An Elusive Allusivity:
Paradox in the Representation of Plate Glass in Canada, 1851-1900

Stephanie Weber

A Thesis in the Department of Art History

Presented in Partial Fulfillment of the Requirements
For the Degree of Master of Arts (Art History)

Concordia University
Montreal, Quebec, Canada

July 2020

CONCORDIA UNIVERSITY
School of Graduate Studies

This is to certify that the thesis prepared

By: Stephanie Weber

Entitled: An Elusive Allusivity: Paradox in the Representation of Plate Glass in Canada, 1851-1900

and submitted in partial fulfillment of the requirements for the degree of

Master of Arts (Art History)

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Signed by the final examining committee:

_____ Examiner
Dr. Nicola Pezolet

_____ Thesis Supervisor
Dr. Kristina Huneault

Approved by _____
Dr. Nicola Pezolet, Graduate Program Director

_____
Dr. Annie Gérin, Dean, Faculty of Fine Arts

ABSTRACT

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Stephanie Weber

This thesis attempts to define a visual culture of plate glass in Canada during the second half of the nineteenth century. I approach this material through descriptions and depictions in Canadian periodicals of Victorian era structures that utilized large expanses of plate glass, namely, Canadian versions of the "Crystal Palace" exhibition building, and modern mass market department stores with large storefront display windows. In Canadian publications, these plate glass surfaces often take on certain metaphorical significance, coming to stand in for modernity, to signify purity by their clarity, or to promise a quintessentially modern honesty and openness, as their solid surfaces maintained visual limpidity. However, though glass is allusive in many ways, its signification also remained elusive. Any meaning that glass may encompass is always accompanied by its own opposite; glass can change in a moment from lucid to reflective, from refracting beams of bright light to darkening and dulling, and though it is a physically protective layer, it also permits unmitigated visual connection. The relationship of nineteenth-century Canadian periodicals to the material is marked by this ambiguity. I suggest that glass's physical capacity for dualism is an apt metaphor for the way that the meanings it signified were often contradictory, even when simultaneous. I argue that in the Canadian context, the paradoxes encompassed by the developing cultural imaginaries around glass are mirrored by the paradoxes of Victorian Canadians' ambiguous and conflicting relationships with nationalism and modernization.

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude for the guidance, encouragement and generosity of my supervisor, Dr. Kristina Huneault. Thanks also to Dr. Nicola Pezolet for your inspiration, knowledge and advice. I also wish to thank the other members of the Concordia Art History faculty, in particular Dr. Elaine Cheasley Paterson for your transformative suggestions and support. I am grateful also to Dr. Kirk Niergarth for longstanding support and for igniting my enthusiasm for Canadian history.

Thanks to everyone in my cohort!

Thank you to The Gail and Stephen A. Jarislowsky Foundation and the Concordia Department of Art History for the financial support of this project.

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Introduction: The Material of the Nineteenth Century

The long nineteenth century saw space in Europe and its colonies reorganized on a mass scale. This new figuration of space, especially during the period surrounding the Industrial Revolution, was in part a function of revealing—of making visible. It is no coincidence that this era also saw the birth of technologies that allowed the widespread integration of expansive glass surfaces into more and more of its architectural space, so much so that the glass surface, and its architectural corollaries, have become visual emblems of the era. New structural types, utilizing glass and allowing visibility, were solidified. The Victorian museum was developed in order to render objects and information observable, placing artifacts behind glass cases for investigation.[1] Parisian "arcades," the glass-roofed street spaces of long shop window corridors gave rise to the wandering "flâneur," that modern, masculine figure who came to encapsulate a distinctly Victorian culture of visibility, access, and objectivity. The Industrial Revolution is often conceptualized in the glimmering shadow of the Crystal Palace, the sprawling paradigm of nineteenth-century engineering that prompted almost immediate global fascination and replications. Both literally and metaphorically, glass in the Victorian era allowed a new immediacy between seer and seen, revealing spaces previously hidden and providing both a transparent visual link and a physical barrier between people and objects that were set apart to be examined and organized.

In Canada, plate glass saw a similar trajectory, being increasingly inlaid in urban shopfronts in industrializing cities, maintaining visibility in both commercial and museum spaces, and constituting large structural areas of the buildings constructed to house exhibitions of industry and agriculture throughout the Dominion. Canadian society, like that of England, was

1 Timothy Mitchell, *Colonizing Egypt* (Berkeley: University of California Press, 1998), 7.

restructured as a result of the industrial revolution. This thesis questions what role glass played in the visual culture of Canada in the era leading up to, during, and following Confederation. It focuses mainly on plate glass in Toronto and Montreal as the urban, industrializing centres of Upper and Lower Canada, respectively, and later of the confederated nation. As in England, many Canadians were involved in the project of constructing a narrative of progress and civilization, and if glass had come to ideologically encompass modernity throughout the British empire, its presence and manufacture in Canada's leading urban centres may well have suggested a country coming into its own as a self-sufficient, industrializing nation.[2] However, Victorian conversations around Canadian nationalism were complicated by the way that Canada's identity was still, for many, inextricable from its connection with Britain.[3] The vast array of representations of glass in Canadian periodicals, similarly contradictory and inconsistent, are reflective of this political and social ambiguity. I suggest that glass's physical capacity for dualism is an apt metaphor for the way that the meanings it signified were often contradictory, even when simultaneous. I seek to explore the hypothesis that in the Canadian context, the paradoxes encompassed by the developing cultural imaginaries around glass are mirrored by the paradoxes of Victorian Canadians' ambiguous and conflicting relationships with nationalisms and modernization.

In part, this text functions as a work of social history, as I examine cultural production including illustrations, articles, paintings, photographs and advertisements in order to explore their meanings in relation to the social trends occurring across the nation at the time. Upper and

2 In her visual history of glass in the Victorian era, Isobel Armstrong traces the way glass "suddenly became a modern material as an environment of mass transparency, never before experienced, rapidly came into being." Isobel Armstrong, *Victorian Glassworlds: Glass Culture and the Imagination, 1830-1880* (Oxford: Oxford University Press, 2008), 1.

3 Carl Berger, *Imperialism and Nationalism, 1884-1914: A Conflict in Canadian Thought* (Toronto: Copp Clark, 1969), 1-2.

Lower Canada, as well as the surrounding British colonies, were marked by radically different ideas of what a nation should constitute, coming from a variety of groups both before and after Confederation. As evidenced by the failure of the 1840 Act of Union, even attempts at solving ethnic antagonism, economic stagnation and political conflict often resulted in disagreement across identity lines.[4] After 1867, the ideal of a unified Canada evaded the grasp of many who still held romantic notions of harmony; instead, provincial "schools questions" and organized political resistance in the wake of discriminatory national policy brought questions of religious and linguistic differences repeatedly to the fore throughout the newly-created Dominion.

In one sense, my approach to this history is aligned with that of material culture since one of my focuses is on the utility and physical presence of one material. Historians such as Karen Harvey suggest the utility—even the necessity—of scholarly attentiveness to physical traces of the past for what they can offer as points of access to historical moments.[5] By beginning investigations with physical objects, one can start to reconstruct the visual culture of an age, connecting fragments of ephemera to suggest what people were seeing and experiencing during particular periods. As Arjun Appadurai describes, attentiveness to the "lives" of historical objects can also reflect important revelations concerning their exchange value, and thus to question and reveal the political relationship between exchange and value.[6] Architectural historians, too, emphasize the importance of considering the relationships between people and structures in our understanding of the past. Thomas A. Markus, for example, suggests considering buildings not just in terms of their aesthetics or function, but as "social objects," allowing us to understand the

4 Maurice Séguin, "Second Capitulation of the French Canadians, 1839-1842," in *The Constitutions that Shaped Us: A Historical Anthology of Pre-1867 Canadian Constitutions,* ed. Guy Laforest, Eugénie Brouillet, Alain G. Gagnon, and Yves Tanguay (Montreal/Kingston: McGill-Queens University Press, 2015), 320-336.

5 Karen Harvey, *History and Material Culture: A Student's Guide to Approaching Alternative Sources* (London: Routledge, 2009), 1.

6 Arjun Appadurai*, The Social Life of Things* (New York: Cambridge University, 1986), 3-4.

ways that the power dynamics implicit in the symbolism and physical delineation of space in architecture have both shaped and been shaped by historical moments.[7]

Though I borrow from these ideas, this thesis also differs significantly from these avenues of approaching history. I access glass as a material, as well as glass spaces, through that which illustrates or describes it, not through the examination of any physical artefacts. To read these sources, I utilize a form of semiotic analysis derived from architectural theory to identify and discuss the mythologies around and language for glass. In 1969, designer and theorist Charles Jencks argued for the applicability of semiology to architecture in his classic text "Semiology and Architecture," which suggested that architecture, like language, could be read; he argued for the categories of form, function and "technic" in extrapolating the multivalent meanings of architectural space.[8] Using this argument for the relevance of semiology, I explore the possibility of mapping a cultural imaginary of glass in Victorian era Canada in order to begin to define a nation-specific visual culture of glass. My use of the "cultural imaginary" draws from one anthropological use of this heterogenous term, which defines the "shared mental life" of a culture, an ethos held in common by a people with shared formative experiences.[9] The literary critic Chris Brooks suggests the term "symbolic realism" for the way Victorians comprehended their visual culture, a manner characterized by the tendency to understand architectural material and elements for their "real" or physical functions (in this case, the multiple phenomenological qualities of glass panels) simultaneously with, and inextricably linked to, both their symbolic and referential meanings.[10] Brooks argues that the boundaries between these meanings were barely

7 Thomas A. Markus, *Buildings and Power: Freedom and Control in the Origin of Modern Building Types* (London: Routledge, 1993), xix-xx, 3.

8 Charles Jencks, "Semiology and Architecture," in *Meaning in Architecture,* eds. Charles Jencks and George Baird (New York: George Braziller, 1969), 24.

9 Claudia Strauss, "The Imaginary," *Anthropological Theory* 6, no. 3 (2006): 322-323.

10 Chris Brooks, *Signs for the Times: Symbolic Realism in the Mid-Victorian World* (London: George Allen & Unwin), 149.

perceptible in subjective experience, so the clarity of transparent glass might be understood by contemporaries both according to its literal function of conducting sight and light, and simultaneously through any cultural associations with clarity, including cleanliness, morality, or truth. Because many of these concepts were later fundamentally embraced by twentieth-century modernists, many seminal texts of architectural history have tended both to focus on glass as a material characterizing these later modernist efforts, and to see the glass-heavy Victorian structures that I examine in this thesis as precursors to modernist designs, early examples of the forms which came to dominate the zeitgeist some decades later.[11] This thesis, however, seeks to address these structures, and the glass within them, on their own terms and in the particular context of Canada in the nineteenth century.

Theories of vision, which conceptualize the orientation and understanding of both viewers and sight itself, also stimulate the examination of glass as a visual medium. Theorist Jonathan Crary has argued that a major shift in the way vision was understood and experienced occurred in the early nineteenth century, allowing the modernist visual revolution that many have attributed to some decades later to occur.[12] Crary suggests, citing Walter Benjamin and Theodor Adorno, that traditional understandings about the nature of vision, which hinged upon the concept of the universal objectivity and autonomy of visual order, were disrupted by technologies that insisted upon vision's physiology and thus subjectivity.[13] Crary argues that it was new "scientific" visual devices that largely constituted this shift—including the

11 These texts include those of the German historian Siegfried Giedion and many of his contemporaries, as well as architect-historians writing in the twentieth century who sought to establish a teleological narrative pointing toward the progress of modernization. See Siegfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History* (New York: Oxford University Press, 1970); Panayotis Tournikiotis, *The Historiography of Modern Architecture* (Cambridge, Mass.: MIT Press, 1999), 231-238.

12 Jonathan Crary, *Techniques of the Observer: on Vision and Modernity in the Nineteenth Century* (Cambridge, Mass.: The MIT Press, 1992), 19-21, 69, 77.

