledge, 2002), p. 36. A more fulsome discussion of this framing of the cholera-sawdust-pollution connection follows.

4 Bilson, *A Darkened House*, p. 80.

5 See Gillis, “Rivers of Sawdust,” p. 267, and R. Peter Gillis, “Early Federal Regulatory Records as Potential Sources for the History of Science and Technology in Canada: The Case of the Sawdust Pollution Files, 1866-1902” in R.A. Jarrell and N. R. Ball, eds., *Science, Technology and Canadian History* (Waterloo: Wilfrid Laurier University, 1980), p. 63. See also: Benidickson, *The Culture of Flushing*, p. 43; McLaren, “The Tribulations of Antoine Ratté,” pp. 203-259, 216.

6 Fred H.D. Vieth, Department of Marine and Fisheries, “Report on the Departmental File of Correspondence ... on the subject of the Depositing by the Mill Owners of the Ottawa and its tributaries



**Figure 1.** An artist's bird's-eye view of Ottawa-Hull from 1858, looking east along the Ottawa River, showing the Chaudière Falls (still largely in their natural state); developments around the falls related mainly to the square-timber trade that preceded the rise of the sawn lumber industry; the future Parliament Hill (top left), a military compound set to be transformed into the site of a legislative precinct following Queen Victoria's choice of Ottawa as capital.

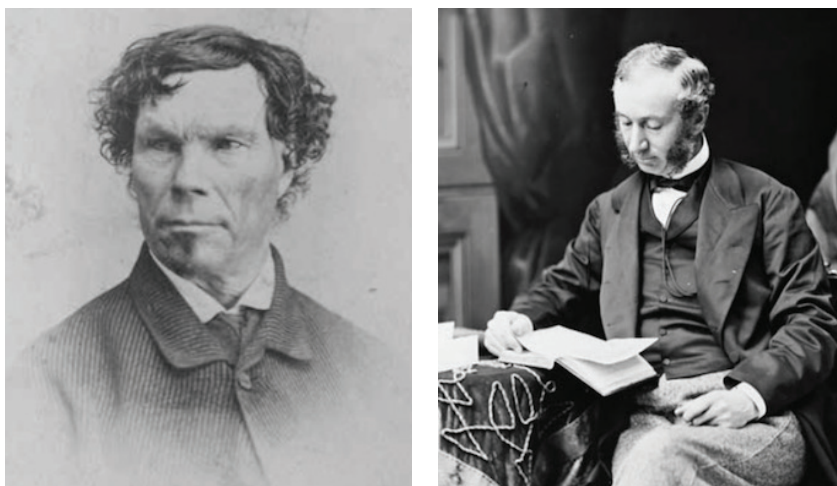
Source: Stent & Laver, "City of Ottawa, Canada West," Library and Archives Canada, MIKAN 2837391

What precisely Van Cortlandt meant by "a sanitary point of view" has never been closely examined by scholars, who have nevertheless written extensively about the doctor's letter to Campbell as a foundational document in Canadian environmental history. A reconstruction of the circumstances that prevailed in Ottawa at the time the letter was written, however, leaves no doubt that Van Cortlandt—in his dual capacity as the city's senior medical officer of health and member of the Province of Canada's special medical committee on cholera—viewed the sawdust-strewn Ottawa River as both a degraded source of drinking water and a potential breeding ground or local conduit for the dreaded disease.

Van Cortlandt's three-fold rationale for seeking an effective prohibition on the dumping of sawmill waste in the river—to ensure unobstructed boat traffic, to protect fish habitat and to safeguard human health from tainted water, and rotting accumulations of wood waste—has been described by forestry historian Peter Gillis and others as a watershed moment in Canadian environmental history. Here was "the first salvo in a battle which was to endure (for) the remainder of the 19<sup>th</sup> century," Gillis stated in a 1980 paper documenting his discovery, at the national archive in Ottawa, of an 1894 overview of nearly 30 years of accumulated federal

of Mill Offal and Sawdust... from 1866 to the present date (1894)...", and "Digest of Papers between 1866 and 1880", Library and Archives Canada, Record Group 23, Vol. 257, file 1669, parts 1 and 2. The original letter is believed to have been destroyed by an 1897 fire in West Block of Parliament Hill that consumed early fisheries department records. See McLaren, "The Tribulations of Antoine Ratté," p. 215.

files on the sawdust issue. In a subsequent article that more thoroughly examined the Confederation-era fight over sawdust pollution, Gillis counted the Van Cortlandt letter of 1866—its contents known today only from the 1894 “digest” because of the original’s destruction by fire—among the founding documents of the “early conservationist impulse in Canada.”<sup>7</sup> He asserted that Van Cortlandt’s three-pronged plea for strict enforcement of water-protection regulations that had recently been put in place by Campbell’s department “broadened the basis of support for government action on sawdust dumping beyond sport fishermen and, indeed, it set forth the exact concerns that would be espoused by anti-pollution advocates through to 1902.”<sup>8</sup>



**Figure 2.** Dr. Edward Van Cortlandt, left, a naturalist and the City of Ottawa’s medical officer of health in 1866; and Father of Confederation Alexander Campbell, the Province of Canada’s Commissioner of Crown Lands from 1864-1867.

Sources: (Van Cortlandt) Elihu Spencer, 1864, Bytown Museum, P4271; (Campbell) William James Topley, 1869, Library and Archives Canada, MIKAN 3496771.

Van Cortlandt’s kickstarting of the Ottawa River sawdust battle, environmental historian Jamie Benidickson has also observed, constituted “a landmark early attempt to consolidate a range of community concerns over industrial interference with water quality.”<sup>9</sup> Legal scholar John P.S. McLaren similarly cited the Van Cortlandt correspondence as the first clear indication that “the conflict between the lumber interests and other users of Canadian waterways over their progressive

7 McLaren observed that the sawdust issue, as it played out during the post-Confederation years, “provides a microcosm of the steps which a new nation with a federal structure had to take to address the adverse realities of industrialization.” *Ibid.*, p. 206.

8 Gillis, “Rivers of Sawdust,” p. 268.

9 Benidickson, *Culture of Flushing*, p. 43.



despoliation was intensifying” on the eve of Confederation, “and would inevitably generate greater public interest” in the years that followed. Indeed, it did.<sup>10</sup>

Van Cortlandt’s letter to Campbell represented the intersection of two men who, in the 1860s, were being influenced by changing perspectives on the natural environment and were also contributing to that change. It would be overstating the case to suggest their attitudes amounted to anything like a robust “environmentalist” ethic; the lingering idea that colonial Canada’s forests, fisheries, waterways, and other natural resources were essentially “inexhaustible” gifts from God, to be used (and abused) as necessary to support settlement and economic development, was still too large a part of British North American consciousness in the mid-nineteenth century to permit a worldview in which nature’s limits might be fully appreciated. It can be demonstrated, however, that Campbell and Van Cortlandt were among the vanguard of Canadians who showed signs of recognizing, by the time of Confederation, the need to work against the unchecked destruction of nature and to attempt some balance of competing interests—namely economic development, human health, and conservation—in resolving complex resource issues.

Campbell, in his role as superintendent of the Province of Canada’s natural resources between 1864 and 1867, has been recognized by Gillis for expressing “the first definite conservationist attitude in Canadian public policy”<sup>11</sup> when, in 1865, he urged the adoption of sustainable forestry practices, such as rotational cutting, pioneered in Scandinavia. Campbell, described elsewhere as “obviously conservation-minded”<sup>12</sup> and “a guiding spirit in securing early conservation measures,”<sup>13</sup> had also strengthened fisheries regulations in 1865<sup>14</sup> to explicitly prohibit the dumping of “sawdust or mill rubbish” in “any stream frequented by salmon, trout, pickerel or bass”—the new restriction pointed to by Van Cortlandt the following year when he urged that the tough-sounding law be backed up by enforcement action against Ottawa’s mill owners. Campbell’s respective fisheries chiefs in Canada West and Canada East, W.F. Whitcher and Richard Nettle, have been recognized by historians for pressing Campbell to support such conservation efforts, aimed specifically at protecting salmon fishing in the Province of Canada but more broadly at safeguarding water quality and sustainable habitats for all fish species throughout the colony.<sup>15</sup>

Van Cortlandt’s formulation of the sawdust problem as a health threat not only to people—particularly in a time of cholera—but also to fish and, by extension, other species in the aquatic food chain may be explained by a closer look at this physician-naturalist of exceptionally diverse interests. He was involved in

10 McLaren, “The Tribulations of Antoine Ratté,” p. 216.

11 R. Peter Gillis and Thomas R. Roach, *Lost Initiatives* (Westport, CT: Forest History Society, 1986), p. 30.

12 Richard Lambert with Paul Pross, *Renewing Nature’s Wealth* (Toronto: Ontario Dept. of Lands and Forests, 1967), p. 157.

13 Gillis, “Rivers of Sawdust,” p. 268.

14 *Debate on the Fisheries Bill of the Hon. Alex Campbell*, Commissioner of Crown Lands, Quebec: Daily News Printing Office, 1865.

15 Lambert and Pross, *Renewing Nature’s Wealth*, p. 151; Darcy Ingram, *Wildlife, Conservation and Conflict in Quebec, 1840-1914* (Vancouver: UBC Press, 2013), p. 56.

numerous scholarly organizations, such as the Bytown Mechanics Institute and Athenaeum, Ottawa Silurian Society, Ottawa Natural History Society, and Ottawa Naturalists’ Field Club.<sup>16</sup> His extensive experience as a medical practitioner along with his interest in recreational angling and his wide-ranging activities as an early Ottawa naturalist—from his publication of the first inventories of Ottawa Valley fish species and other wildlife, to his pioneering reports on the region’s geological features and natural resources—all appear to have coalesced to prompt his historic expression of concern to Campbell about the health of the Ottawa River in May 1866, at the height of that year’s cholera scare.

The sawdust issue would remain unresolved until the twentieth century. It was not until 1903, when holdout Chaudière Falls lumberman J.R. Booth finally, though not with absolute consistency,<sup>17</sup> began complying with regulations prohibiting sawdust dumping in the Ottawa River, that the controversy could reasonably be described as laid to rest. While various published reports, Parliamentary transcripts, and certain other documents from the 1860s to the early 1900s have provided auxiliary evidence of how the sawdust controversy unfolded during those years, the loss of the bulk of the era’s original fisheries files has kept analysis of this seminal Canadian environmental regulatory issue somewhat reliant on the cursory chronicle contained in the surviving 1894 digest. A close examination of newspaper articles, Minutes of Ottawa City Council, and other sources from the earliest days of the sawdust debate have revealed, among other things, the previously overlooked but understandable spark to the issue: the mounting cholera panic in the winter and spring of 1866 and the rush to impose emergency sanitary measures in Canada’s new capital.

### **A “Terrible Scourge”—And a Frustrating Medical Mystery**

In the spring of 1866, British North America was bracing for the latest in a series of global cholera epidemics that had, since the initial outbreak in 1832, repeatedly challenged the colonies’ capacity to prevent the introduction of the deadly infection via transatlantic passenger ships, contain the spread of the illness once it had reached the continent’s shores, and provide effective treatment to those stricken by what was, through most of the 19<sup>th</sup> century, a deeply frustrating medical mystery. Terrifyingly swift yet unpredictable in its geographic trajectory and precise local impacts, cholera’s enigmatic nature prompted fierce debates and considerable conjecture among Victorian-era physicians, scientists, and sanitary

16 Several recent articles by this author have documented Van Cortlandt’s significant contributions to the nineteenth-century study of Canadian nature and archaeology. See Randy Boswell, “New Light on the Origins of the Ottawa Field-Naturalists’ Club,” in *The Canadian Field-Naturalist*, Vol. 129, No. 2 (April-June 2015), pp. 207-213; Boswell and Jean-Luc Pilon, “The Archaeological Legacy of Dr. Edward Van Cortlandt,” in *Canadian Journal of Archaeology*, Vol. 39, No. 2 (2015), pp. 294-326; Pilon and Boswell, “Below the Falls: An Ancient Cultural Landscape in the Centre of (Canada’s National Capital Region) Gatineau,” in *Canadian Journal of Archaeology*, Vol. 39, No. 2 (2015), pp. 257-293.

17 There is evidence the Booth mills continuously or periodically flouted the law for many more years. See, for example, “Still Dumping in Sawdust—Accusations against Chaudière Mills—Is it Booth’s?—Early Morning Sight on Ottawa River Very Ugly,” *Ottawa Citizen*, June 28, 1907, p. 1. The story quotes a Booth employee describing how sawmill “refuse is drawn by the wagon load and dumped into the river” up to eight times a day.

reformers—the proto-“public health” advocates of the time—over its possible causes and modes of transmission.<sup>18</sup> Was it spread through contagion, direct contact with an infected person or, perhaps, a victim’s bodily fluids? Was “Asiatic cholera,” as it was commonly known, always transported from afar? Could it, as some suspected, ferment spontaneously in “putrid” Canadian locales, rising from poorly maintained cesspools or heaps of rotting garbage, including discarded plant and animal matter, before drifting across cities as deadly “miasmatic” vapours in the humid summer air? Or was tainted drinking water the true vector of infection—befouled lakes, ponds, rivers, creeks, wells, or cisterns? This epidemiological uncertainty prevailed for decades before research by the German scientist Robert Koch and the gradual embrace of the germ theory after the 1880s finally established a consensus that cholera’s often-fatal effects—extreme dehydration and diarrhea, which killed roughly half of all those stricken by the sickness in the nineteenth century—were caused by the bacterium *vibrio cholera*. Upon each outbreak, the infection would first spread internationally from southern climes, then domestically within northern nations through the ingestion of infected human waste, typically via feces-fouled sources of drinking water.

Given the mid-nineteenth-century context of confusion regarding the true nature of “this terrible scourge,”<sup>19</sup> it is logical that concern would arise in Canada and elsewhere in 1866 about the possibility that impure waters of rivers and streams running through major urban centres—including waterways choked with discarded sawdust, accumulating and decaying in thick beds in shallow bays—might cause or spread the cholera infection.

Ottawa was located at the confluence of three major rivers, the Ottawa, Rideau and Gatineau. It was bisected by the Rideau River-fed Rideau Canal and then, again, on the city’s East side, by the By-Wash, a ditch-like, sewage-filled offshoot of the canal that flowed until the mid-1870s through today’s Byward Market and elsewhere in Lowertown before discharging back into the Rideau, close to that river’s outlet into the Ottawa at the famed Rideau Falls. Naturally, as the city prepared for the latest expected visitation of cholera in 1866, some attention would be turned to Ottawa’s waterways as potential sources or spreaders of the scourge.

Conversely, we know from one of the most important documents in Ottawa’s history—the city’s 1857 “memorial” to Queen Victoria, which convinced her to select Ottawa as Canada’s capital—that the perceived purity of the Ottawa River at that time was believed by civic leaders to help protect its citizens from disease, including cholera:

... the City of Ottawa stands unrivalled on the continent of America for the beautiful and romantic scenery of its rivers, cascades and mountains, yielding not only pleasure to the eye but keeping the atmosphere in so healthy a state that Ottawa has

18 Bilson, *A Darkened House*, p. 4; Geoffrey Bilson, “Canadian Doctors and the Cholera,” in S.E.D. Shortt ed., *Medicine in Canadian Society: Historical Perspectives*, (Montreal: McGill-Queen’s University Press, 1981), pp. 115-136.

19 *Memorandum on Cholera, Adopted at a Medical Conference held in the Bureau of Agriculture, in March, 1866*, reporter Dr. J.C. Taché, 1878 printing, Ottawa: Bureau of Agriculture and Statistics, 1878, p. 3.



hitherto been comparatively free from those epidemics—cholera and fever—that have so fearfully devastated other cities of Canada.<sup>20</sup>

But rivers were not always wellsprings of health and happiness, especially as the cities along them grew ever more crowded with people and factories during the Victorian era’s steady urbanization and industrialization. The groundbreaking investigations undertaken in the late 1840s and early 1850s by the British doctor and pioneer epidemiologist John Snow appeared to show clearly that cholera’s terrible toll on London during that era could be traced almost exclusively to feces-contaminated sources of drinking water, drawn directly by the Southwark and Vauxhall waterworks company from a stretch of the River Thames immediately downstream of a major sewage outlet.<sup>21</sup> “Rivers always receive the refuse of those living on the banks,” Snow had observed, “and they nearly always supply, at the same time, the drinking water of the community so situated.”<sup>22</sup> In the second part of Snow’s famous study, which is generally viewed as foundational to the field of epidemiology, he determined that feces-fouled ground water had been tapped by the Broad Street Pump—a communal source of drinking water that had been contaminated below ground by a leaky residential cesspool located close to the public well.

Snow was quite correct in his conclusion that cholera was spread via feces-fouled drinking water. But this theory was not universally embraced before his death in 1858. Koch’s discoveries in the 1880s made clear that the invisible, ill-defined “poison” Snow believed was breeding cholera in London’s water sources was in fact an identifiable microorganism or “germ” that could be seen under a microscope. Yet even that finding did not put an end to the belief among many experts that vague atmospheric forces or “noxious exhalations” from organic matter remained the more likely causes of cholera.<sup>23</sup>

### **Cholera, Sawdust, and “The Insalubrious Effects on the Water of the Ottawa”**

As early as the fall of 1865, news spread that the world was in the midst of yet another of the numerous cholera epidemics it had suffered during in the nineteenth century. The mysterious, deadly infection was again poised to reach the shores of North America, as it had in 1832, 1834, 1849, 1851, and 1854. Cities throughout British North America and the United States began planning precautionary measures against a disease only vaguely understood to be caused by or spread through human contact with “filth”-ridden rubbish heaps, foul-smelling air—miasmatic “vapours” or “exhalations” in the language of the day—or impure

20 “Address to the Queen Setting Forth the Claims of Ottawa,” p. 43, in *Reminiscences Revived on the Fiftieth Anniversary of the Selection of Ottawa as the Capital of Canada by Her Late Majesty*, by R.W. Scott, Ottawa: The Mortimer Company, 1907.

21 John Snow, *On the Mode of Communication of Cholera*, 2<sup>nd</sup> edition, London: John Churchill, 1855; George Davey Smith, “Behind the Broad Street Pump: aetiology, epidemiology and prevention of cholera in mid-19<sup>th</sup> century Britain,” *International Journal of Epidemiology*, Vol. 31, 2002, pp. 920-932.

22 Snow, *Mode of Communication*, p. 124.

23 Owen Whooley, *Knowledge in the Time of Cholera: The Struggle Over American Medicine in the Nineteenth Century*, (Chicago: University of Chicago Press, 2013), p. 7.

water, contaminated drinking supplies, sewage runoff, swamps and stagnant pools.<sup>24</sup>

In December 1865, for example, the Toronto *Globe*'s correspondent in the capital insisted that, "sanitary reforms are needed in Ottawa... particularly at a time when the Province is threatened with the visitation of cholera during the ensuing summer."<sup>25</sup> A *Globe* column earlier that month about Ottawa's sanitary challenges had also noted that a clean, sufficient supply of drinking water "is sadly wanted here," since many an "unfortunate consumer" served by water carriers drawing supplies from the Ottawa below the lumber mills of Chaudière Falls "has the pleasure of knowing that into his drink enters a certain portion of the filth which must find its way into the river from the city and also from Victoria Island", the principal site of the Chaudière sawmills.<sup>26</sup>

Throughout the early months of 1866, Ottawa newspapers printed numerous articles, editorials, and letters detailing cholera's mounting toll in Europe and the West Indies, predicting its imminent arrival on the mainland of the Americas, bemoaning the dismal state of sanitation in Ottawa, and urging local officials to ready the capital for the coming medical crisis. "That the city is at present in an unhealthy condition is patent to every one," wrote Dr. Walter J. Henry in a letter published on New Year's Day, 1866. "The correspondent of the *Globe* makes it a prominent subject in one of his recent letters," he continued, emphasizing the special sting of having the Toronto-based publication spotlighting Ottawa's sanitary problems. "A meeting of medical men should be held to consider the matter."<sup>27</sup>

It is worth noting that Ottawa residents were particularly conscious of the sanitation shortcomings and the poor general state of their city's infrastructure, including roads and sidewalks, in the winter of 1865-66. This was a time when hundreds of Province of Canada civil servants were relocating to Ottawa from Quebec City—where the colonial government had been headquartered since 1859—ahead of the scheduled June 8, 1866 opening of Ottawa's only session of the provincial legislature before the just-completed Parliament Buildings became home to the new Dominion government in July 1867. Already under pressure from local newspapers to ready Ottawa for the influx of bureaucrats, legislators, and their families, City Council faced the added responsibility of trying to prepare the capital, as urged by Henry, for the probable onset of cholera. City Council's health committee convened a February 20 meeting of Ottawa doctors<sup>28</sup>, to begin planning the capital's response to an epidemic expected to arrive after spring rains

24 Bilson, *A Darkened House*; Whooley, *Knowledge*; Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866*, (Chicago: University of Chicago Press, 1962).

25 "Gossip from Ottawa," *The Globe*, Dec. 28, 1865, p.1

26 "Correspondence from the Capital," *The Globe*, Dec. 11, 1865, p. 2. Ottawa's population in 1866 was 17,735, having more than doubled since the mid-1850s. The first, rudimentary water pipes were installed in 1865. A full waterworks system was not built until 1874. Between the 1850s and 1870s, many residents relied on "river water sold at 35-50 cents for a small barrel." See C. J. Bond, "Degradation of the Ottawa River," in *Proceedings, Ottawa River Conference*, organized by Pollution Probe at Carleton University, Ottawa, June 12-13, 1970, pp. 9-10.

27 "Correspondence," *The Daily Union*, Jan. 1, 1866, p. 2.

28 The meeting was chaired by Dr. Van Cortlandt, with Dr. Henry serving as secretary.

and summer warmth brewed ideal conditions for spreading death. On March 2, the special committee of “medical gentlemen,” headed by Van Cortlandt, delivered a report to Council outlining the sanitary strategy to be pursued in the city. The report included provisions that “the greatest care be observed in the removal of the night soil, so that it may not interfere with the water supply of the city,” that slaughter houses be banned within city limits, that garbage dumps and outhouses be cleaned and disinfected, that the By-wash creek running from the Rideau Canal through Lower Town be deepened and its banks shored up to prevent leakage into homes and the escape of “noxious exhalations,” that “a proper state of sewage” be achieved throughout the capital, and that medical officers of health be appointed to oversee all sanitary measures until the cholera threat passed.<sup>29</sup>

Despite this apparent sense of urgency, an impatient *Times* claimed three weeks later that the imminent arrival of cholera was being comparatively ignored by the city at a time when Canada’s military was energetically preparing for possible battle with U.S.-based Fenian revolutionaries bent on Irish independence, a threat that proved well-founded when the attack on Canada came in June. The Fenian attack had the effect of reinforcing support for Confederation. But on March 21, the *Times* was still warning that “while the protection of the city from violence from without is being attended to, the measures recommended for the preservation of its internal health should not be neglected. We believe we have much more to fear from a visitation from the cholera or other epidemic, than from a Fenian invasion.”<sup>30</sup>

Meanwhile, the colonial government had been moving forward with its own, overarching plan to defend Canada’s towns and cities against the epidemic. Under the authority of the colony’s agriculture minister, Thomas D’Arcy McGee, whose department was responsible for managing public health issues, nine of the province’s leading physicians, Van Cortlandt the most senior among them, had been invited to a March 17-23 conference in Ottawa to produce a broader action plan for combatting cholera. The resulting memorandum was to be printed and distributed throughout the Canadas (i.e. present-day Quebec and Ontario). Steps were also taken to appoint virtually the same group of physicians, including Van Cortlandt, to a temporary Central Board of Health that would meet periodically throughout the year, establish quarantine stations, advise local governments on sanitary measures, and coordinate the overall public health strategy until the epidemic danger had passed, presumably by late fall of 1866.

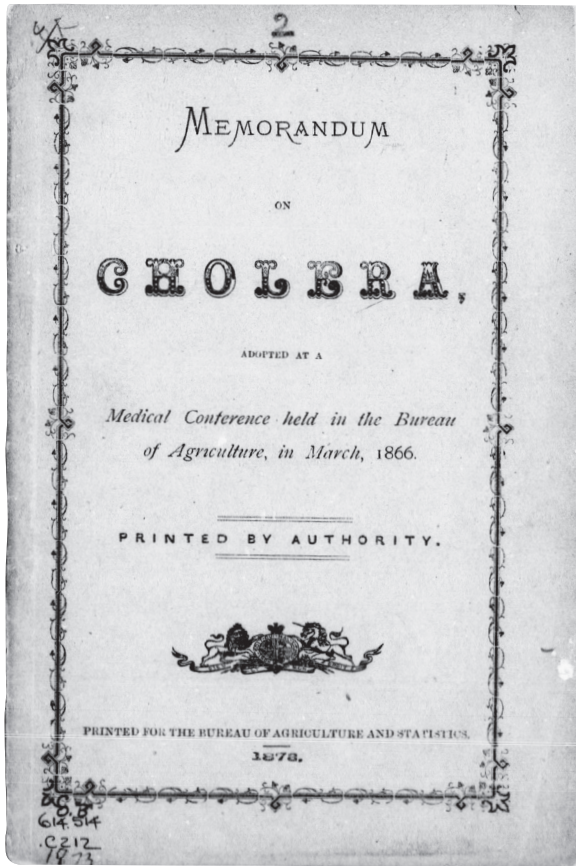
In April, the provincial committee’s *Memorandum on Cholera* was issued. Its precautionary provisions were similar to but far more detailed than those identified on March 2 by the City of Ottawa doctors.<sup>31</sup> The 30-page publication offered a detailed history of cholera epidemics in the Canadas since 1832 and synthesized what its authors deemed to be the world’s best available knowledge on the nature of the disease and its transmission. The report also urged an intensive program of

29 “Sanitary Measures,” *Ottawa Times*, March 3, 1866, p. 2.

30 “Sanitary,” *Ottawa Times*, March 21, 1866, p. 2.

31 *Memorandum on Cholera, Adopted at a Medical Conference held in the Bureau of Agriculture, in March, 1866*, reporter Dr. J.C. Taché, 1878 printing, Ottawa: Bureau of Agriculture and Statistics, 1878.

scientific analysis and monitoring of local conditions “before, during and after” any anticipated epidemic to better inform future public health planning. The report called for the compiling of records for each locality on “the quality and distribution of its waters, rivers, lakes, marshes, etc.,” and their proximity to neighbourhoods most or least affected by disease.<sup>32</sup> The relationship between local bodies of water, their degree of degradation and the incidence of disease in adjacent communities was clearly on the minds of Van Cortlandt and the other authors of the document.



**Figure 3.** Van Cortlandt’s work as the City of Ottawa’s medical health officer and as a member of the Central Board of Health of the Province of Canada led him to link sawdust pollution on the Ottawa River with the potential spread of cholera in the spring and summer of 1866.