13 Carsten Strathausen, "Eichendorff's *Das Mamorbild* and the Demise of Romanticism," in *Rereading Romanticism,* ed. Martha B. Helfer (Amsterdam: Brill Rodopi, 2000), 383.

phenakistoscope, the thaumatrope, the diaorama, the kaleidoscope, and the stereoscope, the distribution and popularity of which prompted scientific questioning of the "validity of visual paradigms."[14] I suggest that the primary presence of glass as a mediating lens in devices such as the stereoscope should also be considered significant. In the Victorian era, glass proliferated as a visual medium: obscuring, magnifying, protecting and reflecting images that lay beyond it and before it. The centrality of the material in technologies that prompted a societal reckoning with the experience of vision itself suggests that its symbolism as clarifier or revealer should be extended to an examination of its presence elsewhere. In a related manner, Guy Debord's theory of the society of "spectacle" argues that inherent in modernity was the increasing centrality of image and representation rather than lived experience.[15] Debord's contention that image supplants and obscures authenticity with commodity fetishism and consumerism is directly related to the rise of a mass consumer culture, and many visual and architectural changes that accompanied the emergence of that culture can be traced to the reorganization of cities in the nineteenth century. Shop windows, glass-encased displays and even photography increasingly oriented consumerism toward the experience of spectating, and the role of glass in facilitating new lines of vision should not be understated. I propose that the way glass functions, as transparent mediator between seer and seen, is a material signifier of the trend toward a more visual society.

My thesis begins with a historical overview of glass production in Canada and provides some general information about the popularity and industrial sources of the plate glass of structures in Toronto and Montreal. I construct a factual history of glass in Canada, with a focus

14 Strathausen, "Eichendorff's *Das Mamorbild* and the Demise of Romanticism," 383.
15 Guy Debord, *The Society of the Spectacle*, 3rd ed., trans. Donald Nicholson-Smith (New York: Zone Books, 1994).

on window glass, upon which to build a history of its signification. With this acknowledged, the bulk of the text will be concerned with the close examination of Canadian primary sources related to architectural plate glass in the nineteenth century. I first examine Canadian periodical literature dating from the Victorian era that encompass descriptions of both real buildings and imagined glass spaces. Here, I build the basis for a metaphorical and symbolic conception of plate glass for these writers. Following this are two major sections, which each address one structural type that extensively utilized plate glass: exhibition buildings, often termed "crystal palaces," and glass storefronts. These sections involve an extended consideration of primary sources, both visual and textual, that depict or describe these buildings. The final section of the thesis connects my findings from the previous sections to broader conclusions concerning more general trends. It is here that I will seek to answer my original research question concerning how glass culture functioned and was understood in Canada.

This thesis engages with glass as a material because of the way it can embody a multiplicity of functions simultaneously: as glass reveals, so too does it protect the objects behind it, and as it facilitates an experience of visual immediacy between the spaces on either side of it, it also negates the transfer of sensory experience other than sight by its material solidity. If it is transparent in one instant, in the next it might refract light, shooting rays off its surface and glinting in the sunlight, or appear to glow from within, casting a wash of light from its interior to observers. If the light changes, a surface may suddenly reflect the image of the onlooker in it rather than reveal what lays beyond. The capacity of glass to embody a symbolic ideal—of commodity display or house of curiosities, of nationhood or modernity—is complicated by its ambiguity. If the role that glass plays can literally change in an instant, the metaphorical or philosophical meanings that have been ascribed to it are necessarily in a constant state of tension. This thesis will engage with this tension, suggesting that glass would have

embodied a multiplicity of symbolic and referential meanings in an era characterized by shifting political alignments, competing visions of national identities, and a complicated and fluctuating relationship with the concept of "Canada" itself.

1. Modernization and Glass Manufacture in Canada before 1900

Despite the strong aesthetic associations of the material with modern architecture, glass production has been traced as far back as 3600 BCE, with anthropologists and historians variously crediting Mesopotamia, Egypt, or Syria as the birthplace of glassmaking.[16] Its transparency came later, with the incorporation of manganese dioxide, a development likely introduced around the first century BCE.[17] As a result, clear windows were employed in Roman architecture, though they remained uncommon.[18] Venetians, who had developed a process for making very clear glass, shipped window glass to Britain in the fourteenth and fifteenth centuries, but the product remained rare and costly. This development coincided with the invention of spectacles around the end of the thirteenth century, another transparent glass item that facilitated clear vision.[19] Glass windows, however, were not in general use in Britain until after 1700.[20] The popular architectural use of glass, then, was tied directly to the process of industrialization.

Tax on window glass in Britain was high for the majority of the long eighteenth century, which hindered the development of glass manufacture in Britain during a period otherwise

16 Gerald Stevens, *Early Canadian* Glass (Toronto: The Ryerson Press, 1964), xi; *GlassOnline: The World's Leading Glass History Portal*, s.v. "A Brief History of Glass," 1996-2011, accessed September 18, 2019, https://web.archive.org/web/20110415194738/http://www.glassonline.com/infoserv/history.html.

17 Douglas Main, "Humankind's Most Important Material, *The Atlantic,* April 7, 2018, https://www.theatlantic.com/technology/archive/2018/04/humankinds-most-important-material/557315/.

18 Douglas Main, "Humankind's Most Important Material."

19 E. C. Watson, "Science in Art: The Invention of Spectacles," *Engineering and Science* 17, no. 5 (February 1954): 14.

20 Stevens, *Early Canadian Glass,* xii.

characterized by rapid industrial growth.[21] It was only during the nineteenth century that windows in England became larger and more common. In part, this change was a result of shifting attitudes about the importance of windows. Social reformers argued for the health-giving benefits of more light and air circulation, while aesthetic tastes also seemed to change, resulting in the proliferation of large plate glass storefronts and glass-paneled sashes.[22] In the 1820s, a period of expansion in England termed the "building boom" resulted from the exorbitant window tax being lowered by half at the same time that the permittable number of untaxed windows was increased. By 1845, the tax on glass was repealed entirely by Sir Robert Peel's government, reducing the price of window glass by nearly half during another boom period of urban growth in the region.[23] At mid-century, glass was regularly manufactured in England, as is evidenced by the display of a number of English glass companies at the Great Exhibition of 1851.[24] The panes that made up the famous Crystal Palace were constructed at the Chance Brothers Factory in Smethwick, near Birmingham, solidifying Britain's claim to industrial superiority by its association with one of the most industrially impressive and aesthetically imposing structures of the century.[25]

In Canada, it is possible that glass production predates British control. The Governor of New France, the Marquis de Denonville, wrote in 1685 to the Minister of the State of France on the possibility of establishing a glassworks in Canada, remarking that it would be possible to establish such an operation but lamenting that the lack of labour meant it would likely be

21 Frederick Cooke, *Glass: Twentieth-Century Design* (New York: E. P. Dutton, 1986), 15.
22 Antony Pacey, "A History of Window Glass Manufacture in Canada," *Bulletin of the Association for Preservation Technology* 13, no. 3 (1981): 33.
23 Cecil D. Elliott, *Technics and Architecture: The Development of Materials and Systems of Buildings* (Cambridge, Mass.: The MIT Press, 1992), 128.
24 A number of American glassmakers also exhibited, as well as a variety from throughout Europe. Cooke, *Glass: Twentieth Century Design,* 17.
25 Stephen Eskilson, *The Age of Glass: A Cultural History of Glass in Modern and Contemporary Architecture* (London/New York: Bloomsbury Academic, 2015), 7-8.

prohibitively expensive.[26] Later, a 1712 report asked King Louis XIV to send "all sorts of artisans, especially potters and a glassblower."[27] Since there is clear evidence that potters were sent immediately, it is probable that glass-blowers were sent as well.[28] Additionally, some historians have hypothesized that medicine vials used by Jesuits in this period were made regionally, though the origins of these delicate objects, and thus this theory, remain unproven.[29]

Subsequently, Canada's position as a colony of Great Britain meant that it was expected to be both an exclusive market for manufactured English goods and a supplier of England's raw materials, but not to manufacture its own industrial goods.[30] This intention was encapsulated in 1763 by the Royal Proclamation issued to Governor Murray following Great Britain's acquisition of the North American territory previously held by the French: "you do not, upon any pretence whatever, upon pain of Our highest Displeasure, give your assent to any Law or Laws for setting up any Manufacturers and carrying on any Trade, which are hurtful and prejudicial to this Kingdom."[31] Additionally, until the enaction of the Jay Treaty, in 1796, Canadians were unable to trade freely with the United States, but in the period following it, it is likely that much of the early nineteenth-century glass found in Canada originated from across the border.[32] Though importation of plate glass was likely the norm during the eighteenth century, Canada's roads were often uneven and unreliable, and thus proved a hazardous environment for the

26 Hilda Spence and Kevin Spence, *A Guide to Early Canadian Glass* (London: Longmans, 1966), 13; "Canadian Glass," Canadian Museum of History, accessed September 19, 2019, https://www.historymuseum.ca/cmc/exhibitions/hist/verre/vecan01e.html.

27 Gédéon de Catalogne, "Report on the Seignoiories and Settlements in the Districts of Quebec, Three Rivers, and Montreal, by Gédéon de Catalogne, Engineer, November 7, 1712" (1712), Quoted in Spence and Spence, *A Guide to Early Canadian Glass,* 13.

28 Spence and Spence, *A Guide to Early Canadian Glass,* 13.

29 Gerald Stevens, *Canadian Glass c. 1825-1925* (Toronto: The Ryerson Press, 1961), 3; Peter Unitt and Doris Unitt, *Treasury of Canadian Glass* (Peterborough: Clock House Productions, 1969), 8.

30 Spence and Spence, *A Guide to Early Canadian Glass,* 16.

31 George R., "Instructions to Governor James Murray," (1763) quoted in Pacey, "A History of Window Glass Manufacture in Canada," 33.

32 Spence and Spence, *A Guide to Early Canadian Glass,* 16.

transportation of such breakable imports. A 1789 shipment of window glass to the British fort of Amherstburg, Ontario, was reported to have 206 of 452 panes broken upon receipt.[33]

Despite these inhibiting conditions, several attempts were made at regular Canadian glass production in the early nineteenth century. Glasshouses in Canada existed throughout present-day Ontario and Quebec in the nineteenth century. While glass itself can be fabricated without considerable specialized skill, the formation of commercial-grade window panes, bottles and tableware would have required specialized knowledge, so it was necessary to import skilled workers from Europe, England and the United States.[34] The earliest Canadian glasshouse, the Mallorytown Glass Works of Upper Canada, has an uncertain founding date, variously dated to the 1820s, the 1830s or 1840.[35] Mallorytown used local materials and produced not window glass but a variety of table wares that are rare today and often unverifiable, though chemical analysis has made more verification possible in the last twenty years.[36] The founding date of this factory, however, is almost mythical, and the earliest dates are substantiated only by word of mouth, since archival records are yet to be discovered. For lack of evidence, then, the existence of glassmaking in Canada before 1840 is uncertain.

In the mid-nineteenth century, when Canada's population, and thus Canada's housing and industrial demands, were rapidly expanding, the country accordingly developed the infrastructure to provide plate glass to its own population. By 1851, when Canada's population had increased to 2.4 million, Canadians could afford not just houses but also luxury goods to fill them with, and the country's economy had also grown enough to afford domestic workers the opportunity to

33 Pacey, "A History of Window Glass Manufacture in Canada," 33.
34 Spence and Spence, *A Guide to Early Canadian Glass,* 16.
35 Stevens, *Canadian Glass c. 1825-1925*, 6; Janet Holmes, "Glass," in The Canadian Encyclopedia, 2006, last modified December 16, 2013, https://www.thecanadianencyclopedia.ca/en/article/glass.
36 Stevens, *Early Canadian Glass,* 12-13; J. Victor Owen, "Geochemical Characterization of Alleged Mallorytown Glass (c. 1839-40) in the Royal Ontario Museum and Its Distinction from Contemporary Upstate New York Glassware," *Canadian Archeology* 27, no. 2 (December 2002): 287.

produce a portion of those manufactured products.[37] Particularly, transportation networks saw a marked expansion and improvement, including networks of canals and railroads, which allowed delicate glass products to be traded amongst Canadian cities and thus allowed the glass industry to flourish.[38]

Lower Canadian glasshouses dominated the market during the first half of the nineteenth century, and it was here that the first organized production of window glass for the national market began. It remains difficult to trace the production of these businesses, but the first known window glass factory in operation in Canada was in St. Jean, Canada East (Quebec), which went into production in 1845 and was simply called the "Canada" glass works in its earliest years in operation (fig 1). The St. Jean glasshouse produced about one hundred half-boxes of window glass per day, far less than the capacities of European counterparts.[39] During this period, window glass was manufactured using what is known as the "cylinder-blown" method: glass was blown by an artisan into a long, hollow tube, which, when its length reached the necessary dimensions, was split lengthwise and flattened (fig. 2).[40]

The success of the St. Jean glasshouse was followed by the establishment of another glass company that manufactured window glass, this one at Como, in Vaudreuil (a small town southwest of Montreal), which went into business in the mid 1840s.[41] Windows from this factory, which was later renamed the Ottawa Glass Works, measured up to 76 by 102

37 Pacey, "A History of Window Glass Manufacture in Canada," 34.

38 Spence and Spence, *A Guide to Early Canadian Glass,* 17; Pacey, "A History of Window Glass Manufacture in Canada," 34.

39 The original name of this business is unknown, but by 1855 it was called Foster Brothers, and around 1879 its name was changed to Excelsior Glass Company, around which time the plant was moved to Montreal. Spence and Spence, *A Guide to Early Canadian Glass,* 18; Pacey, "A History of Window Glass Manufacture in Canada," 34-38.

40 Stevens, *Early Canadian Glass,* x; Janet Holmes, "Glass."

41 This glasshouse is variously cited to have been in operation from 1845-1848 and re-established with a second factory in 1850 (Spence and Spence, *A Guide to Early Canadian Glass,* 18); or to have been in operation from 1847-1857 (Holmes, "Glass").

centimetres, a size comparable to plates manufactured in Europe, and these were advertised as far away as Hamilton because the plant could ship its production using water routes that led to Montreal.[42] The exact years that this early plant was in operation are unknown, as it, like many other Canadian glasshouses, went through multiple name changes, mergers and partnership changes throughout its operating years; prior to census-taking in Canada in 1871 it is unknown exactly how many glasshouses were in operation at any given time. However, the consensus among Canadian glass historians is that the Como factory was the most generally successful producer of window glass, and that its years in operation marked the only point at which Canadian glass production matched the quality and variety of that imported from Europe. Of the few glasshouses operating in Canada before 1850, only these two are cited to have produced plate glass for architecture.

Between 1845 and 1865, Canada experienced significant political and economic strife that, in the words of researcher Anthony Pacey, "would permanently mar the favourable climate that had so recently developed in Canada for a domestic window glass industry."[43] One event that ushered in this era, he notes, was the 1846 Whig victory in the British Parliament, and its subsequent implementation of a *laissez-faire* policy, which plunged Canada into an economic recession.[44] In 1849, the repeal of the British Navigation Laws "cut the colonies adrift" from the preferential trade agreements that had shaped Canada's economy and international trade since it had been under British rule, so the resultant lack of a favourable trade agreement with an industrialized manufacturing nation meant Canada could not easily access cheap goods as before.[45] Canadian colonies thus reduced multiple import tariffs in 1850, including that for

42 Holmes, "Glass."
43 Pacey, "A History of Window Glass Manufacture in Canada," 38.
44 Pacey, "A History of Window Glass Manufacture in Canada," 38.
45 Pacey, "A History of Window Glass Manufacture in Canada," 38.

window glass, in order to attract new suppliers, a move that prompted Ottawa Glass Company workers to march in opposition to foreign imports and also likely resulted in the demise of the glassworks at St. Jean (though this is not definitely known).[46] In 1854, the enaction of the Canadian-American Reciprocity Treaty with the United States allowed Canada to maintain its political alliance with Britain while trading with its continental neighbour, but its repeal in 1865 forced Canada into a national Confederation, both political and economic, in 1867, aided by the expanding railroad network.

The emergent political alliance and railroad network prompted a new resurgence in glass companies between 1867 and 1875: the Canada Glass Works, at Hudson (Quebec), the Hamilton Glass Company, of Hamilton (Ontario), the St. Lawrence Glass Company, in Montreal, and the Burlington Glass Works in Hamilton. Burlington, the most prolific glasshouse of the period, was in operation from 1875 until 1909.[47] Both Burlington and St. Lawrence were flint glasshouses and did not produce window glass, but both the Canada Glass Works and the Hamilton Glass Company, which both produced green-coloured uranium glass, made window glass and bottles.[48]

The technology of iron production is also intertwined with the material architectural history of glass, as the revolution involved in the integration of cast iron framing made possible structures that allowed for glass of greater dimensions to take up larger proportions of the walls of buildings.[49] Iron had been smelted and cast in Canada from the mid-eighteenth century at early manufacturers including the Saint-Maurice Iron Works, the Batiscan Iron Works and Furnace Falls, all of which opened before the turn of the nineteenth century.[50] The presence of

46 Pacey, "A History of Window Glass Manufacture in Canada," 38.
47 Holmes, "Glass."
48 Stevens, *Canadian Glass c. 1825-1925,* 15.
49 Eric Arthur and Thomas Ritchie, *Iron: Cast and Wrought Iron in Canada from the Seventeenth Century to the Present* (Toronto: University of Toronto Press, 1982), 154, 166.
50 Arthur and Ritchie, *Iron,* 9.

the iron industry in Canada allowed for the integration of large glass panels into Canadian architecture, including Toronto's Crystal Palace, the iron for which was smelted at the Saint Lawrence foundry.[51] The architectural historian Sigfried Giedion, speaking about the United States, places the period of the proliferation of cast iron facades and skeleton construction in the period between 1850 and 1880, and according to some scholars this period may be extended accurately to the Canadian context as well.[52]

Glass was increasingly associated with modernity because of its use in structures that typified new architectural types.[53] Throughout the late nineteenth century, iron and glass structures increasingly typified the changes that were being made to the Canadian landscape, as the country rapidly commercialized and industrialized with the expansion of railroad networks and factories.[54] These changes, however, were not evenly distributed across the newly-formed country, nor were they universally welcomed. Many of the changes in social and physical space spurred by the Industrial Revolution disproportionately affected Canada's major cities, which were well-connected via canals and the railroad, while the majority of Canadians still lived in small, agriculturally focused rural areas, with many still at the frontier stage.[55] The rise in organized workers' strikes around this period also points to a class-based distrust for the steadily cementing industrial capitalist order, rather than universal support for the project of "modernization."[56] Ideological opposition to modernization was also levelled from

51 Arthur and Ritchie, *Iron,* 154-155.
52 Arthur and Ritchie, *Iron,* 163.
53 Armstrong, "Languages of Glass," in *Victorian Prism: Refractions of the Crystal Palace,* ed. James Buzard, Joseph W. Childers, and Eileen Gillooly (Charlottesville: University of Virgina Press, 2007), 58; Eskilson, *The Age of Glass,* 3.
54 Stanley B. Ryerson, *Unequal Union: Roots of Crisis in the Canadas, 1815-1873* (Toronto: Progress Books, 1968).
55 R. W. Sandwell, *Canada's Rural Majority: Households, Environments, and Economies, 1870-1940* (Toronto: University of Toronto Press, 2016).
56 Bryan D. Palmer, "Labour Protest and Organization in Nineteenth-Century Canada, 1820-1890," *Labour/Le Travail* 20 (Fall 1987): 66.

antimodernists, who worried that "overcivilization" and modern conveniences would be morally attenuating and thus irreconcilable with the welfare of the nation, while the Catholic Church expressed ambivalence toward some thrusts of modernization, understanding many of its values as Anglo-Protestant.[57] The transformative changes to Canada's architectural landscape and systems of production, signified by their plate glass architecture, were regionally particular and attended by constant opposition and ambivalence from various groups of Canadians.

Following the 1878 Macdonald policy instigating protective tariffs in order to grow Canadian industry, a few more glasshouses producing window glass were organized. The Napanee Glass works, in operation from 1881 to 1883, was an endeavour by the businessman John Herring using imported glassworkers.[58] Its operations went poorly, and the growth of this short-lived business was marred by consistent troubles with its workers. Though it was slated to produce window glass, there is little evidence that it ever fabricated anything at all. The New Brunswick Crystal Glass Company, founded in 1874, burnt down in 1878 and resumed later that year with new workers, but failed within the year.[59] This company also produced window glass, but it was of such poor quality that it was suitable only for industrial buildings including greenhouses, and not for domestic use.[60]

Imported glass thus continued to set a competitive standard as well as the fashion throughout the century.[61] The quality and size of plate glass that Canadian factories were able to

57 T. J. Jackson Lears, *No Place of Grace: Antimodernism and the Transformation of American Culture, 1880-1920* (New York: Pantheon Books, 1981); Daniel Coleman, *White Civility: The Literary Project of English Canada* (Toronto: University of Toronto Press, 2006), 128-129; Ormsby, W. G. "Stanley B. Ryerson—Unequal Union: Confederation and the Roots of Conflict in the Canadas, 1815-1873. Toronto: Progress Books, 1968. viii, 477 pp," *Histoire Sociale/Social History* 2, no. 4 (1969): 127.

58 Pacey, "A History of Window Glass Manufacture in Canada," 38.

59 Pacey, "A History of Window Glass Manufacture in Canada."

60 Pacey, "A History of Window Glass Manufacture in Canada," 38-40.

61 Holmes, "Glass." Montreal and Toronto factories stocked glass "imported directly from England," sometimes performing the bevelling and silvering in Canada. A 1901 article on these operations calls the English

manufacture rarely matched that of those imported from Europe and the United States. American competition was responsible for the dissolution of all but one of the Quebec glasshouses that were dominant during the period between 1845 and 1875.[62] Industrialization by mechanization on a large scale only really altered the production of glass during the 1880s,[63] and after 1880, few new glass factories were established in Canada.[64] The census of 1891 shows twelve glassworks in operation, seven of which historians can name with certainty.[65]

Throughout the nineteenth century, then, attempts were clearly made to foster an independent colonial production of this industrial product, resulting in both successful businesses and periods of stagnation. Overall, however, colonial production remained inferior to that of the imperial centre and importation remained the norm for the entirety of the century. This pattern occurred during a period that saw both sweeping changes in the organization of the Canadian economy and built landscape, shifts that drew a variety of reactions from Canadians.

2. Glass as Metaphor and Narrative in Canadian Writing

In the late nineteenth century, articles appeared in Canadian publications that suggested the imaginative potential that glass presented. One such editorial appeared in the Toronto *Globe* on May 24, 1876, predicting that the age "about to present itself" would "be known in future epochs as 'The Age of Glass.'"[66] It would not be named for the "lucidity of our writers," the

firm Pilkington Brothers "the greatest of all glass manufacturing houses" with operations on a "colossal scale." "The Palace Flour Mill of the World Visited by H.R.H. The Princess of Wales. While at Winnipeg. The Largest Flour Mill in the British Empire," *The Globe,* October 8, 1901. Engravings, photographs, and chromolithographs were also widely imported from England, France and Germany; an industry which grew in Canada in the late 1860s. "Pictures and Looking Glass Framing," *The Globe,* January 30, 1868, 1.

62 Spence and Spence, *A Guide to Early Canadian Glass,* 38.

63 Cooke, *Glass: Twentieth Century Design.*

64 "Canadian Glass," Canadian Museum of History.

65 Spence and Spence, *A Guide to Early Canadian Glass,* 38.

66 "The Age of Glass," *The Globe,* May 24, 1876, 2.

"transparency of our politicians," or "the fragile nature of our institutions," the author clarifies, but for the radical new abilities that the large-scale application of glass, now strengthened by the process of tempering, could assume. An analogous article, titled "Toughened Glass," had appeared in the *Globe* almost a year earlier on June 17, 1875. This piece also cites the tempering process as enabling a vast new variety of uses for the material, which would now be able to withstand trauma, pressure and heating.[67] Both articles reinterpret the popular metaphor of "living in glass houses" in light of this technology; "Toughened Glass" suggests that residents of glass houses could now "throw as many stones as they please."[68] The author of "The Age of Glass" adds that the environment of the glass house might imbue its residents with the sense that "everything is clear and open to the light," thus keeping people "careful lest they bear witness against their neighbours."[69] The author suggests that glass homes would encourage people to act in a more charitable and moral manner: with "our inmost hearts exposed to view," citizens would be careful about their actions since "the fear of silent criticism may ensure our endeavour to avoid its censure."[70] The phrase "as brittle as glass" would fall out of favour, this article continues, as glass would be "as tough as tough could be."[71] Indeed, the very way in which authors characterized women might soon become outmoded, as people of the future would no longer know any woman to "fly into a rage the moment anything is broken in the house," and the "female temper will be so improved" that literature featuring angry women would seem unbelievable to the reader of the future.[72]

67 "Toughened Glass," *The Globe,* June 17, 1875, 2.
68 "Toughened Glass," 2.
69 "The Age of Glass," 2.
70 "The Age of Glass," 2; "Toughened Glass", 2.
71 "The Age of Glass," 2.
72 "Toughened Glass," 2.