Source: *Memorandum on Cholera*, 1866.

The *Memorandum* contained a multitude of observations about the nature of cholera and recommendations about how to minimize the risks of an epidemic striking any locality that would have justified Van Cortlandt’s targeting of the

<sup>32</sup> *Ibid.*, pp. 29-30.

Ottawa River sawdust situation for ameliorative action. “It is a matter of public security to have everything of a dangerous nature removed from the centres of population and vicinity of human abodes; such as are contents of cesspools, composts, offals, heaps of manure, carcasses of animals, soakage; in one word, *every sort of vegetable or animal matter in actual or impending decomposition*,”<sup>33</sup> the document stated (emphasis added). “Let everyone be reminded of the things which are to be provided, and especially of the very great importance of obtaining an abundant supply of water which should be of the best quality.”<sup>34</sup>

Acknowledging expert uncertainty about whether cholera was best understood as “a contagious, epidemic or infectious disease,” the *Memorandum* goes on to state that: “Many discussions are still maintained as to the manner in which Cholera is carried in its voyages through land and over water. There being no doubt that it is portable, it is wiser to act under the admission that it is carried by persons, effects, and merchandize, and even by the winds of the air and currents and streams.”<sup>35</sup>

Although they produced their report long before scientific acceptance of the germ theory had solved the mystery of cholera’s true bacteriological cause, and though they linked the likelihood of becoming ill with such irrelevant factors as the “moral” habits of a given population, including levels of alcohol consumption, the authors of the *Memorandum on Cholera* also acknowledged they did not fully understand the condition and advocated measures calculated to have positive public health effects regardless of the true cause of the disease or its chief means of transmission. It is reasonable to assert that the sanitary measures ordered by Van Cortlandt and the other Canadian physicians had a positive effect on communities confronting the 1866 cholera threat that proved to have a negligible impact in British North America, though not in the U.S. Furthermore, the efforts to organize and institutionalize the state’s response to the cholera threat between 1832 and 1866, including the capstone publication of the *Memorandum*, have been seen by historians as a critical, embryonic phase in the emergence of Canada’s public health system. As Canadian medical historian Geoffrey Bilson succinctly observed, “Those early efforts at sanitary reform, crude as they were, resulted from the successive visits of the cholera. The later achievements in public health rested on that foundation.”<sup>36</sup>

The City of Ottawa took further steps of its own to combat the coming cholera. A March 22 proclamation from the mayor compelled residents and businesses to clean and disinfect their individual properties by April 15. Notably, however, the proclamation stipulated that, “the place assigned for the deposit of filth, etc., as long as practicable, is on the ice on the Ottawa River, near the centre of the

33 *Ibid.*, p. 18.

34 *Ibid.*, p. 19.

35 *Ibid.*, pp. 7-8.

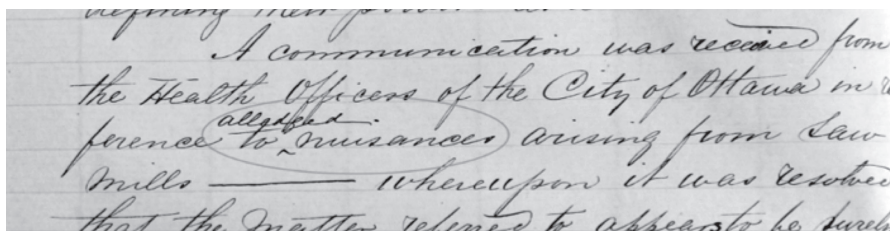
36 Bilson, *A Darkened House*, p. 142. For views on the significance of the 1866 cholera scare and other nineteenth-century cholera epidemics in the founding of the Canadian public health system, see: Ruddy and Sullivan, *The is Public Health*, pp. viii-x; Bruce Curtis, “Social investment in medical forms: The 1866 cholera scare and beyond,” *The Canadian Historical Review*, vol. 81, no. 3 (September 2000), pp. 347-379.



channel.”<sup>37</sup> Paradoxically, the same sawdust-choked river that would be identified by Van Cortlandt in a few months’ time as a potential contributor to the cholera threat was seen in late March by the municipal council’s health committee as a vital flushing mechanism for the city’s filth.

On May 14, the city appointed Van Cortlandt and a junior French-speaking colleague, Dr. Pierre St. Jean, as medical officers of health responsible for overseeing and enforcing all local disease-prevention measures. Within two weeks, Van Cortlandt had written his letter to the Crown Lands department urging it to take action to halt sawdust pollution in the Ottawa River.

Van Cortlandt linked his expressed concerns about sawmill waste to his simultaneous efforts to combat cholera, as is made clearer in the archived records of the Central Board of Health. The minutes of the board’s June 1 meeting in Ottawa, from which Van Cortlandt was absent, indicate that Van Cortlandt and St. Jean either provided a copy of the May 30 letter that had been sent to Crown Lands or repeated its central message in a separate letter: “A communication was received from the Health Officers of the City of Ottawa in reference to alledged (sic) nuisances arising from saw mills [and] whereupon it was resolved that the matter referred to appears to be purely of a local nature and remediable if necessary by the municipalities in whose jurisdiction such nuisances are found to exist.”<sup>38</sup> This handwritten entry in the board’s official record is especially intriguing because of the later insertion of the word “alledged” (sic) ahead of the word “nuisances,” perhaps signaling the scribe’s doubt with regard to the Ottawa health officers’ characterization of the severity of the problem, or indicating a degree of legal caution in an era when activities purported to pose a “nuisance” to a complainant could be subject to court action and penalties.<sup>39</sup>



**Figure 4:** The Central Board of Health’s June 1, 1866 recording of the “alledged (sic) nuisances arising from saw mills.” Van Cortlandt and fellow City of Ottawa health officer St. Jean raised the issue during board discussions about how to avert a cholera epidemic in Canada that summer.

Source: *Minutes of the Central Board of Health*, Library and Archives Canada, Record Group 17, 2431, p. 23. Photo, notation by the author.

37 “Proclamation!” *Ottawa Citizen*, March 28, 1866, p. 3.

38 Minutes of the Central Board of Health, manuscript record beginning April 28, 1866, Agriculture Dept. Quarantine and Public Health Branch, Library and Archives Canada, Record Group 17, 2431, p. 23.

39 On nuisance law in Canada, see: John P. S. McLaren, “The Common Law Nuisance Actions and the Environmental Battle—Well-Tempered Swords or Broken Reeds,” *Osgoode Hall Law Journal*, vol. 10 no. 3 (1972), pp. 505-561.

Nevertheless, the prompt dismissal of the matter as being “purely of a local nature,” and one that should be addressed only by municipal authorities “if necessary,” underscored the challenge involved in raising broadly “environmental” concerns at a time when—even to fellow medical professionals—the pervasive presence of a pollutant evident to the naked eye might not, in fact, be seen as pollution at all, let alone a potential threat to public health.<sup>40</sup>

By November 1866, after the cholera threat had passed without inflicting significant harm anywhere in British North America, Van Cortlandt and St. Jean delivered a final report to City Council on their work as health officers that year. “We reported to the proper authorities on the insalubrious effects on the water of the Ottawa resulting from sawdust and other recrements of sawmills, and as well to the Ordnance Land Agent regarding sundry nuisances in connection with the Rideau Canal [By-wash], all of which met with either prompt attention or satisfactory notice,” stated the Nov. 5 submission, which was printed verbatim in local newspapers. The report appears to reflect the doctors’ confidence that the Crown Lands department was, in fact, preparing to enforce its rules against sawdust dumping in the Ottawa and to produce significant improvements in water quality. Plans by Van Cortlandt and St. Jean to conduct scientific tests on Ottawa’s water supplies, the two men noted, had been foiled by excessive rainfall that summer and the “extreme and universal freshets” that raised water levels far beyond normal. “We could not have hoped to bring our experiments to any satisfactory end,” they told councillors. “On the whole, however, we beg most respectfully to congratulate the city authorities on the great and general improvement in the sanitary condition of the city.”<sup>41</sup>

Canadian environmental historian Graeme Wynn has described how cholera “was the ‘critical illness’ of the mid-nineteenth century, the key challenge to understanding in contemporary medical science, and debate about its causes forced both public officials and society at large to reconsider long-established attitudes toward waste and the environment.”<sup>42</sup> Van Cortlandt, however rudimentary (or even mistaken) his comprehension of the links between cholera, both dispersed and decaying sawdust in the Ottawa River and the broader sanitation challenges faced by the city in which he lived, might now be viewed as a Canadian harbinger

40 It is tempting to suspect that the board’s doubts about the merits of Van Cortlandt’s advocacy on sawdust were shaped by June 1 attendee Dr. James Grant, an esteemed fellow member of the Ottawa medical community who would, in Canada’s first federal election in 1867, win an Ottawa-area seat for the Conservatives. In February 1871, when the sawdust issue was being debated in the House of Commons, Grant argued against a bill proposed by Liberal MP Richard Cartwright to strictly prohibit all mill waste from entering any navigable river in Canada. Grant argued that such provisions “would most seriously influence our local business. Throwing sawdust into the streams did not obstruct them. The bill would gravely retard and damage the lumbering interests.” See, *Parliamentary Debates, Dominion of Canada, Fourth Session, Vol. II*, Ottawa: Ottawa Times Printing & Publishing, pp. 190-191—Feb. 28, 1871. On the other hand, Grant is also remembered as a public health pioneer who used his presidency of the Canadian Medical Association in 1873 to promote the permanent implementation of sanitary measures against cholera. See, Bilson, *A Darkened House*, p. 142.

41 Minutes of Ottawa City Council, Nov. 5, 1866, microfilm referenced at Archives of Ontario, Ref (O) 325.071 384095a; and “Final Report of the Medical Health Officers,” *Ottawa Times*, Nov. 13, 1866, p. 2.

42 Graeme Wynn, “Foreword: Risk and Responsibility in a Waste-Full World,” in Benidickson, *The Culture of Flushing*, p. ix.

of this cholera-sparked, transatlantic evolution in thinking about the environment.<sup>43</sup> He evidently believed that the Ottawa should not be seen merely as a flushing mechanism for lumber-industry offal—and thus a potential source of disease or degraded drinking water downstream—but rather as a navigable waterway for commerce and travel, as a healthy habitat for fish and other aquatic life, and as a community resource for safe drinking, sanitation, and recreation.

### **Ottawa 1866: The Sawdust Battle Engaged**

Van Cortlandt's 1866 letter to Campbell about the harms caused by Ottawa River sawmill waste was a behind-the-scenes action that would soon push the sawdust pollution issue into the public realm—first in Ottawa, then beyond. As McLaren has observed, 1867 can be identified as the moment at which “the pace of the debate on sawdust pollution quickened” and “the stirrings of a national concern about it were perceptible for the first time.”<sup>44</sup> Benidickson, likewise, identified Ottawa as the place where “controversy about the impact of lumber industry waste on navigation had gained public attention,” the result of the 1866 intervention by “Dr. E. Van Cortland (sic), the city of Ottawa's health officer,” and his threefold complaints about sawdust's effects “on spawning grounds, on navigation, and on public health.”

The debate, a long time coming, had deep roots. As the British North American colonies moved towards Confederation in the mid-1860s, and then beyond the initial, four-province pact in the years that followed, Canada's new capital city was at the centre of the emerging nation's key resource industry: the production of lumber. But the massive sawmill operations that had come to dominate Ottawa's economy and landscape at that time, on the very eve of Confederation, seemed certain to produce tensions between the promotion of rapid, export-driven material progress—deemed crucial to both the city's grand ambitions and the emergent nation's transcontinental destiny—and the protection of a livable, navigable riverine environment along the liquid boundary between French and English Canada.<sup>45</sup>

An analysis of the origins and initial trajectory of this conflict, as well as the broader context in which the country's first major pollution controversy began to unfold, not only points to the 1866 cholera scare as the catalyst for conflict, but

43 In his 1980 history of cholera in Canada, Bilson makes note of the fact that Ottawa's “two health officers” raised concerns in 1866 about sawdust and sewage in the city's water supply. But Bilson's *Darkened House* does not reference the sawdust controversy that erupted the same year. Similarly, Gillis's trailblazing studies on the sawdust question don't link the rise of that issue to the 1866 cholera scare. Benidickson captured the thrust of existing scholarship when he stated that the sawdust issue “was one major pollution question viewed as environmental rather than a public health matter” in the immediate post-Confederation years, though he also noted that sawmill waste was “on the agenda of the public health officials of Ontario almost as soon as the Provincial Health Board came into existence” somewhat later, in 1882. See Benidickson, “Ontario Water Quality, Public Health and the Law,” in G. Blaine Baker and Jim Phillips, eds., *Essays in the History of Canadian Law: In Honour of R.C.B. Risk* (Toronto: University of Toronto Press, 1999), p. 140.

44 McLaren, “The Tribulations of Antoine Ratté,” p. 215.

45 An early version of this paper was presented at the conference “Dominion of Nature: Environmental Histories of the Confederation Era,” organized by NiCHE, the Network in Canadian History and Environment, at the University of Prince Edward Island, Charlottetown, July 31-Aug. 1, 2014.

also offers insights into competing and evolving perspectives in Confederation-era Canada concerning the impact of human activity on the environment.



**Figure 5.** Canoes, some with sails, and steamboats on the sawdust-choked Ottawa River in July 1889, directly below Parliament Hill and just downstream of the Chaudière Falls sawmills.