Both articles exalt in the new roles that glass might play, the authors hoping that plate glass could be used throughout the household: to roof houses, frame fireplaces and replace kitchen items such as delicate china and dirty cookware— "no half-suspected foreign matter lurking in the shadows," the 1876 article explains, "all will be transparent, and in keeping with the surrounding brightness."[73] "More panes and fewer pains," presaged this article, suggesting that the large scale application of glass might result in a more just, aesthetically beautiful, and moral societal condition; "the age of glass should be a moral age," it concluded, "for we are the creatures of our surroundings, and nothing that is dark, hidden, and delusive should be able to exist where all around is light, revealed and undisguised."[74]

The articles also muse about how important glass had already become for day-to-day life. "Toughened Glass" notes the way that glass protects from weather while it "allows the light of heaven to stream into our rooms and the eye to rest on the cheering colours of sky and land and sea," describing the way landscape vistas "come to us through glass, as though there was nothing between our eyes and such phenomena but the air which itself is part of them."[75] "Honest and clear," glass panes facilitated observation for the casual viewer, but glass, notes the author, is also "literally sight to those who would otherwise […] be blind."[76] Glass, here, is identified as conducive to sight itself—facilitating vision for those who require lenses and providing a kind of negated mediation, both physically there and appearing to be absent, between observer and landscape. Richard Sennett, sociologist and urban studies scholar, mused in 1990 on the manner

73 "The Age of Glass," 2.
74 "The Age of Glass," 2.
75 "Toughened Glass," 2.
76 "Toughened Glass," 2.

in which glass "defines the relation between inner and outer," "hermetically sealing" the outside from within while retaining its visibility.[77] Glass, claims the Victorianist Isobel Armstrong,

> could stand in for the invisible nature of mediation in complex, 'modern,' nineteenth-century experience: a many-times mediated world created by and creating new technologies not only changed the relation between self and things [but] also changed the relation between self and beholder, self and polis, self and nation. Glass's unreadability, insistently spectral, insistently material, pressed upon the cultural imaginary.[78]

For nineteenth century Canadians, hygiene and sanitation would be one benefit of this new reign of glass. Glass already protected the face of watches from dust, "leaving the hands free to perform their busy work," and protected rooms from the "smoke or smell" of lamps.[79] The 1876 piece predicts that glass architecture will have "all our ailments fly and leave us in the enjoyment of a calm old age," protected from disease by the sanitation of hard glass surfaces.[80] An 1895 article called "Glass Bricks and Glass Cloth" similarly hoped that the adaption of glass garments would abolish "the great grease-spot evil" for those items could simply be wiped clean.[81] The author of "Toughened Glass" excitedly suggests introducing "blue glass" into homes, so that "we may physically grow as we morally improve," referencing the concept, popular during the period, that coloured glass panes in greenhouses might contribute to better growing conditions for the plants housed within.[82] Fresh air was connected intimately to having large windows; and the concept of "miasma," which hypothesized that unpleasant smells were

77 Richard Sennett, "Plate Glass," in *Raritan Reading,* ed. Richard Poirier (New Brunswick/London: Rutgers University Press, 1990), 351.

78 Armstrong, "Languages of Glass," 58.

79 "Toughened Glass," 2.

80 "The Age of Glass," 2.

81 "Glass Bricks and Glass Cloth," *Moose Jaw Herald,* November 8, 1895, 6.

82 "Toughened Glass," 2. In an 1895 article titled "Hot House Glass," the author notes that "white glass conduces to the growth of plants much better than any other variety. Green glass used to be considered the best, but, in 1893, the experiment was made at Kew of substituting white for green in the east wing of the tropical fern house. […] the improvement in the growth of plants was so remarkable that it was resolved to abandon the use of green glass altogether. The efficacy of white glass is disputed by some horticulturalists […]," the article describes the results of a "Mr. Villon's" experiments with the growing potential under nine different glass shades, with those exhibiting the most change "orange colored glass," "violet," "cobalt-blue," and "copper-blue." From "Hot House Glass," *The Victoria Daily Times*, May 28, 1895, 5.

responsible for the spread of disease and disorder, came to order the distribution of rooms in households as well as guidelines for keeping the home sanitary. Larger sash windows were thought to encourage healthfulness as the light and air they let in allowed the "ventilation and mitigation of smell," which, it was suggested, would keep citizens "moral and happy."[83]

The moralistic implication these articles is worth considering. The 1875 article predicts "both physical and moral" effects of the application of glass, while the later one predicts that "the age of glass should be a moral age." This must be contextualized in terms of Victorian attitudes toward cleanliness, which were developing throughout the nineteenth century. Leonore Davidoff and Catherine Hall describe the ways in which hygienic practices changed during the Victorian era in England; as concern with dirt and disorder increased, the responsibility for hygienic practices was also further moralized. They argue, however, that this resulted largely in efforts to keep the appearance of cleanliness rather than to thoroughly wash according to standards espoused by germ theory.[84] It was during this era that the concept of purity took on the connotations of cleansing, so uncleanliness was associated with moral impurity, and this rhetoric was echoed in religious writings and decorum guides.[85] Further, in her highly influential 1995 work *Imperial Leather,* Anne McClintock describes the ways in which the visual language of hygiene was aligned with imperial progress and civilization.[86] The historian Mariana Valverde notes that nineteenth-century Canadian reformists were heavily informed by these English and American ideas, and often used metaphors of lightness and cleanliness to mean knowledge,

83 Leonore Davidoff and Catherine Hall, *Family Fortunes: Men and Women of the English Middle Class, 1750-1850* (London: Hutchinson, 1987), 383.
84 Davidoff and Hall, *Family Fortunes,* 382.
85 Davidoff and Hall, *Family Fortunes,* 90.
86 Anne McClintock, *Imperial Leather: Race, Gender and Sexuality in the Colonial Contest* (New York: Routledge, 1995), 32, 47.

healing, and social purity.[87] The 1876 article talks of abolishing the "dirty black" pots and pans of the past in favour of translucent items, suggesting that dark surfaces made it difficult to see whether they were contaminated.[88] In the Victorian imagination, anxiety around contamination and order meant that contagion was racialized and domestic hygiene, a concept linked with lightness and clarity, was imagined as purifier and preserver of whiteness and purity.

Importantly, then, invoking glass and the unblemished morality it symbolized also implicitly referenced the reverse of this impression—impurity and dirt, and thusly, pane glass's own moral opposite. The popularity of "factory tour" articles, narratives about the processes of its production suggest the simultaneity of references to clear, crystalline panes and to the soot and grime from which they arose. These articles appeared throughout the nineteenth century in newspapers and magazines, explaining the process of plate glass-making, the appearance and layout of the infrastructure of glass factories, and, often, the physical, bodily effects of the hard labour of glassblowing.[89] In these pieces of journalism, "a narrative of progress," suggests Isobel Armstrong, was "reconciled with a narrative of suffering."[90] In many of these narratives, journalists made an effort to explore the poetic significances of the way in which this clear material associated with morality and truth arose out of the painful and grimy circumstances of the sooty, uncomfortable glasshouse, and a certain dualism of rhetoric emerged: pain existed with beauty, purity with dirt and translucent lightness with the darkened interiors of the glasshouses.[91] Moreover, a kind of ghostly relationship between the glassblowers and the items they created arose; by emphasizing the physical hardship and the literal breath these workers

87 Mariana Valverde, *The Age of Light, Soap and Water: Moral Reform in English Canada, 1885-1925* (Toronto: University of Toronto Press, 2008), 17, 35.
88 "Toughened Glass," 2.
89 For a detailed exploration of glass factory tourism in Britain, see Armstrong, *Victorian Glassworlds,* 19-36.
90 Armstrong, *Victorian Glassworlds,* 19.
91 Armstrong, *Victorian Glassworlds,* 19.

channelled into the material, the descriptions of the sparkling products that these articles usually ended on were imbued with a kind of reverence, hinting at the way in which some trace of these glassblowers was left in the material itself; in bubbles, in pockets of breath.[92]

In one 1888 article of this type, published in the New York-headquartered *Frank Leslie's Popular Monthly,* an American glass factory is described. It is likely that Canadians consumed similar articles, as popular magazines were distributed throughout Canada, and even that Canadians could have read this one, since general interest articles were often reprinted in several magazines at once.[93] This particular glass factory tour, of an Albany, NY factory, includes an image of the workers transporting their finished product, a "brilliant sheet," between buildings in a glass factory complex (fig. 3). At first glance, it appears that four workers are holding the sheet from one side, their images reflected perfectly in the glass. However, the glass is not just reflective but translucent: an image of the building behind the sheet is communicated with clarity through its surface; once this is clear, it appears that what initially seemed the reflections of the four workers are actually four more men, leaning back against the glass and forming the exact opposites to those in the foreground—their counterparts through the glass. The viewer is reminded of the ability of glass to be both clear, uninterrupted transmitter and reflective object. The image thus reminds its viewer of the multiplicity—and relatedly, the deceitfulness—of the material.

Because descriptions of plate glass that appear throughout Canadian publications so often and so strongly associate the material with metaphorical or figurative connotations, it is likely that readers of these papers were familiar with these undertones and possible that these

92 Armstrong, *Victorian Glassworlds,* 4-5.
93 Fraser Sutherland, *The Monthly Epic: A History of Canadian Magazines, 1789-1989* (Markham: Fitzhenry & Whiteside, 1989).

associations would be made even when not explicitly mentioned in sources. It is thus important to consider the strong symbolic connections made in articles and images such as these when considering how large areas of plate glass would have been perceived by nineteenth-century Canadians.

3. Glass in the Canadian "Crystal Palaces"

Depictions and descriptions of Crystal Palace exhibition buildings are one place in which the tension between the metaphorical significances of glass in nineteenth-century Canada comes to the fore. Following the erection of Joseph Paxton's renowned Crystal Palace in London's Hyde Park 1851, imitations were constructed throughout the world, and Canada was no exception. Over a dozen exhibition structures termed "crystal palaces" were completed in Canada by 1891, the first four of which were in Kingston, Toronto, Hamilton and Montreal. These structures, built for agricultural exhibitions, came to be recognized as "the appropriate symbol for the improvement of agriculture through technology" by encapsulating technological achievement as well as recalling the symbolism of Paxton's glass structure: its "modernity, clarity, lucidity, order and sense."[94] This signification, however, relied on Canada's emulation of its imperial origins, highlighting the manner in which Canadian nationalism was often articulated in tandem with its imperial connection. At the same time, Canada's structures never matched the original in size or proportion of plate glass because of the country's climate, so coverage and depictions of Canadian structures often either obscured their material condition to praise their success or were critical of their perceived inferiority. Plate glass thus became, paradoxically, a marker of both Canadian national progress and Canada's shortcomings. The dualistic metaphorical quality of

94 Fern E. M. Graham, "The Crystal Palace in Canada," *SSAC Bulletin SEAC* 19, no. 1 (1994): 7; Rachel Teukolsky, "This Sublime Museum: Looking at Art at the Great Exhibition," in *Victorian Prism*, 88.

glass itself – transparent and reflective, bright and clean yet reminiscent of its less-than-pristine origins – was thus drawn into that larger dualism of national independence and imperial allegiance that characterised the English Canadian political imaginary at this time.

Global emulation of the Crystal Palace was likely in part a result of the proliferation of romantic mythologies around the technologically unequalled Paxton palace in Hyde Park, narratives that are well documented throughout the abundant literature on this structure. Contemporaries marvelled at the colossal scale of its nine hundred thousand square feet of sheet glass, suggesting the relationship of its gigantic curtain walls to space not just beyond the structure itself, but beyond the physical realm.[95] Lothar Bucher's much-cited 1851 account of the Crystal Palace, for example, speaks to its spectacular, even dreamlike effect: "incomparable and fairylike," Bucher wrote, it is impossible to see "the actual size or distance" of the structure from inside, as "all materiality" of the building "blends into the atmosphere."[96]

These narratives were similarly prevalent in Canadian publications, which emphasized the importance of the London structure for its technical innovation and its symbolic connection with industrial progress. Anticipating the opening of the Hyde Park Crystal Palace in 1850, the Toronto *Globe* immediately praised "Mr. Paxton's huge transparency" as a "wonderful advance," highlighting the "triumphs of skill" and engineering of "a structure composed entirely of iron, wood, and glass, without a square for brick or an inch of mortar."[97] Decades later, in 1889, the *Ottawa Journal* remembered the relocated Palace as a "marvel of skill," for which "no less than 240 plans were drawn, examined and rejected" before the great "tropical garden under

95 O. B. Hardison, "Great Walls and Running Fences," in *Poetics and Praxis, Understanding and Imagination: The Collected Essays of O. B. Hardison Jr.,* ed. Arthur F. Kinney (Athens: University of Georgia Press, 1997), 283.

96 Lothar Bucher, "Kulturhistorische Skizzen aus der Industrieausstellung Aller" (1851), quoted in Ilse Bussing López, "Reading Imperialistic Space: The Crystal Palace," *Revista de Lenguas Modernas* 21 (2014): 106; Richard Weston, *Materials, Form and Architecture* (New Haven, Conn.: Yale University Press, 2003), 76.

97 "The Crystal Palace in Hyde Park," *The Globe,* December 14, 1850, 598.

glass" could be constructed and inspire a subsequent "epidemic of exhibitions" throughout the world.[98]

The palace was not only lauded by Canadians for its technical and architectural achievement, but also invited interest for the ways it embodied and prioritised visibility through its total transparency. Architectural theorist Anthony Vidler argued in 1992 that "modernity has been haunted, as we know very well, by a myth of transparency," a modernist ideal of "transparency of the self to nature, of the self to the other, of all selves to society" that was both represented and actively constructed in the "universal transparency of building materials" from the late eighteenth century until the early twentieth.[99] Further, Victorian scholar Estelle Murail has proposed that nineteenth- century modernity in particular was "pervaded by a scopic dream […] aimed at making all surfaces transparent."[100] This ideal emerges in an 1850 *Globe* article which notes the "many splendid points of view" that would be afforded as well as the "extraordinary facilities for an illumination" resulting from the transparent walls and roof of the Crystal Palace.[101] In an article in the *Journal of Education for Upper Canada,* which proposed that the palace "combined recreation and instruction," great detail is lavished upon a description of the "spectacle of unequalled splendor and brilliancy" of the vast, open structure. The article alludes again to the Palace's brightness, which might "throw over" the "faculties" of viewers

98 "Paris is All Alive Now: Her Centennial Exposition is the Marvel of the Nations," *The Ottawa Journal*, May 11, 1889, 3.

99 Anthony Vidler, "Transparency," in *The Architectural Uncanny* (Cambridge, Mass.: The MIT Press, 1992), 217.

100 Estelle Murail, "The Flâneur's Scopic Power or the Victorian Dream of Transparency," *Cahiers victoriens et édouardiens* 77 (2013): 2.

101 "The Crystal Palace in Hyde Park," *The Globe,* 598.

confronted with "the flood of light, which enters its walls of transparent crystal," lined with "the rich products of human skill and ingenuity."[102]

The popularity of the London Crystal Palace in Canada is also significant for its symbolism of imperial power. Exhibitions brought products from a vast area into one concentrated spot, enacting a collapse and concentration of space and time. The philosopher William Whewell remarked at the time of the Great Exhibition that "by annihilating the space which separates different nations, we produce a spectacle in which is also annihilated the time which separates one stage of a nation's progress from another."[103] This experience was brought directly to Canadians with a panorama exhibition of the Great Exhibition, which was introduced to Torontonians in 1852 by the famed American showman and businessman P. T. Barnum. In advertisements that appeared throughout the *Toronto Examiner* in August 1852, the public was encouraged to visit St. Lawrence Hall, a large exhibition gallery on the corner of King East Street and Jarvis Street, in order to see a "Monster Panorama of the Crystal Palace" (fig. 4).[104] These advertisements describe a panorama of "the whole exterior and interior of the renowned CRYSTAL PALACE; the Royal Procession; the grand speeches by Queen Victoria and the British Court;" alongside several views of certain exhibitions and "a bird's eye view of the Crystal Palace and the West End of London."[105] Panoramas, large paintings on a circular canvas

102 "The Sydenham Crystal Palace," *Journal of Education for Upper Canada* 8, no. 8 (Toronto: Lovell and Gibson, August 1855): 121. In July 1885, the same *Journal* described the reconstructed palace at Sydenham in detail, suggesting its interest as an educational site. "Description of the New Crystal Palace at Sydenham," *Journal of Education for Upper Canada* 7, no. 17 (Toronto: Lovell and Gibson, July 1854): 123.

103 William Whewell, "The General Bearing of the Great Exhibition on the Progress of Art and Science," Lectures on the Results, Vol. 1 (1852), quoted in Andrew H. Miller, *Novels Behind Glass: Commodity, Culture, and Victorian Narrative* (Cambridge: Cambridge University Press, 1995), 54.

104 The building was moved to this site in 1850, and is still standing in this location. "St. Lawrence Hall National Historic Site of Canada," Canada's Historic Places: A Federal, Provincial and Territorial Collaboration, Administered by Parks Canada, https://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=7527; "Monster Panorama of the Crystal Palace," Advertisement, *The Toronto Examiner*, August 25, 1852, 3; "Monster Panorama of the Crystal Palace," Advertisement, *The Toronto Examiner*, August 4, 1852, 3.

105 "Monster Panorama of the Crystal Palace," Advertisement, *The Toronto Examiner*, August 4, 1852, 3.

that surrounded viewers on all sides, had spectators look out upon the massive picture which functioned to place them, illusorily, in the midst of a scene.[106] They often required specific infrastructure: purpose-built structures that accommodated an uninterrupted cylindrical photorealistic painting and a platform at the centre (fig. 5). Historian Denise Oleksijczuk notes that early British panoramas "solicited viewers ideologically," suggesting the dominance of the British Empire by bringing depictions of British military victories in far-away places into viewers' immediate proximity.[107]

That the Great Exhibition was presented through the medium of the panorama is doubly significant considering the philosophical consequences of both platforms. Media theorist Anne Friedberg has observed that panoramas, like other visual technologies that gained popularity in the Victorian era, could be considered detemporalized and derealized "machines of virtual transport."[108] She notes the way that panoramas condensed time and space virtually, mirrored in the way that changes in transportation were altering industrializing landscapes physically.[109] The Great Exhibition was another moment at which space and time were concentrated, moving products from the world over into the field of vision of visitors to the industrial exhibition, a movement facilitated by the railway system.[110] The subject matter of the Toronto panorama, then, acted as mirror of the poetic consequences of the panoramic medium itself. In addition, the experience of both subject and medium were layered with the reverberations of imperial power

106 Denise Blake Oleksijczuk, *The First Panoramas: Visions of British Imperialism* (Minneapolis/London: University of Minnesota Press, 2011), 1.

107 For a list of the subject matter of prominent panoramas exhibited during their first decades, see Oleksijczuk, *The First Panoramas,* 173-174.

108 Walter Benjamin, *The Arcades Project*, trans. Howard Eiland and Kevin McLaughlin, ed. Rolf Tiedemann (Cambridge, Mass.: Belknap Press of Harvard University Press, 1999), 5-6; Anne Friedberg, *Window Shopping: Cinema and the Postmodern* (Berkeley and Los Angeles: University of California Press, 1993), 4.

109 Friedberg, *Window Shopping,* 4.

110 Miller, *Novels Behind Glass,* 53.

and colonial participation, and these implications of power and vision had echoes in the experience of the architecture of exhibitions.

Canadians were not just viewing the Crystal Palace from afar, however; they were also building their own exhibition palaces, so the same architectural orientation toward display and visibility was being undertaken in the colony. Canadian exhibition buildings were explicitly derivative of Paxton's structure, echoing the original both in purpose and iconography and usually known, either officially or unofficially, as "Crystal Palaces." Considering Canadians' fascination with the original palace, these buildings seem to suggest an almost direct line of influence from the imperial centre to Canada. Because these structures served to articulate a certain nationalism by putting the products of national industry on display, it is useful to note the way that they articulated Canadian nationalism by emulating Britain. Like the original Crystal Palace, Canadian structures eventually acted as central symbolic icons, metonyms for the exhibitions themselves; images of the palaces appeared on the exhibitions' posters, pamphlets, admission tickets, entry forms, and were even emblazoned on commemorative medallions (figs 6-9). Their significance was underscored by the way they laid claim to the moniker "crystal."

The architects of Toronto's 1858 Palace of Industry were Sandford Fleming and Collingwood Schreiber, who designed it for the Board of Agriculture for Upper Canada as a permanent structure to house an annual provincial exhibition of agricultural and mechanical products.[111] The glass of the Toronto walls was imported from Chance in Birmingham, the same suppliers of the glass of the original palace.[112] In 1879, it was dismantled and moved to a new site on the Provincial Exhibition Grounds, reusing the majority of the woodwork, the roof, the columns and iron work, the sashes and the glass, and remedying problems with the floor, which

111 "Crystal Palace, or Provincial Exhibition Building," *Descriptive Letterpress,* (Toronto?: 1858?): 13.
112 "The Thirteenth Exhibition," *The Globe,* September 29, 1858, 2.

had rotted, while enlarging its interior and making the space more conducive to introducing natural light (figs 10-12).[113] The glass from the old site was reused and re-cut before it was installed in the new structure.[114]

Montreal's palace, designed by the Montreal architect John William Hopkins, was inaugurated in 1860 by the Prince of Wales where it was "feted by the citizens within its glass and wooden walls" as "The Provincial Exhibition Building and Museum of Canadian Industry and Art," though many newspaper articles referred to it simply as the "Crystal Palace."[115] The glass that made up this structure was German, so like Toronto's, its glass plates were imported from Europe.[116] It was originally located on St. Catherine street west on the block surrounded by University street, Cathcart, and McGill, on a location owned by the University (fig 13). In 1878, it was moved to the "Exhibition Grounds," between Avenue du Parc and De L'Esplanade, at some cost to the city following a legal dispute between the building owners and the property on which it stood.[117] There, it hosted "every exhibition in the city" in an expanded structure with new space surrounding it.[118]

These buildings were normally built for Agricultural Fairs, which were put on by Agricultural Societies and grew particularly popular by the mid-nineteenth century. The travelling Provincial Agricultural Fair of Canada West was one of the main travelling

113 "The Provincial Exhibition. Preparations for Holding it," *The Globe*, June 14, 1879, 2.

114 "The Provincial Exhibition. Preparations for Holding it," *The Globe,* June 14, 1879, 2.

115 "The Provincial Exhibition Building and Museum of Canadian Industry and Art, Architect: Mr. J. W. Hopkins. Builder: Mr. D. McN---n," *Canadian Press* 41, Montreal, Wednesday, May 23, 1860, VOL. XV, Vertical File: John William Hopkins, Canadian Centre for Architecture, Montreal, Quebec, Canada; "From the Ashes: The Exhibition Will Be Held This Year as Usual," *The Montreal Gazette*, July 31, 1896, 3.

116 Giles Nicholas Chessel Hawkins, "The Montreal Exhibition Building and Museum," MA Thesis, Concordia University, 1986.

117 "The Crystal Palace Grant," *The Montreal Gazette*, August 20, 1878, 4; Article about the new location of the Crystal Palace, *The Montreal Gazette,* July 5, 1878, 2; Article advertising Montreal's Exhibitions, *Ottawa Daily Citizen,* August 6, 1879, 1; Photocopy of published book chapter, 'The Crystal Palace, 1877, 1866," *Lost Montreal,* Vertical File: John William Hopkins, Canadian Centre for Architecture, Montreal, Quebec, Canada.

118 "From the Ashes: The Exhibition will be held this year as usual," *The Montreal Gazette*, July 31, 1896, 3.

exhibitions, which featured a variety of domesticated animals and vegetables and distributed prizes to winning entries (figs 14-15).[119] These fairs, particularly when they began to be held annually in these purpose-built structures in the late 1850s, attracted large crowds, and there were often multiple fairs each year in cities across Canada. The 1858 Toronto Exhibition was reported to have attracted "upwards of twelve thousand persons" by train and steamboat from Hamilton, Collingwood, Montreal, Ogdensburg (New York State), Niagara, and St. Catharines.[120]

When exhibitions were held in these structures, visibility was the primary function of the architecture; glass played a facilitating role, literally and metaphorically, for this experience of perception. Exhibitions were sites of spectacular displays and competition intended for widespread visual consumption, and the ability of the palaces themselves to facilitate this sustained gaze of exhibition visitors is encapsulated by the physical transparency of glass. At once, palaces provided an unadorned backdrop for the display of objects, and were objects of wonder and advancement themselves. Many newspaper articles emphasized the ways that exhibitors "placed their goods in allotted places, so as to show them to the best advantage."[121] Small glass cases also proliferated throughout the interior of the spaces. In an 1862 description of that year's Provincial Agricultural Exhibition in Toronto, the wares of Thomas W. Poole, a doctor, were listed in full in the *Globe,* with the paper nodding to the containment of all the specimens "in glass bottles, collected and arranged by himself."[122]

119 Elsbeth Heaman, *The Inglorious Arts of Peace: Exhibitions in Canadian Society During the Nineteenth Century* (Toronto: University of Toronto Press, 1999).
120 "The Visitors and the City," *The Globe*, September 30, 1858, 2.
121 "The Union Exhibition," *The Globe*, September 14, 1859, 2. This article covers the "united" exhibition of the Toronto Horticultural and Electoral Division societies.
122 "Seventeenth Annual Exhibition," *The Globe,* September 25, 1862, 1.