Source: William James Topley, Topley Studio / Library and Archives Canada, MIKAN 3422387

More specifically, given the way in which “the environment” and “public health” were comprehended at that time, it’s clear that certain ideas pertaining to the colony’s forests, rivers, fish, and game resources had entered a state of flux just as Ottawa’s ongoing industrialization and urbanization, which included pressures associated with its June 1866 inauguration as Canada’s capital, were bringing the city’s challenges around waste disposal and clean water supplies into sharp focus.

Even in the face of sustained objections to sawmill pollution in the Ottawa River and other waterways—concerns that were voiced from just before Confederation to the early 1900s—and despite separate attempts to legislate or regulate an end to sawdust dumping in each of the last four decades of the nineteenth century, strict measures to stop this environmental “evil,” as it was sometimes called, were not enforced in the national capital region or elsewhere until 1903—and even then, they were not always effectively enforced.

Previous studies<sup>46</sup> have examined aspects of this agonizingly long period of industrial intransigence, political vacillation, regulatory laxity, and environmental deterioration, chronicling how a glaringly obvious form of pollution was allowed

<sup>46</sup> See Gillis, “Rivers of Sawdust,” pp. 265-283; Benidickson, *The Culture of Flushing*, pp. 41-48; Benidickson, “Cleaning Up after the Log Drivers’ Waltz: Finding the Ottawa River Watershed,” in *Les Cahiers de droit*, Vol. 51 (2010), pp. 729-748; McLaren, “The Tribulations of Antoine Ratté,” pp. 203-259; Duncan Chappell, *From Sawdust to Toxic Blobs: A Consideration of Sanctioning Strategies to Combat Pollution in Canada*, Ottawa: Department of Justice, 1989.

to persist in large part because key decision makers tended to privilege immediate economic concerns over all other interests.<sup>47</sup> They allowed debates to focus on navigational impacts of sawdust dumping rather than more difficult to measure environmental or public health consequences.<sup>48</sup> This section of the paper focuses on the earliest phase of the sawdust controversy—between the years 1866 and 1867—when concerns about the “polluting”<sup>49</sup> of the Ottawa River were first coalescing and the implementation of strict measures to eliminate or seriously mitigate the problem still seemed possible.

The issues are illuminated by examining the ideas and actions of various individuals in the period immediately before Confederation, but Van Cortlandt, the man credited with launching the controversy, affords a particularly useful lens. Through this physician-naturalist and other players involved in the genesis of the issue, the “sawdust question” that arose along the Ottawa River in 1866 can be linked to several concurrent concerns, in Ottawa and beyond, about disappearing forests and fish, in addition to the imminent threat to human health posed by the expected arrival that year of cholera. At the same time, the power of entrenched commercial interests and the widespread persistence of utilitarian conceptualizations of nature as a mere storehouse of natural resources—rather than a complex interlacing of life-sustaining natural systems—are shown to have seriously curbed the capacity of post-pioneer society to adapt effectively to the challenges posed by urban growth, industrialization, and lumber-fuelled economic prosperity.<sup>50</sup>

Notably, sawdust pollution momentarily flared as an issue in the Confederation debates; even the ultimate symbol of Confederation—the newly erected Parliament Buildings situated just downstream from the Ottawa sawmills—can be retrospectively implicated in the controversy. Campbell, a relatively low-profile Father of Confederation from the Province of Canada, is shown to have been determined, at least initially, to end sawdust dumping in the Ottawa before bowing to pressure not to push his proto-conservationist agenda too far. Nevertheless, he can step forward from the crowd of 26 men famously pictured on the steps of

47 Such challenges persist well in the 21<sup>st</sup> century, as comments in 2014 by then-prime minister Stephen Harper made clear: “‘It’s not that we don’t seek to deal with climate change,’ said Harper. ‘But we seek to deal with it in a way that will protect and enhance our ability to create jobs and growth.’” Mark Kennedy, “Jobs trump climate, like-minded leaders agree,” *Windsor Star*, June 10, 2014, p. A8.

48 The issue of maintaining clear navigation on the Ottawa was particularly significant because of an ambitious proposal, studied and debated throughout the Confederation era, to connect the St. Lawrence River to Georgian Bay via the Ottawa River “ship canal.” Many critics of sawdust dumping in the Ottawa were motivated principally by concerns that obstructions in the waterway could undermine a scheme that was viewed, like the transcontinental railway, as an infrastructure project crucial to the opening of the West and the eventual realization of a nation stretching from Atlantic to Pacific.

49 As explored later in this article, the word “polluting” was sufficiently novel in 1866 to warrant special attention in an *Ottawa Citizen* editorial that made use of the term. See Editorial, *Ottawa Citizen*, Oct. 8, 1866, p. 2.

50 Various readings in Canadian environmental history underpin the analysis and approach in this paper. See, in particular, Graeme Wynn, “Approaching Environmental History,” and Alan MacEachern, “An Introduction in Theory and Practice,” in Alan MacEachern and William J. Turkel, eds, *Method and Meaning in Environmental History* (Toronto: Nelson, 2009); David Lee, *Lumber Kings and Shantymen: Logging and Lumbermen in the Ottawa Valley* (Toronto: James Lorimer, 2006); Gillis and Roach, *Lost Initiatives*; Ingram, *Wildlife*; Lambert and Pross, *Renewing Nature’s Wealth*.



P.E.I.’s Government House at the Charlottetown Conference of 1864, emerging here as perhaps the “greenest” of the Dominion’s patriarchs.



**Figure 6.** Alexander Campbell, seated with legs crossed on the right side of the photo, and the other Fathers of Confederation at the Charlottetown Conference, September 1864, on the steps of P.E.I.’s Government House.

Source: G.P. Roberts, Library and Archives Canada, MIKAN 3623696

Certain ideas circulating during this early phase of the sawdust controversy reflected a subtly shifting sense of humanity’s relationship with nature at the very moment when modern Canada was being created. Notably, the emergence of the sawdust issue in 1866 coincides with the earliest high-profile Canadian uses of the term “pollution” in the modern, commonly understood, environmental sense of the word: the problematic discharge of a deleterious substance into the water or air. Thus, the battle over Ottawa River sawdust can be seen as part a dawning recognition in 1860s British North America of the fragility and exhaustibility of the land, the water and their respective resources, and of the concomitant vulnerability of human communities dependent on a healthy natural environment. This gathering awareness of ecological limits, though not understood in those terms at the time, can be traced even as the Fathers of Confederation were gaining inspiration from a Biblical passage about placing vast lands and waters under human control—“He shall have dominion also from sea to sea, and from the river unto the ends of the earth”—for the official name and expansionist vision of their new country.<sup>51</sup>

<sup>51</sup> See C.M. Wallace, “Tilley, Sir Samuel Leonard,” in Frances Halpenny, ed., *Dictionary of Canadian Biography*, Vol. 12 (University of Toronto/Université Laval, 1990). “The non-occupation of the North-West Territory is a blot on our character,” Father of Confederation George Brown had claimed, urging Canadians to pursue an imperial path in which “the wealth of four hundred thousand square miles of territory will flow through our waters and be gathered by our merchants, manufacturers and agriculturalists. Our sons will occupy the chief places of this vast territory, we will form its institutions, supply its rules, teach its schools, fill its stores, run its mills, navigate its streams... We can beat the United States if we start at once.” Quoted in Donald Creighton, *Dominion of the North* (Toronto: MacMillan, 1957), p. 291.

### “A Turbid River Full of Slabs and Sawdust”

Surrounded by seemingly endless<sup>52</sup> white pine forests, the city chosen by Queen Victoria in 1857 to become capital of the Province of Canada—a status transferred to the Dominion of Canada on the basis of an 1864 agreement among the Fathers of Confederation—was also blessed with a natural network of large rivers and tributaries conducive to commerce. These waterways were ideally arrayed for the efficient annual transport, by the 1860s, of hundreds of thousands of toppled trees bound for processing at the famed Chaudière Falls milling complex in the heart of Ottawa-Hull, with its abundance of water power to drive the cutting machines, and then for delivery to domestic and world markets via the lower Ottawa and St. Lawrence rivers. The harnessing of the falls’ immense power for lumber production (and later in Ottawa’s history, for hydroelectricity) extended earlier measures, including the construction of dams and timber slides, to tame the wildly churning waters of the Chaudière to optimize the handling of square timbers and logs. The utilitarian transformation of the Chaudière Falls and the surrounding waterways has long been described in triumphal terms in local and national histories as the foundation of the Ottawa Valley’s phenomenal prosperity in the nineteenth century.<sup>53</sup>

But the transition in the mid-1800s from the square timber trade to the sawn lumber business as the region’s principal economic activity initiated an era in which various forms of wood refuse, including sawdust, slabs, bark, blocks, edgings, and other kinds of “mill rubbish” amounting to about one-sixth of each tree trunk’s original mass,<sup>54</sup> were routinely dumped or allowed to drift into the Ottawa River once the Chaudière saws had cut the raw logs into construction-ready boards. The effects of this discarded “offal,” as it was sometimes called, included surface and subsurface debris that floated away from mill sites but eventually sank, bays that became clogged with wood waste, artificial shoals that formed from sunken slabs and sawdust compacted with silt, degraded water quality for drinking and other uses, and dangerous—even fatal<sup>55</sup>—methane explosions as stinking, rotting masses of submerged sawdust, potentially mixed with sewage that was also being discharged directly into the river, belched volatile clouds of gas that could overturn boats and even blow up winter ice cover.<sup>56</sup>

It was only gradually recognized that fish populations and other aquatic life, while clearly affected by dams along rivers that blocked spawning runs and disturbed flow patterns, might also be harmed by mill waste suspended in the water

52 The myth of the inexhaustible forest is explored by various writers cited at Footnote 3, but also here: H.V. Nelles, *The Politics of Development: Forests, Mines and Hydro-Electric Power in Ontario, 1849-1941* (Toronto: Macmillan of Canada, 1974), pp. 183-4.

53 For two of many such examples, see John Hamilton Gray, *Confederation, or The Political and Parliamentary History of Canada*, Vol. 1 (Toronto: Copp Clark, 1872), p. 107; Wilfrid Eggleston, *The Queen’s Choice* (Ottawa: Queen’s Printer, 1961), p. 95. The industrial-era entombment of this once-spectacular waterfall has been lamented by Ottawa-area Algonquin nations as the desecration of a profoundly important cultural heritage site, and by many public officials and other residents of the modern National Capital Region as the forsaking of a natural wonder and potential international tourist attraction.

54 See Benidickson, *The Culture of Flushing*, p. 42.

55 *Ibid.*, p. 45.

56 Gillis, “Early Federal Regulatory Records,” p. 63.

or accumulated in smothering layers at breeding and feeding sites.<sup>57</sup> Meanwhile, as mill rubbish joined with deposits of “night soil” (human excrement) and a wide range of other foul substances discarded daily from homes and businesses into the Ottawa, there were inevitable impacts on the capital’s principal source of drinking water.



**Figure 7.** An artist’s bird’s-eye view of Ottawa-Hull, looking southeast in 1876, showing Parliament Hill (upper left) and Chaudière sawmill operations (lower right); a thoroughly industrialized landscape. *Source:* Herman Brosius, “Bird’s eye view of the city of Ottawa (Ontario),” Toronto Public Library, Call No. 979-27-1

The battle over the fate of the Ottawa River was emblematic of similar struggles elsewhere in what became, after 1867, the provinces of Quebec and Ontario. Sawmill pollution was also a source of controversy in federation founders New Brunswick and Nova Scotia, as well as in Prince Edward Island.<sup>58</sup> But the sawdust dispute on the eve of Confederation and in the years immediately afterwards was

<sup>57</sup> See Samuel Wilmot, “Sawdust—Its Injurious Effects Upon Fish-Life in the Waters of the Country,” *Report on Fish Breeding Operations in the Dominion of Canada—1889* (Ottawa: Brown Chamberlin, 1890), pp. 12-23.

<sup>58</sup> See M.H. Perley, *Reports on The Sea and River Fisheries of New Brunswick* (Fredericton: Queen’s Printer, 1852); Gilbert Allardyce, “The Vexed Question of Sawdust River Pollution in Nineteenth Century New Brunswick,” in Chad Gaffield and Pam Gaffield, eds, *Consuming Canada: Readings in Environmental History* (Toronto: Copp Clark, 1995), pp. 119-130; Heather L. MacLeod, “Past Nature: Public Accounts of Nova Scotia’s Landscape, 1600-1900,” M.A. Thesis, Saint Mary’s University, 1995; Editorial, *The Islander*, Charlottetown, P.E.I., July 2, 1869, p. 2. The paper was calling on P.E.I.’s colonial government to extend new fisheries-protection legislation to the prohibition of sawmill pollution, while acknowledging it might be too late—not for the fish, but for the lumber supply: “The throwing of sawdust into the rivers is very improper and should have been prohibited years ago. Sawdust injures the fish, and moreover forms banks or shoals. But as the forests are now well nigh gone, it is perhaps not worth while for the Legislature to interfere.”

driven largely by events occurring in “the cockpit of the debate,” as one historian has put it,<sup>59</sup> where the nation’s lawmakers could literally look out the windows of their cliff-top parliamentary offices and observe the source of all the trouble in the river directly below.<sup>60</sup>

In the interval between the breakthrough Charlottetown Conference of September 1864 and the formal achievement of Confederation on July 1, 1867, the deteriorating state of the Ottawa River became an unlikely flashpoint in the rhetorical crossfire between two great adversaries battling over the proposed federal union: Nova Scotia’s firebrand ex-premier Joseph Howe, the leading critic of the deal, and Thomas D’Arcy McGee, Confederation’s most eloquent and combative proponent. Howe was particularly bitter about Ottawa’s selection as seat of government, condemning the choice as further proof that his colony’s interests had been sacrificed to the demands of the Canadas (Ontario and Quebec), their “inferior,” “backwoods” capital “with an Indian name” unfairly anointed by the Fathers of Confederation over Halifax or Saint John—and ultimately over imperial London—as political hub of the new, upstart Dominion.



**Figure 8.** Father of Confederation Thomas D’Arcy McGee, left, and former Nova Scotia premier Joseph Howe, who sparred over the state of the Ottawa River in June and July 1866.

Sources: (McGee) William Notman, Library and Archives Canada, MIKAN 4104330; (Howe) Library and Archives Canada, MIKAN 3216945

<sup>59</sup> Gillis, “Rivers of Sawdust,” p. 267.

<sup>60</sup> Lee, *Lumber Kings*, p. 233.



“What can Ottawa ever be, but a shabby imitation of Washington?” Howe told a crowd in Barrington, N.S., in early June 1866. “Why should we commit this eggregious (sic) folly? Is Halifax ... so poor an outlook for an orator, that he must sigh for a turbid river full of slabs and sawdust?”<sup>61</sup>

This depiction of the Ottawa River as a kind of lumber slag cesspool was perhaps the only explicitly environmental argument made during the Confederation debates, however incidental the issue was to Howe’s chief concerns. The broad insult against Ottawa, though not Howe’s precise assertion of a polluted river, was countered in the next week’s *Ottawa Citizen*: “It may serve the purpose of Mr. Howe to sneer at the slabs and sawdust of the Ottawa River; but the immense forests of pine which nature has lavished upon the land irrigated by that river and its tributaries, and the large steam and other sawmills which stud their banks, together represent a large source of natural wealth.”<sup>62</sup> Howe’s attack on the capital also prompted a vigorous defence of both the city and its principal waterway from McGee, a key architect and promoter of the colonial unification project. In a July 2, 1866 speech, McGee took direct aim at his Nova Scotian nemesis. The address (and the audience’s reaction) was captured verbatim in the next day’s *Citizen*:

Among other follies, he has fallen foul of Ottawa because it is not London, and has abused this glorious river as a muddy stream, filled with slabs and sawdust. (Laughter) Of course, it is no use reminding Mr. Howe that Ottawa has appliances of civilization—has resources and prospects greater than London itself had in the days of Alfred.... There is no use answering him that our great river, unlike the St. John, is wholly our own; that it rises and runs through only our land; that its waters are everywhere so pure; that the heated raftsmen need only stoop and drink (Applause).<sup>63</sup>

The countless tonnes of mill refuse streaming daily into the stream below the Chaudière mills had already caught the attention, as we know, of the city’s medical health officer and best-known naturalist, Dr. Van Cortlandt.<sup>64</sup> Van Cortlandt had, in fact, done much since the 1850s to help secure old Bytown’s future as Canada’s capital,<sup>65</sup> the status now so regretted by Howe. But the 60-year-old physician, who would in 1868 have the grim task of serving as coroner to the assassinated McGee,<sup>66</sup> could not have honestly endorsed the doomed Irishman’s claims about the purity of the Ottawa. Just days before Howe’s tirade against the murky river,

61 *Halifax Morning Chronicle*, June 9, 1866, p.2.

62 *Ottawa Citizen*, June 19, 1866, p. 2.

63 *Ottawa Citizen*, July 3, 1866, p.2

64 A useful summary of Van Cortlandt’s life can be found here: Courtney C.J. Bond, “Van Cortlandt, Edward,” *Dictionary of Canadian Biography*, Vol. 10 (Toronto and Quebec: University of Toronto/Université Laval, 1972).

65 Further details follow, but these efforts include Van Cortlandt’s organizing of a scientific, cultural and industrial exhibition during an 1853 visit to Bytown by Lord Elgin, as well as his involvement in (and probable co-authorship of) an 1858 history of Ottawa credited to his 14-year-old daughter, which was intended to help reinforce Queen Victoria’s 1857 choice of the city as capital of the Province of Canada. See Gertrude Van Cortlandt, *Records of the Rise and Progress of the City of Ottawa, From the Foundation of the Rideau Canal to the Present Time* (Ottawa: Ottawa Citizen, 1858).

66 T.P. Slattery, ‘*They Got to Find Mee Guilty Yet*’ (Toronto: Doubleday, 1972), p. 82.



Van Cortlandt himself had officially raised alarms in his letter to Campbell—in terms comparable to those used by Nova Scotia’s future lieutenant-governor—about the sawmills’ befouling of the waterway.

For more than 30 years after his arrival in Bytown in 1832, Van Cortlandt had devoted a startling amount of his non-medical time to exploring, documenting and studying the Ottawa area’s natural environment. Like other outdoor enthusiasts of the era, Van Cortlandt developed an interest in many branches of “natural history”—geology, zoology, archaeology, botany, palaeontology. He published the earliest inventories of the region’s mammals, fish, reptiles, and birds;<sup>67</sup> assembled one of the largest private museums in British North America; and published pamphlets on the Ottawa area’s mineral wealth, forest resources, and building stones. His expertise in the latter subject was recognized in 1860 when the contractors erecting the Parliament Buildings chose for their historic project supplies of local sandstone that had been identified by Van Cortlandt.<sup>68</sup>

**AN ENUMERATION OF THE PRINCIPAL MAMMALS, BIRDS,  
REPTILES AND FISHES OF THE OTTAWA VALLEY.**

BY EDWARD VAN CORTLAND, M. D.

Honorary Member of the Literary and Historical Society of Quebec, &c.

—  
**MAMMALS.**

<i>Scientific Name.</i>	<i>English Synonym.</i>	<i>Remarks.</i>
<b>Cervus Virginianus.</b>	Common Deer.	<b>Abundant.</b>
<b>Cervus Canadensis.</b>	Wapite.	<b>Scarce.</b>
<b>Cervus Tarandus.</b>	Caribou.	<b>Scarce.</b>
<b>Alces Malobis.</b>	Elk or Moose.	<b>Scarce.</b>
<b>Ursus Americanus.</b>	Black Deer.	<b>Plentiful.</b>
<b>Ursus Lotor.</b>	Raccoon.	<b>Plentiful.</b>

**Figure 9.** The first page of Van Cortlandt’s 1859 inventory of Ottawa-area wildlife, published by the Farmer’s Journal and Transactions of the Lower Canada Board of Agriculture.

Source: *The Farmer’s Journal and Transactions of the Lower Canada Board of Agriculture*, September 1859. [Canadiana.ca](http://Canadiana.ca)

A founding figure in various Bytown/Ottawa scholarly associations, including the Ottawa Natural History Society, Van Cortlandt lectured on the plants, fish, insects, and snakes of the region, and has been described as the earliest of Ottawa’s three “pioneer resident naturalists”—along with Elkanah Billings, who would become Canada’s first professional palaeontologist, and his botanist brother Braddish—

67 Edward Van Cortlandt, “An Enumeration of the Principal Mammals, Birds, Reptiles and Fishes of the Ottawa Valley,” *The Farmer’s Journal and Transactions of the Lower Canada Board of Agriculture*, September 1859, p. 198.

68 Edward Van Cortlandt, *Observations on the Building Stone of the Ottawa Country* (Ottawa: Ottawa Citizen, 1860), p. 8; Edward Van Cortlandt, Letter to the Editor, *Ottawa Citizen*, Aug. 18, 1860, p. 2.

who were collectively responsible for “the only natural environment research” carried out in the Ottawa Valley prior to 1860.<sup>69</sup> Van Cortlandt was also an avid hunter and angler who collected specimens for study. In the 1860s, he donated some of his preserved creatures to museums in Montreal and even the Smithsonian Institution in Washington, D.C.<sup>70</sup>

A key moment earlier in Van Cortlandt’s life also serves as an important point of reference in Ottawa’s history, including its natural history. In 1853, he organized an exhibition of objects—many from his own renowned “cabinet of curiosities”—showcasing the region’s natural resources and wildlife, as well as the city’s various intellectual pursuits, for a landmark visit by Lord Elgin, the governor general. The display of artifacts, specimens, and artworks was hailed as a triumph, helping to earn Bytown serious consideration for the first time as a potential colonial capital, a dream realized within a few years. Praising the myriad signs of “civilized life” along “the banks of the Ottawa,” Lord Elgin went on to neatly capture the stance toward nature that prevailed at the time:

In this interesting and important region, it would appear, that scarcely has the hardy Lumberman invaded the wilderness to wage war upon the mighty monarchs of the forest, who have maintained their undisputed sway for centuries, when he is followed by the Farmer, who finds in the wants of the Lumberman a ready market for the products of his industry; and the Farmer in his turn as immediately succeeded by the Mechanic and the Artisan. You are thus, all of you, honorably and fully engaged in fulfilling the behest of Him, who has commanded his creature man to subdue the Earth.<sup>71</sup>

After a speech later that year on “The Woods of Ottawa,” an exhilarated Van Cortlandt seemed to echo such sentiments when he urged the “young men of Bytown” to develop “a taste for scientific and useful knowledge,” to seize upon opportunities abounding in an age of rapid technological and intellectual advance: “We live in utilitarian times; the march of man is onwards. New revelations are going on daily around us...”<sup>72</sup>

But by the 1860s, the “march of man” would prove, in ways that were becoming more apparent and worrisome to part-time naturalists like Van Cortlandt, to involve too much reckless trampling of the Earth. In 1864, George P. Marsh’s *Man and Nature, or Physical Geography as Modified by Human Action* appeared in Canada<sup>73</sup>, offering a prophetically conservationist perspective on, for example,

69 Daniel F. Brunton, “Origins and History of the Ottawa Field-Naturalists’ Club,” in *The Canadian Field-Naturalist*, Vol. 118, No. 1, Jan.-March 2004, p. 2.

70 “List of Donations” to the Smithsonian Institution, *The Miscellaneous Documents of the House of Representatives, 1862-63*, Washington: Government Printing Office, 1863, p. 69.

71 *Ottawa Citizen*, July 30, 1853, p. 2.

72 Edward Van Cortlandt, “Various Conditions Under Which Iron is Found,” “Of the Woods of Ottawa” and “Young Men of Bytown,” in *An Epitome of a Lecture on Ottawa Productions* (Bytown: Ottawa Citizen, 1853), p. 8.

73 See, for example, “Just Published — Man & Nature,” advertisement for Rollo & Adam Booksellers and Importers, *Toronto Globe*, May 3, 1864, p. 3. A good indication of Marsh’s enduring influence and the widespread perception of *Man & Nature*’s appearance as a watershed moment in modern environmental awareness is Canadian philosopher Neil Evernden’s remark, in the opening lines of one of his acclaimed

the lumber industry's wanton destruction of forests and damaging of rivers. "The unparalleled facilities for internal navigation, afforded by the numerous rivers of the present and former British colonial possessions in North America, have proved very fatal to the forests of that continent," Marsh wrote with direct reference to the Ottawa Valley lumber trade.<sup>74</sup> And with regards to fish populations in the rivers of lumbering regions, Marsh noted how "milldams impede their migrations, if they do not absolutely prevent them, the sawdust from lumber mills clog their gills, and the thousand deleterious mineral substances, discharged into rivers from metallurgical, chemical, and manufacturing establishments, poison them by shoals."<sup>75</sup>

Such ideas, challenging as they might have been to many mid-Victorians in Canada, would have struck chords with a certain few, such as Van Cortlandt, whose experience as a physician and keen observer of nature made him more attuned than most to the detrimental changes occurring in the increasingly urbanized and industrialized Ottawa landscape. There were a number of indications, even in the short stretch of months when the sawdust issue was first making headlines in Canadian newspapers on the cusp of Confederation, that Van Cortlandt and others in the city were grappling with other "man and nature" conflicts of the kind Marsh had illuminated in his historic tome. In February 1867, for example, the man destined to become a Canadian pioneer in artificial fish breeding, the Toronto-area conservationist Samuel Wilmot, crossed paths with Van Cortlandt during a business trip to Ottawa to convince Campbell and Whitcher to expand Wilmot's local salmon hatchery into a Dominion-wide fish propagation program. Campbell's Crown Lands department was described in one news article on Wilmot's visit as being dedicated "to the restoration of the salmon to waters they formerly frequented, but it appears the progress of cultivation, the multiplication of mills, etc., have destroyed the natural spawning beds to a degree that was surely curtailing the supply of fish."<sup>76</sup> Van Cortlandt and fellow members of the Ottawa Natural History Society—including Alexander Kirkwood, the future forest preservationist and founder of Algonquin Park—later hosted Wilmot, who presented Van Cortlandt with "some two dozen of the most beautiful and lively pinks from his collection," as the grateful doctor wrote afterwards to the *Citizen*.<sup>77</sup> The fish, he added, "may be seen at my house by anybody curious on the subject, desporting most happily and healthily in a very small drawing-room Aquavivarium." Van Cortlandt then alluded to plans to restore "this king of fresh water fishes" to "its original haunts" in the Ottawa Valley—a project he would

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works, that the idea that "nature has become imperiled" due to destructive human practices "has been known at least since George Perkins Marsh's *Man and Nature* was published in 1864." See Neil Evernden, *The Social Creation of Nature* (Baltimore: The Johns Hopkins University Press, 1992), p. 3.

74 George Perkins Marsh, *Man and Nature, or Physical Geography as Modified by Human Action* (New York: Charles Scribner, 1864), p. 271.

75 *Ibid.*, p. 123.

76 *Ottawa Times*, Feb. 25, 1867, p. 2.