Despite being described as direct descendants of the original palace, however, Canadian exhibition buildings were not simply smaller palaces of glass and iron as one might assume. The Montreal structure was largely constructed of white and rose-coloured brick, its roof was tin, and the frames of both the Montreal and Toronto buildings were composed of timber as well as iron.[123] The Toronto structure was built on a foundation of brick, and though its sides and roof contained large panels of glass, its frame was trimmed with light green, making it not entirely clear or even unadorned, and the spandrels of its roof were criticized in the *Globe* for appearing "unnecessarily heavy looking," a stark contrast from the lightness so often emphasized in the original structure.[124] The author suggested that this heaviness must mean that the structure was "of course, all the more substantial," but wished that more expense had been spared to have the glass walls elevated, and the "solid massive roof" broken up, in order to "heighten the effect of the building considerably."[125] Significantly, the glass that made up the Toronto structure seems not to have been fully transparent; the vertical windows are often referred to as "obscured glass," and, in 1864, a newspaper article even recommended certain renovations to Toronto's palace, including "thoroughly painting" the "whole of the interior and the glass."[126] Inside, the building was painted with "light colours," and ceilings "light blue and studded with gold stars."[127] Upon the inauguration of the Canadian Exhibition Building, the *Globe* even argued that though it had been "erected on the general plan of the Sydenham structure," it "[could not] lay much claim" to

123 The descriptive letterpress for the Toronto structure notes that the "essential part of the building is constructed of cast-iron." *Descriptive Letterpress* (Toronto?: 1858?): 13.

124 "The Provincial Exhibition," *The Globe*, September 24, 1878, 8; "The Thirteenth Exhibition." *The Globe,* September 29, 1858, 2.

125 "The Thirteenth Exhibition." *The Globe,* September 29, 1858, 2.

126 The Dublin Exhibition Building also used "obscured glass." "Crystal Palace, or Provincial Exhibition Building." *Descriptive Letterpress* (Toronto?: 1858?): 12; "The Provincial Exhibition. Palace of Industry. Completion of the Building," *The Globe,* September 21, 1858, 2; "The Provincial Fair," *The Globe,* September 15, 1864, 1.

127 "Exhibition Park. Description of the Grounds and Buildings," *The Globe*, September 23, 1878, 1.

the "appellation" "Crystal Palace," "a great portion of the material being wood." "The French name—'Palace of Industry'—seems for many reasons the most suitable," the author argued, subsequently referring to it as such.[128] Pride in these sites of architectural nationalism thus sat uneasily with disappointment in their inadequacy to the original.

Scholars such as Fern Graham reason that these material differences necessitate a framework that would allow historians to consider Canadian crystal palaces as individual, nation-specific articulations of a certain building type.[129] Applying such an understanding would necessitate a shift in emphasis from the glass panelling to the other materials that made up the structures, since masonry and tinning is what made Canadian palaces distinctive. In one respect, an argument for nationalistic individuality seems to have teeth. Consider, for example, the nationalistic thrust of an 1880 report on Toronto's Dominion Exhibition of that year, which complained about the lack of visibility of the Canadian flag. "This is a Canadian exhibition, and Canada has a flag, but it was conspicuous by its absence," wrote the author, going on to emphasize that "all these are the productions of Canada, the raw material is Canadian, that the hands that have fashioned them are Canadian, and […] to Canada belongs the honor and credit of the exhibit."[130]

The use of these buildings further suggests their symbolic role in reifying Canadian national identity, for in addition to their role as homes for agricultural exhibitions, these structures were also often used for politically significant nation-building events. Montreal's Palace saw celebrations of the birthdays of influential public figures, served as a concert hall for singers, provided the site for troop promenades of the Rifle Brigade, and was the sleeping

128 "The Provincial Exhibition. Palace of Industry. Completion of the Building," *The Globe*, September 21, 1858, 2.
129 Graham, "The Crystal Palace in Canada," 4-12.
130 E. W., "Impressions of the Fair," *The Montreal Gazette*, September 16, 1880, 6.

quarters for 1,048 attendees of a celebration of Saint-Jean-Baptiste day in 1874.[131] Toronto's palace was used for industrial and agricultural exhibitions on both the provincial and county scale, but also for unrelated fairs and other large gatherings including speeches, luncheons, banquets and concerts (fig. 16).[132] Exhibition "spectacles" were another major example of the use of crystal palaces as backdrops for the reification of national identity. At these events, held during industrial exhibitions, the process of nation-making was central. These shows acted out historical events using elaborate sets, ensembles of actors and even firework displays, and were intended to draw crowds to the expositions and entertain them in masses (fig. 17). The Canadian historian Karen Stanworth has suggested that these spectacles served both as entertainments and as codifiers of "cultural narratives about citizenship, empire, and Britishness."[133]

One acutely political example of the multi-use of these buildings, an 1870 illustration of "Volunteers Drilling at the Crystal Palace, Toronto," depicts the use of the structure for military organization (fig 18). In the image, small crowds of people look on toward Toronto's crystal palace, gathered in groups to take in a scene that suggests a spectacle. Here, however, the Palace is not the object of their gaze: it forms a backdrop for a gathering of militiamen forming in preparation for the Red River Expedition to quell the Métis rebellion led by Louis Riel. The material of the palace itself is uncertain. The parts that were transparent are darker than the roof, which seems to suggest that the interior is darkened, so the ability of the structure to let light

131 *Ottawa Daily Citizen*, November 6, 1863, 1; "From the Ashes: The Exhibition will be held this year as usual," *The Montreal Gazette*, July 31, 1896, 3.

132 "Crystal Palace, or Provincial Exhibition Building," *Descriptive Letterpress* (Toronto?: 1858?): 13; "Crystal Palace Luncheon Rooms," *The Toronto World,* February 5, 1881, 1-4; "The Celebration in Toronto. Speeches in the Crystal Palace," *The Globe,* August 7, 1875, 5.

133 These events were held at the exhibitions; particular in the later years as the events became bigger and began to be held yearly in the same cities see fig. 18 of the back cover of the official programme for Toronto's 1889 Exhibition; which held a staging of "The Burning of Moscow" with fireworks in the evening. Figure 17, Back cover of the "Programme for Canada's Great Industrial Fair and Exposition, 1889, September 9th to 21st," Spadina Records Centre, City of Toronto Archives, Toronto, Ontario, Canada.

enter and leave it is not emphasized. Indeed, according to an 1864 article, when used by troops, the Palace, was an "unseemly object," "partitioned off into rooms and darkened."[134] However, its presence in this drawing is significant: the architectural details of the building are related in exacting detail, despite the focus of the photograph, and an accompanying caption is sure to note that the building was "principally composed of cast iron and glass."[135] That the palace is constructed of glass is thus underscored, suggesting the symbolic power of the material, despite the fact that its materiality did not lend itself to this use. Crystal Palaces, then, both housing these events and also seeming to encapsulate in themselves Canada's newest industrial technologies, would have been associated with national pride and imperial belonging, as well as development and progress. That these spaces were also used for military purposes is significant beyond the pragmatic consideration of their physical ability to shelter a large number of people. The structures, providing the backdrop for nation-defining events, act both as testaments to Canada's technological ability to construct an architecturally complex endeavour using modern materials and symbols of events literally held to demonstrate technological, agricultural, and artistic success for audiences throughout and beyond the nation. In both instances nationhood is key.

Yet nationhood is only part of the picture of the Canadian Crystal Palaces, and indeed there is a risk that emphasizing the physical distinctiveness of the Canadian buildings and the role they played in nationalistic discourse, skews our historical understanding by ignoring the manner in which Canadians most often depicted their structures: as echoes of their Imperial progenitor. On close examination, it becomes clear that images in Canadian sources often downplay the material differences in the service of illustrating the crystal palaces as though they

134 "The Provincial Fair," *The Globe*, September 15, 1864, 1.
135 "Volunteers Drilling at the Crystal Palace, Toronto," *Canadian Illustrated News* 1, no. 32, June 11, 1870, 505.

functioned like the original. The argument for Canadian specificity, while clarifying the material makeup of the structures, might thus also blind us to the visual culture that was developed to mythologize the buildings, which is central to a visual historical understanding of what they meant culturally. Many of the textual sources that describe these structures align them with the original Palace, both by means of direct comparison and by description that seemed to imply more of a resemblance than was the case. Toronto's Exhibition Building was praised for its "admirable likeness to its great prototype of Hyde Park," a descriptive letterpress from its opening explaining that "the outline is very nearly the same, and the transepts are produced in miniature with excellent effect," and that its architects had "successfully reproduced a good copy of the great original."[136] "The walls are chiefly cast iron and glass," described a report in the *Globe*.[137] A transcription of an address from Queen Victoria in the *Montreal Gazette,* promising the attendance of the Prince of Wales for the inauguration of the first Toronto palace, called that structure "similar in design, but of smaller dimensions to those of London and Paris."[138]

Even more often than being directly compared to the London palace, Canadian versions were described with romantic language that linked them to the original structure. A collection of poetry by the Canadian writer C. W. Picton, dating from 1864 and addressed to the Mayor of Kingston, includes verse on the small Palace in that city, which, in positioning the architecture in some romantic celestial light, refers to the "enchain[ment]" of one's eye induced by "all the sparkling light/That from afar is shewn in colors bright," so much so that the speaker "forget[s]" whether he is "in earth or heaven."[139] In 1878, the *Globe* called Toronto's structure an "exceedingly beautiful and commodious building," noting its purpose, to "furnish simple

136 "Crystal Palace, or Provincial Exhibition Building." *Descriptive Letterpress* (Toronto?: 1858?), 12.
137 "The Thirteenth Exhibition," *The Globe,* September 29, 1858, 2.
138 "The Queen and Canadians," *The Montreal Gazette*, September 30, 1858, 2.
139 C. W. Picton, "CRYSTAL PALACE," *The Poet's Glance of Kingston Scenes* (J. T. Breeze*:* 1864), 17-18.

accommodation for the advantageous exhibition of goods."[140] The *Globe* also admired the "plentiful supply of light admitted not only through the crystal walls of the building but through the roofs" of the Toronto palace. According to the *Gazette,* the Montreal palace was similarly "possessed of every convenience possible for admission of the great desideratum, light."[141] It would seem that visitors to these buildings experienced a feeling similar to those awed observers who reported on the Hyde Park Crystal Palace's ability to flood its halls with a sense of wonder afforded by total transparency.