77 "Correspondence," *Ottawa Citizen*, Feb. 27, 1867, p. 2.

personally pursue with support from Wilmot, Whitcher, and others in 1869 on the Salmon River, an Ottawa River tributary downstream of the capital.<sup>78</sup>

Two months later, in April 1867, Van Cortlandt was engaged with Whitcher in another creative conservation effort that gained press coverage in Ottawa. As a test case to promote the protection of insect-eating songbirds, Whitcher arranged with a local hunter, Frederick Austin, to allow himself to be charged with “shooting snipe contrary to law.” While not specifically protected by game laws in Canada, the snipe, Whitcher contended, should be off-limits to hunters under provisions of the “Insectivorous Birds Bill,” which made it illegal to kill songbird species that consume insects—bird-friendly legislation that also served the interests of farmers keen to protect their crops from pests. Van Cortlandt was called to the stand to provide scholarly evidence that snipes do, indeed, eat insects. Point proven, the cooperative Austin was charged a token penalty of \$1. The defendant, Whitcher, and Van Cortlandt had achieved a legal precedent to make snipe-hunting illegal in Canada.<sup>79</sup>

In November 1866, under the headline “Don’t Shoot Him,” readers of the *Times* were urged to lower their guns and enjoy the sight of a friendly deer that had been stepping regularly out of the woods on the southern edge of the city. “It would seem as if this denizen of the forest wished to cultivate the society of man—a herald, may be, ‘sent by its beleaguered brethren’ to stay the hand of the sportsman. This beautiful animal has been seen by several persons.”<sup>80</sup> A month earlier, the same newspaper was editorializing that Canadians “have an interest in the preservation of our public timber land—our woods and forests—from undue destruction,” and congratulated Campbell for “calling attention to this important subject” in his 1865 Crown Lands report. And the *Times* reminded lawmakers that because the responsibility for protecting timber lands would shift to the new provincial legislatures after Confederation in 1867, “the ancient trees” that are “a trust to be held by us for the benefit of future generations” should be subject to careful management in Toronto and Quebec City and not be “recklessly wasted.”<sup>81</sup> In a similar vein, in April 1866, Van Cortlandt’s fellow Ottawa Natural History Society member Thomas Austin lectured a local audience on “The Ulterior Effects of Clearing off the Forests and Draining the Country.”<sup>82</sup>

In short, Van Cortlandt was a prominent member—in fact, a leader—of a well-established community of avocational naturalists in 1860s Ottawa who

78 W.F. Whitcher, “Exploration of Salmon River, In the County of Ottawa,” July 28, 1871, *Report of the Commissioner of Fisheries, Appendix BB, Sessional Papers, Fifth Session of the First Parliament of the Dominion of Canada*, Vol. V, 1872, p. 185.

79 “Police Court,” *Ottawa Times*, April 30, 1867, p. 2.

80 *Ottawa Times*, Nov. 3, 1866, p. 2.

81 *Ottawa Times*, Oct. 31, 1866, p. 2.

82 Brunton, “Origins and History,” pp. 4-5; Even Prime Minister John A. Macdonald, a strong defender of lumber interests, was sensing the exhaustibility of the Ottawa Valley’s forest resources by 1871: “The sight of immense masses of timber passing my windows every morning constantly suggest to my mind the absolute necessity there is for looking at the future of this great trade. We are recklessly destroying the timber of Canada, and there is scarcely a possibility of replacing it.” Letter to Ontario Premier John Sandfield Macdonald, June 22, 1871, in *Correspondence of Sir John Macdonald*, ed. Sir Joseph Pope (Toronto: Doubleday, Page & Co., 1921), p. 147-8.

shared interests in science, wildlife, and conservation.<sup>83</sup> Such pursuits would not likely have been viewed as incompatible with Van Cortlandt's other demonstrated interests in angling and hunting, resource discovery and exploitation and Ottawa's economic development. Nevertheless, it can be understood why a doctor evidently passionate about nature—and officially mandated to protect his community from an approaching plague with vaguely understood links to sanitation and water quality—might spark Canada's first industrial-pollution controversy with his letter to Campbell.

**“Nearly Everyone Here is on the Side of Sawdust”**

Campbell responded with haste and an apparent sense of resolve to address the concerns Van Cortlandt had raised in his May 30, 1866, letter—an initial reaction that may explain the optimistic tone of Van Cortlandt and St. Jean's report to City Council that November. On Aug. 25, 1866, a notice authorized by Campbell and signed by Witcher was sent to all Ottawa-area mill owners reminding them that the sawdust prohibition had been in place for “the past twelve months” and “during which time, it appears that in a majority of instances, the proprietors and occupants of such establishments have not devised, nor attempted to devise, any means by which the law may be practically observed.”<sup>84</sup> News of the planned pollution crackdown was conveyed by the *Ottawa Citizen* with a commingling of facts and editorial outrage under a sub-headline that bluntly described the government's planned actions as an “injustice to the manufacturing interest.” Allowing that “all these provisions are very good and very necessary where the fish of any river are productive of a greater revenue to the country than the manufactories upon it,” the news report continued: “But where the opposite is the fact, as with the Ottawa, the enactments are oppressive.” Turning the logic of the regulation on its head, the *Citizen* commentator reasoned that, “it is not proper to legislate for the few [i.e. fishermen] and ignore the rights of the many [i.e. mill owners and their thousands of employees and dependents]”—a viewpoint apparently oblivious to the rights of the “general public,” referenced in the Crown Lands directive, to have access to an unpolluted river.

The response from Ottawa-area lumber barons, emboldened no doubt by the views of the city's main newspaper, was swift and sure. Led by Joseph Merrill Currier, a prominent local sawmill owner and Ottawa's representative in the provincial legislature, they sent a Sept. 8 petition to Canada's governor general, Lord Monck, objecting to the proposed enforcement of the law and lobbying “against any restriction” because “it is impossible for them to prevent sawdust from falling into the river.”<sup>85</sup> While the lumbermen expressed a willingness “to apply any remedy to prevent injury to navigation from slabs and edgings” by grinding these larger pieces of wood refuse, being forced to keep sawdust out of the water “would cause them to abandon their businesses or erect steam mills elsewhere.” That threat led to a meeting between Currier and Campbell

83 For list of recent studies related to Van Cortlandt, see footnote 16.

84 *Ottawa Citizen*, “Pollution of Streams,” Aug. 31, 1866, p. 2.

85 Vieth, “Digest”. The subsequent recounting of events is also drawn from this digest of early Fisheries files.



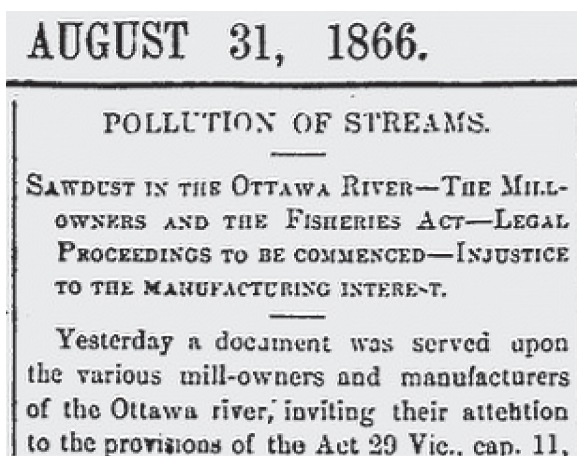


Figure 10. The *Ottawa Citizen* reports on the planned enforcement of anti-pollution legislation and the “injustice to the manufacturing interest”.

Source: *Ottawa Citizen*, Aug. 31, 1866. Google Newspaper Archives ([news.google.ca/newspapers](https://news.google.ca/newspapers))

on September 23, 1866, after which it was decided that any enforcement action against the Ottawa sawmills would be suspended pending a report on the sawdust situation by engineer Horace Merrill, the province’s superintendent of public works on the Ottawa River—and the man chiefly responsible for planning and building the Chaudière dams and slides that had become so crucial to the city’s lumber operations, and which were now at the heart of the pollution problem he’d been assigned to investigate. Merrill spent the next two months discussing the issue with local mill owners, with most of whom he had worked for years to improve the efficiency and productivity of Ottawa’s lumber industry. With Merrill on the case, indications were strong that the mill owners’ vocal lobbying would pay dividends.

Meanwhile, voices from other cities weighed in on the sawdust problem in Ottawa and beyond. Pointing to the impressive provisions of the 1865 anti-pollution law, but noting that, “it does not seem to have been anybody’s business to enforce them,” the *Montreal Gazette* argued on September 8 that “most of the finest rivers in the country are now in the most deplorable condition. Their fish are choked with sawdust or poisoned with the refuse of factories. Their channels are encroached upon and their eddies crammed with slabs and other mill rubbish.” The *Montreal* writer insisted that such a situation “amounts to a flagrant infringement of the rights of the public,” and asked: “Are millers to pollute public waters, to impede public navigation, to destroy the fisheries, to disfigure the streams, and thus in the end occasion to the public some enormous outlay to repair the injuries inflicted, simply because it is cheaper and easier to throw the rubbish into the water than to dispose of it in some other way?” Urging authorities “not to be turned aside from their duties,” the *Gazette* concluded by stating that if the capital’s river could be

better protected, “in a very few years we shall be spared any more such reproaches as Mr. Howe levels at the Ottawa—a turbid river full of slabs and sawdust.”<sup>86</sup>

Later that month, in a *Montreal Transcript* letter reprinted by the *Ottawa Times* under the headline “Sticklebacks vs. Sawmills,” the pseudonymous writer “Chaudière” defended mill owners by arguing that “when two opposed interests demand legislation, it is simply a matter of relative importance... The saw mill interest is one of the great powers of Canada. It feeds hundreds of thousands; it enriches the country with millions of capital; its productions are actually greater than those of the farm... To dare compare so paramount an interest with the convenience of all the unsavory sticklebacks that wag their sickly tails in the Ottawa is an insult to common sense.”<sup>87</sup>

The *Ottawa Citizen*, meanwhile, responded to the *Gazette* editorial (or a similar argument printed in Montreal) by insisting that out-of-season catches and other irresponsible forms of fishing—not sawdust pollution—must have been responsible for depleted stocks of the “finny tribe” in the Ottawa and other rivers: “We do not believe that any great good would result to the fishing interest if every mill in the Province should from to-day avoid polluting—as it is called—our rivers and streams with sawdust; but we do think that if the people of our villages, towns and cities would respect the laws of the country which have been framed to protect fish that we should then see a material change for the better.”<sup>88</sup>

And so the debate raged on, until the *Globe*’s correspondent in Ottawa added his October 16 viewpoint on the “saw-dust question”: “ridiculous as the title may seem, the question is a really important one, and deserving of much greater attention than it is receiving.” Insisting that obstructed navigation is “not the only evil the saw-dust is producing,” and that “the only conceivable cause” of rapidly declining fish populations in the Ottawa River is sawdust pollution, the *Globe* writer nevertheless observed that “the people in the vicinity think more of lumber and pine logs than they do of fish, for the very natural reason that the former are deeply concerned with their pockets... Nearly everyone here is on the side of sawdust.”<sup>89</sup>

A month after Van Cortlandt and St. Jean made their final presentation to City Council, Merrill delivered his report on the “sawdust question” to Whitcher and Campbell, on December 12. Though apparently never made public, the report’s essential conclusions were reported in Ottawa’s newspapers on February 2, 1867, after they had obtained copies of an amended notice sent to sawmill owners. Recalling the “earnest controversy” of the previous autumn, the *Times* expressed satisfaction that the new directive “makes an important modification in favor of mill owners, excepting saw-dust from the operation of the Act. This step has doubtless been taken with a view to embarrass as little as possible the action of

86 *Montreal Gazette*, Sept. 8, 1866, p. 2.

87 *Ottawa Times*, “Sticklebacks vs. Sawmills,” Sept. 28, 1866, p. 2.

88 *Ottawa Citizen*, Oct. 8, 1866, p. 2.

89 “Affairs at Ottawa—The Saw-Dust Question,” *Globe*, Oct. 16, 1866, p. 1.

the millers, and at the same time to preserve as near as possible the purity of our streams.”<sup>90</sup>

The notice sent to mill owners, signed by Campbell and published verbatim by local papers, stated that: “I am of opinion that it is practicable to dispose of all mill rubbish, except sawdust, otherwise than by throwing or drifting the same into public streams. The mill owners will be required to erect machinery for grinding waste stuff (such as slabs and edgings) and that the same be constructed and put into actual use.” According to the *Citizen*, “the conclusion is doubtless fair and practical.” The outcome represented a clear victory for sawmill owners and for Merrill, whose primary duty was to support the success of the industry. An entrepreneurial public servant who also owned a local foundry (in partnership with Currier!),<sup>91</sup> Merrill promptly sought and received clearance from Campbell to design, manufacture, and sell the slab grinders to be installed at the Chaudière mills. The aim was to reduce the number of large pieces of wood in the Ottawa River by turning them into sawdust before being dumped in the water—a mild improvement, theoretically, for boats were no longer forced to navigate around masses of floating wood waste made up of slabs and other large pieces of discarded material. But exemptions were granted to many mills and there was significant non-compliance with the slab-grinding order—most notably at the Chaudière operation owned by Booth, who was “recalcitrant about installing original grinders in 1867” and was found to have “constantly broken the regulations” in the years that followed.<sup>92</sup> In sum, then, the measures implemented in 1867 inevitably produced an *increase* in sawdust, the most pernicious pollutant coming from the Ottawa River mills, and later studies made clear that this waste product was continuing to accumulate in massive quantities in the waters below the falls.<sup>93</sup> While Campbell at first seemed resolved to address the problem, and Van Cortlandt appeared to be optimistic in November 1866 that the Ottawa might soon be free of serious sawdust pollution, this potential early conservation initiative was effectively thwarted by business interests and then “lost in the debates and negotiations leading to Confederation in 1867.”<sup>94</sup> The anti-pollution push never really yielded the intended regulations or results—a relatively sawdust-free Ottawa River—until after the heyday of the lumber industry was over in the early 20<sup>th</sup> century.