Some Canadian images of these buildings similarly depict it as an ethereal, transparent mass comparable to the London palace. In one postcard depicting Toronto's exhibition grounds, the Crystal Palace appears in the background of a scene of fairgoers congregated around an outdoor festival (fig 19). In the image, the structure itself appears faded against the dark tones of the gathered guests and the foliage in front of it, and its lightness makes it appear ethereal; almost ghostly. In keeping with the romantic descriptions of the structure that appeared in the city's newspapers, this image lightens the structure through physically depicting it with lighter ink. Here, the faded, indistinct quality of the structure also leans into the mythology around the original Crystal Palace, which was often described as "fairy-like," of "fairy fabric" or part of an "enchanted scene in fairy-land," enabling a "spectacle of unequalled splendor and brilliancy."[142]

Images of the palaces differ in the manner in which they depict the ways that the structures conducted light. In a July 1879 image of the Montreal Crystal Palace published in the *Canadian Illustrated News*, the structure is situated in its new location on the "Dominion Exhibition Grounds," present-day Parc Jeanne-Mance (fig 20). In this image, the ability of glass

140 "The Provincial Exhibition," *The Globe*, September 24, 1878, 8.
141 "Our Exhibition," *The Montreal Gazette,* August 6, 1880, 4.
142 "The Crystal Palace," *The Sunbeam* 1, no. 19 (October 2, 1880): 73; "The Sydenham Crystal Palace," *Journal of Education for Upper Canada* 8, no. 8 (August 1955): 121-123.

to transfer light, casting a glow that reaches the area surrounding the structure, is central to the way that the scene functions. An accompanying image of the interior published alongside it depicts a crowd of people within the palace, gathered both on its ground floor and on balconies within the structure (fig 21). In the image, light streams down, seemingly through the roof of the structure, falling in beams and illuminating the heads of those in the crowd not sheltered by the rafters. The beams themselves, articulated with defined lines, serve to highlight the function of the structure: to illuminate its interior. The glass panels on the Montreal building thus assume primacy in these images despite the presence of other materials in the actual structure: here, the entire building appears to be lit from within, and the whole of the structure conducts light with immediacy and lucidity. Because of the material conditions of the Montreal structure, this could not literally have been true. In less stylized images of the structure, the roof often appears heavier and the interior darker and more crowded. A William Notman photograph, taken from the interior of the structure in 1874, shows light streaming into the main thoroughfare, primarily through the façade, while much of the space in the cloistered areas is thrown into shadow (fig. 22). An 1882 drawing for the *Canadian Illustrated News* by the architectural illustrator Eugene Haberer accurately darkens the ceiling and side walls of the building, so the promenade space of the Exhibition appears not airy or fairy-like, but interior and even slightly cramped in some areas (fig. 23). More common, however, were the romanticised illustrations that visually aligned Canadian palaces with the imperial original by means of their illustration.

In visual images and printed descriptions, Canadian palaces also seemed to adopt the centrality and dominance of the original palace, which housed all sections of the Exhibition in its comprehensive casing. At Canadian exhibitions, by contrast, attractions would have been spread across the grounds in multiple buildings, but in figure 17, other structures are not visible, and the palace occupies the singular visual focus. The centrality of these main exhibition buildings is

echoed in this description of the Toronto Palace in the *Globe*: "during the day the city presented a very busy appearance, the streets being crowded with well dressed persons, male and female, wending their way to the great centre of attraction—the Crystal Palace."[143] Though Canadian exhibition grounds would have featured multiple buildings and significant outdoor portions, the symbolic power of a central, dazzling glass structure was apparently just as true for writers on the Canadian structures as it was for those who wrote about the original palace with fervour.

In many representations of the Canadian palaces, then, the mythology of their glass is consistent with that of the original 1851 Palace in London. Despite their material differences, in illustrations and in popular press descriptions, the palaces appear as the spectacular object of the gaze of viewers, a central anchor for the exhibition, and as transparent channels for the unmitigated transfer of light. Images and descriptions in Canadian periodicals communicate the structure's spectacular role as both object of and backdrop for the spectacle of provincial exhibitions meant to draw crowds, demonstrate Canada's technological advancement, and engender feelings of collective pride and identity.

The tension between the distinctively Canadian appearance and role of these exhibition buildings and the consistent effort to align them with the legacy of Britain's is directly tied to the presence, quality, origin and ideal of glass in these structures, and this tension is encapsulated materially by glass, which could behave in two ways at once. Canadians' fascination with the glass of the London Crystal Palace, as indicated in their print culture, is indicative of a colonial loyalism bound up in the narrative of imperial power. Attempts to recreate this structure on a smaller scale follow this trend, but also indicate an effort to distinguish the nation. Theoretically, an impressive glass structure, designed, sourced and erected by a new country, might serve as a

143 "The Visitors and the City," *The Globe,* September 30, 1858, 2.

central symbol of that nation's independence and modernity, particularly as glass architecture came to signify that modernity. If these structures were emblematic of the success of the nation, however, it is also significant that the glass that made these structures modern and distinctive was sourced from outside of the nation, along with their stylistic inspiration and the nature of their function. The structural changes necessary for architectural adaptation to Canada's climate also made direct emulation impossible, and writers and illustrators responded in a diversity of ways: variously concealing or misrepresenting the true amount of glass in the palaces in order to align them with London's or assert their success, or describing their appearance accurately with either pride or criticism, but all the while continuing to place them at the centre of symbolically significant national events. As historian Douglas Cole has noted, nineteenth-century Canadian nationalist movements were directly rooted in British cultural and racial identity, so the attempt to assert Canadian national success by emulating London is consistent with the manner in which imperial and national identity were often affirmed simultaneously, however paradoxical their simultaneous thrusts of independence and allegiance might have been.[144] The cognitive dissonance implied by the prevalence of narratives or images that overstated or misrepresented the presence of glass in order to both align Canadian exhibition buildings with the original and articulate Canadian independence is significant. The paradoxical dualism of glass, a material bound up in architectural articulations of this national success through emulation, is thus indicative of a larger duality, one in which Anglo-Canadian nationalism was inextricable from British imperialism.

4. Plate Glass Storefronts

144 Douglas Cole, "The Problem of 'Nationalism' and 'Imperialism' in British Settlement Colonies," *Journal of British Studies* 10, no. 2 (May 1971): 165-166.

Across nineteenth-century Europe, a trend toward the visual began to affect many facets of culture, including advertising, illustration in print, and merchandising.[145] This shift toward an emphasis on sight and display altered the experience of shopping by giving storefronts—and in particular, glass window displays—more power in tempting buyers, stopping passersby and impressing tourists. Prominent shop windows predate the building types of the mid-nineteenth century by a significant margin; as early as 1726, the novelist Daniel Defoe was condemning the overreliance on shop windows in *The Complete English Tradesman*, lamenting that "a fine row of shelves and glass windows" was by then the norm for attracting customers.[146] However, the nineteenth century undoubtedly saw a radical increase in retailers' attentiveness toward window displays, a change that was identified by contemporaries as well as historians. One early example of this new centrality of storefront display may be found in the Parisian Arcades, which were built in response to the textile boom of the 1820s. These structures may be described as streets lined with storefronts, where the corridors between the shopfronts have been roofed in glass, "so that the passage is a city, a world in miniature."[147] Glass, in the arcades, served to exhibit goods to observers and to enclose the peripatetic space for observing them, encouraging the new figure of the flâneur, a figure understood to wander throughout the urban landscape, observing.

This increasing focus on shop window displays was precipitated by shifting consumer and marketing practices. During the nineteenth century, railways, urbanization, and the increasing size of industrial and manufacturing establishments triggered the development of new consumer practices in Europe, including direct marketing as well as the fast growth of retail and

145 Friedberg, *Window Shopping,* 15.

146 Daniel Defoe, *The Complete English Tradesman* (Project Gutenberg Ebook, ebook #14444, London, 1726; Edinburgh, 1839; EBook, 2004), http://www.gutenberg.org/files/14444/14444-h/14444-h.htm.

147 Benjamin, *The Arcades Project,* 3.

mass merchandising.[148] Department stores, a new architectural type, were built to accommodate these changes. Some scholars cite Karl Friedrich Schinkel's designs in the 1820s as the nascency of the department store for their large areas of glass frontage, and Paris's 1838 Au Bon Marché is often credited as the first building to truly encapsulate this type for its anticipation and facilitation of the future of consumer culture.[149] Throughout the late nineteenth century, department stores were built throughout Europe, coming increasingly to define the experience of shopping by new methods of retailing that hinged on the primacy of the visual, as objects were displayed attractively along with their prices.[150] Architectural theorist Sophia Psarra suggests that arcades and the department store were part of the same cultural trend as exhibitions; together with panoramas, museums and amusement parks, they suggested a new formulation of vision that foregounded the experience of spectatorship, placing a primacy on the experience of observing.[151] Warehouse department stores in major American cities followed this trend, their unbroken floor plans allowing for large open spaces in which consumers could move about freely and browse lavish displays of merchandise.[152]

Canadian businesses underwent the same changes in the 1870s and 1880s, as transformations in consumer goods manufacturing began to alter the economic landscape of the dominion.[153] Dry goods stores in Toronto saw significant expansion in the 1870s, and their

148 David Monod, *Store Wars: Shopkeepers and the Culture of Mass Marketing, 1890-1939* (Toronto: University of Toronto Press), 103.

149 Alexandra Artley, *The Golden Age of Shop Design: European Shop Interiors 1880-1939* (London: The Architectural Press, 1975), 6.

150 For a list of buildings of this type throughout Europe in the late nineteenth and early twentieth centuries, see Artley, *The Golden Age of Shop Design,* 12.

151 Sophia Psarra, *Architecture and Narrative: The Formation of Space and Cultural Meaning* (London: Routledge, 2009), 139.

152 Friedberg, *Window Shopping,* 80; Sigfried Giedion, *Space, Time, and Architecture: The Growth of a New Tradition.* 5th ed., 14th printing. (Cambridge, Mass.: Harvard University Press, 2002), 242. According to the historian Leonard S. Marcus, the modern idea of window display began not in Europe but in the Northeastern United States in the 1830s, and was subsequently experimented with in Europe later that century. Leonard S. Marcus, *The American Store Window* New York: Whitney Library of Design, 1978), 13.

153 Monod, *Store Wars,* 103.

tendency to dominate consumer markets with low prices, huge displays and great variety prompted an overwhelming shift toward "mass market" distribution, characterized by "garish, low-priced displays" and an appeal to consumer psychology and impulsivity.[154] Large stores in Montreal, which were also organized in the "department store" fashion and constructed of steel, iron, and glass windows, have been termed "proto-rationalist" by scholars like Jean-Claude Marsan, thus fitting Montreal's architectural trajectory within the modernist paradigm.[155] These buildings, many of which were built along Sainte-Catherine Street near the Golden Square Mile, housed "mass merchandisers" (so called for their size, not their popularity), and were mostly built in the 1880s and 1890s to adapt to the new consumer culture, in which buyers wandered throughout the store according to whim rather than predetermined path, selecting items themselves instead of asking a clerk.[156]

The materiality of these plate glass storefronts is a vital aspect of these commercial changes. The literary scholar Andrew H. Miller suggests that the adoption of plate glass by retailers was the "most immediate and visible" effect of the technological advances in manufacturing and distributing the material. According to Miller, large windows "radically transfigured the experience of walking through commercial" sectors, "fashioning the streets into gas-lit spaces of utopian splendor."[157] Now that products were perpetually on display to the street, enticing passersby to look upon them, "consumers were invited to enter the store to obtain for themselves the window's glittering promise."[158] These changes, stimulated by plate glass,

154 Monod, *Store Wars,* 103, 117, 121-22.

155 Angela K. Carr, "New Building Technology in Canada's Late-Nineteenth Century Department Stores: Handmaiden of Monopoly Capitalism," *JSSAC/JSEAC* 23, no. 4 (1998): 125.

156 Debates occurred, however, as to whether these structures could be considered "architecture." Carr, "New Building Technology," 124.

157 Miller, *Novels Behind Glass,* 1.

158 An 1898 advertisement calling its Toronto business' new premises "as modern as can be" pledged that "all the promises of wonders that are made in these windows outside are fulfilled." "At Catto's: Splendid Offering of

precipitated both danger and pleasure; both exposing Canadians to and separating them from increasingly available commodities, glass was both window to and barrier from (an obstacle even, in some cases, imbued with the threat of violence) new glittering promises of commercial satisfaction.

This change in the urban fabric happened in tandem with analogous trends occurring in exhibitions over the second half of the century, suggesting an important overlap in the narratives around exhibition buildings and storefronts, two building types both typified by large areas of plate glass. Historian Elsbeth Heaman, describing the ways that industrial fairs began to take on the characteristics of mass entertainment and spectacle towards the end of the nineteenth century, suggests that "the world," in turn, "began to look more like the fair."[159] Department stores, modern advertising, and structures of glass and crystal for the display of products like Montreal's nineteenth-century warehouse-showrooms emulated the visibility, open interiors, and feeling of accessibility engendered by the crystal palaces; products were "on exhibition," and stores even referred to themselves as "permanent exhibitions," enticing publics to come view their products, and advertising phrases like, "the exhibition is free, come and see."[160] One 1895 essay encouraged proprietors to lay out products in a fashionable manner in order to "invite" passersby to "glance at other lines shown in the same window, the result being that customers are caught by the special line exhibited in the centre."[161] Inside department stores, shoppers could view "kaleidoscope scene[s] of life and color," surrounded by glittering "big glass cases" about the show rooms.[162] It would seem, then, that the widespread adoption of storefront display windows

New Goods at this Store," *The Globe,* March 12, 1898, 23; Elizabeth Outka, *Consuming Traditions: Modernity, Modernism, and the Commodified Aesthetic* (Oxford: Oxford University Press, 2009), 129.