In 1869, after Van Cortlandt and two fellow members of the Ottawa Natural History Society returned from a trip to the Salmon River confident that its

90 *Ottawa Times*, Feb. 2, 1867, p. 2.

91 Sandra Gillis, “Merrill, Horace,” and Donald Swainson, “Currier, Joseph Merrill,” in *Dictionary of Canadian Biography*, Vol. 11, (Toronto and Quebec: University of Toronto/Université Laval, 1982).

92 Gillis, “Rivers of Sawdust,” p. 270.

93 Particularly powerful evidence of the enormous accumulation of sawdust waste in the Ottawa River was provided by engineers involved in the 1898-1900 construction of the Alexandra Bridge between Ottawa and present-day Gatineau, which spans the river about one kilometre below the Chaudière Falls, adjacent to the entrance to the Rideau Canal. The bridge project was rendered extremely complicated “owing to the heavy deposit of sawdust, slabs, etc., at the bottom of the Ottawa River,” explained the chief engineer, describing how “the sawdust deposit ran from shore to shore, the greatest depth found being 60 ft., with 20 ft. of water above it.” See Guy Dunn, “Construction of the Superstructure of the Royal Alexandra (Interprovincial) Bridge at Ottawa, Canada,” *Transactions of the Canadian Society of Civil Engineers*, Vol. XV, part II, Oct.-Dec. 1901, p. 176.

94 Gillis and Roach, *Lost Initiatives*, p. 30.

namesake fish could be restored to the Ottawa River tributary under Wilmot's propagation program, the old doctor and his friends still seemed confident that sawdust pollution would soon be halted. In publishing their upbeat report on the prospects of restoring salmon to the Ottawa Valley, Van Cortlandt and his fellow authors stated: "We have not felt called upon to enter upon the more enlarged question of the defilement of the Ottawa, as we believe that subject to be now engaging the close attention of the Fisheries Department."<sup>95</sup>

However, the "sawdust question" remained unresolved despite being raised over and over again in the years and decades that followed, with notable debates in Parliament taking place in 1871, 1878, 1888, and 1895. Extensive studies of the Ottawa River and other sawmill-polluted waterways were undertaken and reports produced in connection with each of the above spikes in political and public attention toward the issue.<sup>96</sup> But the pattern set in 1866-1867 repeated each time: earnest concern, strong words, and serious intention giving way, under industry pressure, to porous regulations, frequent exemptions and relentless pollution.

When the famous British author and social critic Oscar Wilde gave a lecture in Ottawa in May 1882, he diverted from his prepared remarks on trends in the art world to condemn the Ottawa River's all-too-evident problem with sawdust pollution. "This is an outrage," Wilde exclaimed. "No one has a right to pollute the air and water, which are the common inheritance of all; we should leave them to our children as we have received them." The *Ottawa Citizen* responded the next day with an acknowledgement that the sawdust problem "has long been admitted," and that smoke-filled skies "might also be a pity," but insisted that "Mr. Wilde goes too far when he advocates that no man should be allowed to carry on a business which produces either of these results."<sup>97</sup>

### The House that Booth Built

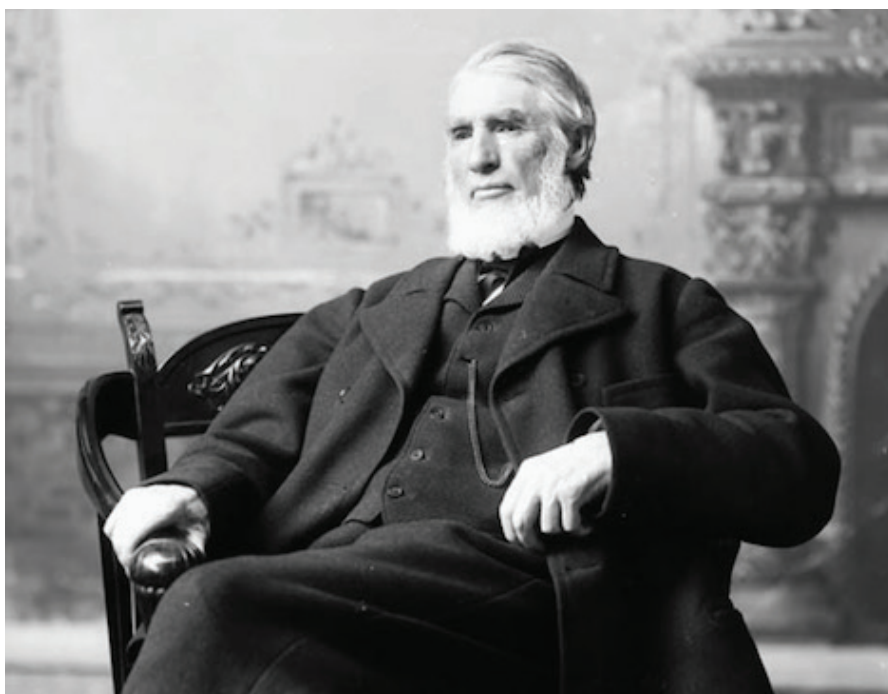
Industrialist J. R. Booth's well-documented reluctance to have his sawmills comply with anti-pollution rules meant that his Chaudière operation was dumping sawdust, as well as larger pieces of wood waste, into the Ottawa River virtually unabated from the late 1850s until the personal intervention of then-prime minister Wilfrid Laurier, in 1902, finally forced Booth's grudging conformity to the rules

95 T.D. Phillips, Henry McLardy, Edward Van Cortlandt, "Report on Salmon Breeding Ground," *Ottawa Citizen*, July 30, 1869, p. 2. The sawdust issue had flared again in the summer of 1869; among the numerous letters published in Ottawa at the time was one from Richard Nettle, the Quebec fisheries chief, who stated: "Though salmon and trout may and do force their way through water more or less impregnated with sawdust in their efforts to reach more pure and aerated streams, yet under no possibility can the ova of these fish vivify in beds tainted with this material... I cannot but believe that the intelligent and energetic mill-owners in this vicinity will devise some means to less the evils complained of, if not of altogether overcoming them." "Correspondence," *Ottawa Citizen*, Aug. 6, 1869, p. 2.

96 See, for example, H.H. Killaly, *Report on the Commission Appointed to Enquire into the Condition of Navigable Streams*, Ottawa: I.B. Taylor Printers, 1873; John Mather, *Inquiry Concerning Sawdust and Mill-Offals on the Lower Ottawa River and its Tributaries*, Ottawa: MacLean, Roger & Co., 1878; Sandford Fleming, "Report of Sandford Fleming, C.E.," 1889, in *Statement and Documents Submitted by The Ottawa and Gatineau Sawmill Owners on the Subject of The Prohibitory Law as to the Putting of Sawdust into These Rivers*, from J.R. Booth and others, Ottawa: Thorburn & Co., 1895; Vieth, "Report".

97 "Oscar Wilde—Lecture in the Grand Opera House," *Ottawa Citizen*, May 17, 1882, p. 1. Kevin O'Brien, *Oscar Wilde in Canada: An Apostle for the Arts*, Toronto: Personal Library Publishers, 1982, p. 79.

the following year.<sup>98</sup> Over that time, more than four decades, Booth appears to have been fined for sawdust-dumping violations on three occasions, the penalty amounting each time to \$20. He also weathered lawsuits launched in the 1880s and 1890s by Antoine Ratté, the owner of a downstream boathouse business, who complained that the waste from Booth’s mill had infringed on his riparian rights and made it impossible to run his enterprise effectively.<sup>99</sup> These actions appear to have cost Booth no more than \$2,000 in total—a pittance given the vast wealth the so-called “Monarch of the Ottawa Valley” accumulated in his remarkably long life.



**Figure 11.** Lumber baron J.R. Booth, the “Monarch of the Ottawa Valley” and the Ottawa River’s principal polluter in the 19<sup>th</sup> century, was hailed upon his death in 1925 as a key nation-builder by then-prime minister Mackenzie King.

Source: W.J. Topley, Library and Archives Canada, MIKAN 3212828.

Like Van Cortlandt, Booth claims a notable place in the history of the Parliament Buildings. Before work began on the planned legislative precinct in 1860, the contract to supply all wooden building material for the colossal structures was awarded to Booth, then a young, up-and-coming entrepreneur in the Ottawa Valley forestry sector. Winning the lucrative Parliament job proved vital to Booth,<sup>100</sup>

<sup>98</sup> See footnote 15: “Still Dumping in Sawdust—Accusations against Chaudière Mills—Is it Booth’s?—Early Morning Sight on Ottawa River Very Ugly,” *Ottawa Citizen*, June 28, 1907, p. 1.

<sup>99</sup> McLaren, “The Tribulations of Antoine Ratté,” p. 250.

<sup>100</sup> John L. Riley, *The Once and Future Great Lakes Country: An Ecological History* (Montreal: McGill-Queen’s University Press, 2013), pp. 182-83; Jamie Benidickson, “Booth, John Rudolphus,” *Dictionary of*



who went on to become the most prominent lumberman in the world, Canada's richest citizen for a time and—a fact not mentioned in his obituaries, and only faintly suggested in mostly biographical treatments—the single worst polluter of the Ottawa River, and perhaps the country, throughout the second half of the nineteenth century.<sup>101</sup> It was Booth's saws at the Chaudière, in greater amounts and for more years than those of his competitors, that were sending slabs and sawdust into the water that flowed, just moments later, past Parliament Hill. Booth was the most stubborn holdout among the group of Ottawa River mill owners who spent years and eventually decades resisting calls to curb the dumping of wood waste or to otherwise implement effective pollution-prevention measures in their industrial operations. Between the late 1860s and the first decade of the 1900s, as two generations of Canadian lawmakers sporadically sparred over the Ottawa River sawdust problem and did little to stop it, the assembled MPs and senators apparently drew no connection between the origins of the walls, floors, and ceilings of their own debating chambers and the befouled waters at the foot of Parliament Hill.

Upon Booth's death at age 99 in 1925, Prime Minister Mackenzie King eulogized the lumber baron warmly, stating that he “was indeed one of the fathers of Canada, and it is not too much to say that it is to men of such sterling worth and indomitable will as he possessed, more than aught else, that we owe the development of our Dominion.”<sup>102</sup> Such is the paradox posed by the “sawdust question”—arising as it did at a pivotal time and place for nineteenth-century Canadian nation-building—when examined in light of twenty-first-century perspectives about forsaken environments of the past.

Different forms of pollution prevailed along the Ottawa after the pulp-and-paper industry became the dominant forest-products sector in the capital region in the early twentieth century, continuing and intensifying the industry's negative impacts (in combination with continued untreated sewer and stormwater inflow) on aquatic life and overall water quality.<sup>103</sup> These threats, along with the construction of dams and other deleterious changes to the river's natural contours and millennia-old ebbs and flows, gradually gave rise to conservation efforts, including those championed in this century by the Ecology Ottawa and Ottawa Riverkeeper advocacy organizations, and the coalition of campaigners that gained

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*Canadian Biography*, Vol. 15, (University of Toronto/Université Laval, 2005).

101 For perspectives that do reference Booth's environmental toll, see Lee, *Lumber Kings*; Randy Boswell, “Cull of the Wild,” in *Fair Play and Daylight: The Ottawa Citizen Essays*, (Ottawa: Citizen Publishing, 1995); Randy Boswell, “Lumber industry sparked early tensions,” *Ottawa Citizen*, Oct. 6, 2014, p. C4.

102 “Premier Voices Deep Sorrow,” *Winnipeg Evening Tribune*, Dec. 9, 1925, p. 2.

103 See Editorial, “Ottawa River Pollution,” *Ottawa Citizen*, May 4, 1956, p. 7: “The river is polluted along most of its length, the worst stretch being from Chaudière Falls to Pointe Fortune. Municipal and industrial waste are both responsible, and an anti-pollution program will have to take both into account. The need to clean up the river is obvious. In its present state, the stream is a menace to human health as well as to wildlife. The Ottawa River represents one of the great natural resources of this part of the country. Industry and human health depend on it. It would be intolerable to throw this resource away by allowing the river to become an open sewer because of the expense of cleaning it up.”

the waterway a 2007 nomination—and finally, in August 2016, a much-delayed official designation—as a Canadian Heritage River.<sup>104</sup>



**Figure 12.** The much-tamed Chaudière Falls, as they appeared in 1936, looking westward. The site today is surrounded by hydroelectric installations and derelict buildings that date from the heyday of Ottawa-Gatineau’s lumber and pulp-and-paper industries.

Source: Canada Dept. of Interior, 1936, Library and Archives Canada, MIKAN 3328645.

Yet battles over the health and future of the Ottawa River are still being waged. Among these is a high-profile fight that has been carried out since 2014 (via demonstrations, media coverage, the courts, and the Ontario Municipal Board, the province’s land-use tribunal) over a proposed commercial-residential real estate development on and around the Chaudière Islands—the historic, mid-river heart of the Ottawa-Hull lumber industry. The controversy over Windmill Developments’ planned “Zibi” community (the Anishinabe word for “river”) has divided Ottawa-area Algonquin communities and prompted some indigenous activists and environmental advocates (including a group called “Free the Falls”) to insist on letting nature reclaim its long-muted waterfall and to reject commercial development of the adjacent islands in favour of parkland and a long-dreamed-of national aboriginal centre. Such objections to the commercial revitalization of the Chaudière brownfields have been voiced despite the developer’s stated intention to honour the region’s indigenous history and work closely with present-day First Nations to create one of Canada’s greenest, most sustainable new residential communities.

The legacy of J. R. Booth and his old Ottawa River sawmills are to be honoured as part of the Zibi development, the main thoroughfare of which—an

<sup>104</sup> Don Butler, “Ottawa River gets its heritage designation,” *Ottawa Citizen*, July 28, 2016, p. 1.

extension of the city's existing Booth Street—will bear his name. Among the relict Booth company buildings to be incorporated in the revitalization project is the lumber baron's former milling complex at the east end of Chaudière Island, which is to be transformed into a heritage restoration showcase, its surviving stone walls anchoring a new hotel-condominium high-rise offering stellar views of both the Chaudière Falls and Parliament Hill.

Largely forgotten, alas, are the other legacies of those nineteenth-century wood factories, including their undeniable effect on water quality and quality of life, their lasting impact on one of the county's great freshwater ecosystems, and their central role in Canada's first major industrial pollution controversy—a clash of competing economic, environmental and social interests at a time when residents of Canada's new capital were gripped by fear over the expected arrival of a cholera epidemic.

### **Conclusion: A new meaning for the word “pollution” in Canada**

Environmental historians in the United States and Britain have examined the mid-nineteenth-century beginnings of a shift in the primary meaning of the word “pollution” from a kind of moral contamination—as it had traditionally been understood—to the physical befouling of water, air or land, a concept of “polluting” that only emerged after the rapid industrialization experienced in the 1850s in the U.S., Britain and elsewhere, including Canada.<sup>105</sup>

“Before the Civil War, Americans rarely used the words ‘pollute’ and ‘pollution’ to refer to human degradation of the environment. Instead, the words spoke to violation, perversion, or corruption of moral standards,” observed Adam W. Rome in a seminal 1996 essay that pegged 1865 as a watershed year in the U.S. marking the gradual emergence of an important new meaning for the word pollution. Even afterwards, he noted, “Americans in the late nineteenth century lacked a common word for the many pollutants of streams. Organic wastes, including such manufacturing by-products as dust from sawmills and offal from slaughterhouses, generally were called ‘pollution’; but people often used other phrases to describe the liquid wastes produced in oil refining, mining, metallurgy, and chemical manufacture.”<sup>106</sup>

In Canada, use of this emergent, environmental sense of the word pollution seems to have been limited in the years prior to 1866 to references to the

105 See Adam W. Rome, “Coming to Terms With Pollution: The Language of Environmental Reform, 1865-1915,” *Environmental History*, Vol. 1, No. 3 (July 1996), pp. 6-28; Christine Meisner Rosen, “‘Knowing’ Industrial Pollution: Nuisance Law and the Power of Tradition in a Time of Rapid Economic Change, 1840-1864,” *Environmental History*, Vol. 8, No. 4 (October 2003), pp. 565-597; John Copeland Nagle, “The Idea of Pollution,” *UC Davis Law Review*, Vol. 43, No. 1 (November 2009), pp. 1-78; Bill Luckin, *Pollution and Control: A social history of the Thames in the nineteenth century*, (Bristol: Adam Hilger/IOP Publishing, 1986), p. 20.

106 Rome, “Coming to Terms With Pollution”, p. 6. Rome also noted in this essay that “the development of artificial methods of fish propagation” was one of the factors that “worked to dilute concern about river pollution” in the late-nineteenth century (p. 13). While this may generally be true, it is worth noting that while Wilmot and Van Cortlandt were enthusiastic about the potential of pisciculture to restore salmon and other fish to their former habitats, both also advocated for the protection of rivers from the severe sawdust pollution that had contributed to the extirpation of many species in Canadian inland waters.

improper disposal of human waste.<sup>107</sup> U.S. historians who have studied the term’s etymological evolution have noted the increasingly routine application of the word in that country by the 1870s in connection with discharges of not only sewage but sawmill refuse and some other substances dumped or leaked into rivers and streams. Furthermore, this gradual expansion of the word’s meaning to encompass industrial emissions of various kinds—and to increasingly emphasize the “environmental connotation” of a term that today “dominates popular discourse and the law”—has been identified as a pivotal development in the emergence of our modern understanding of pollution as an evidently unnatural, frequently harmful discharge of wastes that can adversely affect water, air, soil, wildlife, and human health.<sup>108</sup>

In Britain, the transformation of the word’s meaning has been linked to a conceptual awakening in the 1850s and 1860s about the environmental—rather than moral—genesis of disease, specifically cholera, in overcrowded and dirty London. Between severe bouts of cholera in Britain in 1854 and 1866, “there were interactions, at every level, between the social and the natural,” Bill Luckin writes in *Pollution and Control*, his 1986 social history of the Thames.

We have seen vocabularies transposed, new imageries introduced into political debate and equations made between social and environmental stability... What may be detected from the early 1860s are new sets of environmental and political interactions as well as shifts in the rhetoric of pollution itself. The classic mid-nineteenth-century vocabulary of ‘plague’, ‘pestilence’, ‘corruption’ and ‘decay’ underwent gradual modification and, when cholera reappeared in 1866, it was depicted in terms which were more self-consciously analytic than fatalistic or apocalyptic.<sup>109</sup>

A key moment in the popularization of the word pollution as encompassing industrial wastes was the May 18, 1865, appointment of a British royal commission to inquire into “The Best Means of Preventing the Pollution of Rivers,” as its official title stated.<sup>110</sup> This inquiry, which issued its first report in March 1866,

107 In 1859, in an article published in the important Elkanah Billings-edited periodical *The Canadian Naturalist and Geologist*, the avid conchologist (shell collector) and social reformer Philip P. Carpenter was vividly describing the squalor of certain Montreal neighbourhoods and linking the “disgusting” backyard sewage swamps of low-end rental dwellings on Rue St-Antoine to diseases such as cholera. “When the spring thaw comes,” wrote Carpenter, a British-born clergyman who led sanitary reform projects in England before emigrating to Montreal in the late 1850s, “the whole mass of corruption, which has been accumulating on the surface and among the snow, is set free; not only sinking into the unpaved back yards, and there laying by a deep store of pollution to rise up at the bidding of the summer sun, in the form of fever or cholera; but running into and around the dwellings, soaking into the floors, and sponged up by the timber walls...” Ironically, Carpenter noted that the “only health-spot” in the set of houses he observed was a pipe—“rising through the foetid drainage of the court”—that “discharges the pure water of the Ottawa for the pallid occupants.” See Philip P. Carpenter, “On the Relative Value of Human Life in Different Parts of Canada,” *The Canadian Naturalist and Geologist*, Vol. 4, No. 3 (June 1859), p. 183.

108 Nagle, “The idea of Pollution,” p. 16.

109 Luckin, *Pollution and Control*, p. 20.

110 Rome, “Coming to Terms With Pollution,” p. 10; Robert Rawlinson et al., *First Report of the Commissioners Appointed to Inquire into the Best Means of Preventing The Pollution of Rivers*, Vol. 1. London: George Edward Eyre and William Spottiswoode, Queen’s Printers, 1866.

aimed to address mounting concerns about the foul state of the Thames and other rivers that were not only being used to flush away the untreated sewage of the nation but increasingly to carry off the chemical wastes and other discarded material produced by paper mills, tanneries, and a multitude of other manufacturing plants found throughout the country by the mid-nineteenth century.

It is noteworthy, then, that the sawdust controversy that arose in this country at the end of May 1866—mere months after this landmark British royal commission published its first set of recommendations—appears to represent the earliest high-profile use in Canada of the word “pollution” in a public discussion about the contentious disposal of an industrial byproduct.<sup>111</sup> Van Cortlandt and fellow health officer St. Jean referred to “sawdust and other *recrements* of sawmills” on the Ottawa River and highlighted the “*insalubrious*” impacts of discharges from the Chaudière lumber factories, all of which were characterized in the Central Board of Health records as “alleged (sic) *nuisances*”—the word most commonly attached at that time to the kinds of industrial wastes that would soon come to be labeled “pollution.” But within a few months of the emergence of the sawdust issue, newspapers in both Ottawa and Montreal—as shown above—were employing the term “pollution” and its variations to describe the dumping or drifting of sawdust into the Ottawa River and other waterways in Britain’s North American provinces. Most notable in this respect were the aforementioned *Ottawa Citizen* story prominently headlined “Pollution of Streams” from August 1866, the *Montreal Gazette* editorial from September 1866 demanding that millers not be permitted “to pollute public waters,” and the *Citizen* rebuttal of October 1866 that warned against a government decision to “avoid polluting—as it is called—our rivers and streams with sawdust.” Note how the use of the term “polluting” in this context was considered so novel that it prompted the *Citizen* writer to draw special attention to the editorial’s phrasing.<sup>112</sup>

It is not a trivial matter that the cholera-linked beginning of the Ottawa River sawdust debate and the redefining of the idea of “pollution” in Canada occurred in a simultaneous and intertwined fashion in 1866. As Rome pointed out in his exploration of the term’s transformation during that era in the U.S., “words are important guides to the ways people perceive the world. Words reveal deeper structures of values; by limiting or extending the range of the thinkable, they also shape how people act. For historians, changes in language—the transformation of word meanings and the development of new vocabularies—can help in analyzing the ways people responded to profound social changes.”<sup>113</sup>

111 At the 2014 conference where an early version of this paper was presented, an American participant kindly suggested my casual use of the word pollution was anachronistic because this term was not yet in common use in the 1860s to describe contaminated waterways. This intriguing intervention, which raised an issue I had not considered, was promptly (and utterly fortuitously) answered by one of my slides, which showed the aforementioned Aug. 31, 1866 *Ottawa Citizen* headline about the sawdust issue: “Pollution of Streams.” The questioner has my gratitude for helping to make clear that this usage represented a very early and historically significant expansion of the word’s meaning in North America.

112 “Pollution of Streams,” *Ottawa Citizen*, Aug. 31, 1866, p. 2; Editorial, *Montreal Gazette*, Sept. 8, 1866, p. 2; Editorial, *Ottawa Citizen*, Oct. 8, 1866, p. 2.

113 Rome, “Coming to Terms With Pollution,” p. 7.



The post-1850s evolution in the popular meaning of the word “pollution” parallels what the British social anthropologist Mary Douglas famously observed about the ever-changing, culture- and time-specific perception of what constitutes harmful waste. Intriguingly, the most famous passage from her 1966 masterwork, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*, is foregrounded by a discussion of how ancient notions of dirt were profoundly transformed when the germ theory—so much a product of Snow, Koch, and the discovery of the cholera microbe—was proven, “the most radical revolution in the history of medicine” and an event so transformative “that it is difficult to think of dirt except in the context of pathogenicity.”<sup>114</sup> However,

If we can abstract pathogenicity and hygiene from our notion of dirt, we are left with the old definition of dirt as matter out of place. This is a very suggestive approach. It implies two conditions: a set of ordered relations and a contravention of that order. Dirt, then, is never a unique, isolated event. Where there is dirt there is system.<sup>115</sup>

The idea translates to “pollution means different things to different people at different times” in Nagle’s succinct summary of Douglas’s groundbreaking insight.<sup>116</sup> In Peter Thorsheim’s history of air pollution in Britain, he also cites Douglas’s idea that pollution is “a malleable and historically contingent concept” to illuminate his study of the way British views about coal smoke evolved over time, only belatedly coming to be seen as “pollution” at all.<sup>117</sup> And Luckin’s social history of the Thames, *Pollution and Control*, its opening epigraph the above quote from *Purity and Danger*, similarly links changes in the “rhetoric of pollution” surrounding cholera epidemics to Douglas’s notion that “environmental concern and anxiety never ‘stand still’ . Precisely what determines, within a given culture, what is environmentally acceptable, and how what is acceptable changes over time, are complex issues.”<sup>118</sup>

Dr. Van Cortlandt’s letter of May 1866—sent at the height of that year’s cholera scare and meant to address a complex, coalescing set of social and environmental challenges facing the community its author was entrusted to protect from harm—can be seen in this context as an attempted reordering of a contested social space, a bid to remove a potentially hazardous form of “dirt,” a substance newly seen as “out of place” and thus in the midst of being redefined as “pollution.”

Re-characterizing Ottawa River sawdust as a problematic pollutant did not, in fact, lead to serious mitigation efforts in 1866—even amidst the very fears about cholera that had thrust the sawdust issue onto the public agenda. Nor, in fact, were such efforts made at any time in nineteenth-century Ottawa. But the issue’s strong association in Canada with such a key indicator of the emerging (though still embryonic) societal awareness of nature’s vulnerability to human activity—and

<sup>114</sup> Douglas, *Collected Works*, p. 36.

<sup>115</sup> *Ibid.*, p. 36.

<sup>116</sup> Nagle, “The Idea of Pollution,” p. 45.

<sup>117</sup> Thorsheim, *Inventing Pollution: Coal, Smoke, and Culture in Britain since 1800*, (Athens: Ohio University Press, 2006), p. 194.

<sup>118</sup> Luckin, *Pollution and Control*, pp. 20-21.

the potential negative impacts of such “polluting” activity on human communities themselves—underscores the significance of Dr. Edward Van Cortlandt’s early push for a cleaner Ottawa River in both Canadian environmental history and the annals of the country’s public health system.