159 Heaman, *The Inglorious Arts of Peace,* 108.

160 Heaman, *The Inglorious Arts of Peace,* 108; "A Big Smash," *Ottawa Daily Citizen*, March 17, 1891, 4.

161 "Prize Essay on Window Dressing," *The Canadian Dry Goods Review* 4, no. 1 (January 1894): 28-30.

162 "The Robert Simpson," *The Globe*, March 8, 1899, 8.

does not only reveal a change in the experience of shopping, but also an alteration in the way that Canadians in urban centres were coming to orient themselves toward the objects that they observed.

A monthly magazine for retailers called *The Canadian Dry Goods Review* responded to transformations in the organization and architecture of consumption. It was first published in January 1891 to respond to the ways in which shopping, marketing and display were shifting. The first issue identifies the "vast and diversified interests involved in the dry goods, hats, caps and furs, millinery, and clothing trades and the enormous capital invested," expressing "surprise" that until then, no publication had treated the dry goods trade with extended consideration.[163] The journal often featured advertisements for wholesalers, as well as advice from retailers to one another on decorum, display and supplying, articles detailing the new role of retailers in importation and wholesale, and reports on current fashions and developments in trade, thus serving as a guide for stocking products and a general source of information for those running businesses. Among the pages of the *Dry Goods Review* are numerous mentions of panelled glass in a variety of contexts: in descriptions of architecture, guides for window dressing, polemics against uncleanliness, and reports on decorative trends.

Reports on the construction of new premises for Canadian businesses, which appeared throughout the *Canadian Dry Goods Review* and elsewhere, consistently detailed the dimensions, appearance and effect of the stores' plate glass windows. An 1896 profile detailed the way that "both the front and side" of a new store were "composed entirely of glass panels, sixteen in number, giving ample opportunity for window display."[164] A report on a new tailoring business noted that it was well lit since "both the front and back" of the shop were "entirely

163 "Salutatory," *The Canadian Dry Goods Review* 1, no. 1 (January 1891): 1.
164 "What a Store Should Be," *The Canadian Dry Goods Review* 6, no. 12 (December 1896): 48.

glass," with two "8½ feet wide" windows at the front.[165] These profiles often included images of the structures and detailed in accompanying text the dimensions of the plate glass display areas facing the street, particularly when these surfaces were large or impressive (fig. 24).[166] A description of Toronto's Oak Hall Building in 1893, which described the store as "a beautiful building," "full of color like a poem or a paint pot," also aligned it with American architecture, calling it a "fac simile [sic] of a famous New York dry goods store" and thus "a departure from the Canadian type of store architecture." This structure, the article emphasized, boasted "two immense show windows" of the "largest sheets of plate glass ever imported into Canada, and even then a large section of diaphanous colored glass had to be inserted in the upper portions of the windows" in order to increase the building's transparency and light.[167]

One store's connection with the modern association of European consumer spaces was made particularly apparent. Illustrating the influence of the iconic image of the Arcades on the architecture of Canadian consumption, the store of J. M. Thompson in Sault Ste. Marie, Ontario, was called "the Arcade" by its proprietor. Thompson had "taken the store next to him, and cut an archway between the two," thus giving "over three times the amount of light the building previously had."[168] This structure, and its unambiguous name, made the connection with

165 "Model Tailoring Establishment," *The Canadian Dry Goods Review* 6, no. 12 (December 1896): 52.

166 "Tilbury Business Men," *The Canadian Dry Goods Review* 10, no. 8 (August 1900): 28. Premises for new businesses in the west were described in a similar way; one article reported on the new Thomson Bros. block in Calgary, N.W.T. 1893, describing it as "a three story stone building with plate glass front, and heated with hot water." The Edmonton Bulletin regularly profiled new businesses, usually measuring the size of their plate glass display fronts: the "modern and convenient design" of the Sandison Block, with its "two large plates of glass" at 8x8 feet, "plate glass fronts" were described at both C.W. Mathers and Gariepy & Chenier's stores in Edmonton, as well as at McDougall & Secord, which boasted a corner of 12x14 square feet of plate glass. For the J. Norris store, built in 1882, the glass for the display window was brought in from Winnipeg. "The Queen's Highway," *The Canadian Dry Goods Review* 3, no. 11 (November 1893): 17; "Local," *The Edmonton Bulletin,* July 1, 1882, 3; "Local," *The Edmonton Bulletin,* April 17, 1893, 1; "Wholesale Warehouse," *The Edmonton Bulletin,* October 11, 1897, 1; "Gariepy & Chenier's New Store," *The Edmonton Bulletin,* November 21, 1898, 1; "The Sandison Block," *The Edmonton Bulletin,* November 6, 1899, 3; "Building Prospects," *The Edmonton Bulletin,* April 23, 1900, 1.

167 *The Canadian Dry Goods Review* 3, no. 11 (November 1893): 19.

168 "Sault Ste. Marie Ont." *The Canadian Dry Goods Review* 10, no. 8 (August 1900): 47.

European spaces even more concrete than the Canadian urban spaces lined with glass shopfronts that already allowed shoppers to wander and window shop like the flâneur figure.

Canadian Illustrated News also often published detailed images of shop fronts, especially when prominent businesses moved locations or constructed new commercial buildings. Many of these were done by the Swiss-born engraver and illustrator Eugene Haberer (1837-1921), who is credited with much of the architectural illustration in *Canadian Illustrated News* throughout the second half of the nineteenth century.[169] One 1873 Haberer illustration detailed the new structure of J. G. Kennedy's Clothing Store in Montreal (fig 25). In the accompanying text, *Canadian Illustrated* describes the location of this storefront, St. Lawrence Street, as "now one of the greatest thoroughfares in Montreal."[170] This image is indicative of the transformation of urban space that occurred in the nineteenth century (figs 26-28).

In the image of Kennedy's store, the glass in the display windows at street level is not rendered by pencil, but implied: the space where the glass panel would exist is framed by the storefront, but the actual glass has not been articulated by the sketching of rays of light catching its surface or by a reflection of the street before it. The viewer can see directly inside of the display window, to what looks like fabric arranged within, a darkened background, and the suggestion of a variety of objects housed inside, just beyond comprehension. Glass, the sociologist Richard Sennett has mused, is a "material which lets one see everything inaccessible to desire"—here, virtually everything is shown as being visible to the street, unmitigated by even the shining surface of the glass or imperfections in its blown surface.[171] However, it enables the

169 Evelyn de R. McMann, "Eugene Haberer," in *Biographical Index of Artists in Canada* (Toronto: University of Toronto Press, Scholarly Publishing Divison, 2003), 91.

170 Eugene Haberer, "Montreal—J. G. Kennedy's Clothing Store, ST. LAWERENCE MAIN STREET," *Canadian Illustrated News* VII, no. 21, May 24, 1873, 325.

171 Sennett, "Plate Glass," 351.

viewer only to look, not to touch. Windows, here, confer upon the goods a shining aura of inaccessibility: "restrained by the invisible wall of crystal, one can look but not touch, desire but not possess."[172]

Articles in the *Canadian Dry Goods Review* also often stressed the importance of the clarity of these shop windows, recalling some of the moralistic attitudes associated with keeping glass clean and lucid. Windows "should be cleaned every morning," advised one article, as "some of the greatest blemishes which characterize some shops [are] unpolished panes of glass."[173] Another feature warned that "dirt is a destroyer of beauty, as well as a sign of inefficiency," noting that "impression in window art is everything; the impression made upon an observer who looks through dirty glass is never an agreeable one."[174] Thorough cleaning was a necessity when displaying white items, warned another article, as "dirty glass will make the goods appear soiled."[175]

Another interruption of the transparency of Canadian shop windows was frost. The *Dry Goods Review* included a guide explaining steps to keep shop windows clear of frost on more than one occasion, recommending the regulation of the temperature of the display space so that it acted as an intermediate space, not quite inside the shop, and kept colder, so that moisture could not crystallize on its surface.[176] This technique, mentioned in multiple issues, served the additional purpose of sealing the display space from the interior of the shop, so the featured items did not become dusty.[177]

172 Miller, *Novels Behind Glass,* 4.
173 "Prize Essay on Window Dressing," 30.
174 *The Canadian Dry Goods Review* 8, no. 12 (December 1898): 14.
175 "Window Decorating," *The Canadian Dry Goods Review* 10, no. 2 (February 1900): 20.
176 "Frosty Snow-Windows," *The Canadian Dry Goods Review* 4, no. 1 (January 1894): 6.
177 "The Windows Will Not Freeze," *Canadian Dry Goods Review* 6, no. 12 (December 1896): 48.

The November 1893 issue of the *Dry Goods Review* remarked at length upon the difficulty of maintaining clean window panes, describing the rigorous work required of shop assistants in order to maintain a standard of neatness:

> Dust is everywhere, but on the windows it must not be allowed to stay. […] the store's 'boy' is industriously removing the dust from the outside of the windows, and the huge panes of plate glass glisten and glow as the child's skin pinkens after its morning bath. […] the transparency of the previous morning is restored in all its enticing freshness.[178]

Here again, the necessity of keeping the glass as transparent as possible is stressed. Given the Victorians' tendency to combine literal and symbolic meanings, it is worth considering the moralistic implications of dirt and disorder that, while not explicitly mentioned here, are strongly evident elsewhere.

Descriptions of particularly impressive arrangements in the shopfronts of Canadian businesses appeared alongside the dimensions of the plates, suggesting wide interest in the design of the displays as well as in the glass of the windows themselves. *The Globe,* reporting on the storefront of the large department store owned by Robert Simpson Company Limited in 1899, described the structure as a "Mecca:" an "immense cream brick structure, with its glistening plate-glass windows, filled with the newest and richest of spring millinery and dress goods."[179] The throngs of customers, reported the newspaper, entered the immense store "after gazing their fill on the window display," attracted by the variety of goods on display in the huge outdoor spaces of spectacle.[180] Another Toronto store boasted such a "pretty picture behind the

178 "Window Dressing," *The Canadian Dry Goods Review* 3, no. 11 (November 1893): 25.

179 Joy L. Santink, "Simpson, Robert," in Dictionary of Canadian Biography, vol. 12, Toronto/Quebec: University of Toronto/Université Laval, 1990, http://www.biographi.ca/en/bio/simpson_robert_12F.html; "The Robert Simpson," *The Globe*, March 8, 1899, 8.

180 "The Robert Simpson," 8.

large plate glass windows" in 1895 that "few could resist the temptation to linger awhile and gaze admiringly upon it."[181]

The language used in marketing publications conferred "great value" upon large store windows, arguing that "the practical and modern window dresser" "plays the most important part" in creating "saleable windows," key, they suggested, to the success and prosperity of a business.[182] *The Canadian Dry Goods Review* published a full, comprehensive essay on window dressing, which recommended regularly cleaning the windows as well as fitting the interior display space.[183] One article recommended that store owners who had "large corner window[s]" should "fit up" the areas with displays.[184] One Christmas, an article in *The Canadian Dry Goods Review* noted that seasonally-themed displays were received well by consumers: "to the crowd of youngsters on the opposite side of the window glass, never fails to create an effect."[185] The publication even regularly awarded the title of "the best dressed windows in Canada," an honor that a business in Brantford received in 1895 for a display of "Christmas goods and dolls in six plate-glass windows."[186]

More specific guides for designing and decorating windows, designed to aid retailers, were also published in *The Canadian Dry Goods Review*. These guidelines could be brief, as in a 1900 article outlining a manner in which to drape lace curtains behind windows, suggesting that each "recede a little" as they "approach the glass."[187] Other articles were more extensive in their

181 "Artistic Ideas in Autumn Millinery and Ladies' Garments—Sutcliffe's Imposing Display," *The Globe,* September 27, 1895, 6.
182 "Prize essay on Window Dressing," 28.
183 "Prize essay on Window Dressing," 28.
184 F. James Gibson, "Good Advertising for Wide Awake Retailers," *The Canadian Dry Goods Review* 8, no. 12 (December 1898): 60.
185 Gibson, "Good Advertising for Wide Awake Retailers," 60.
186 "George Caudwell," *The Canadian Dry Goods Review* 4, no. 1 (January 1894): 14.
187 The August 1900 issue reported on the new Tilbury shop: "since I last visited Tilbury, Mr. J. S. Richardson, general merchant, has moved into his large new brick premises, 40x155 ft; with plate glass front, 14x37 ft." "Lace

advice: in some cases, issues would include sketches of suggestions for the layouts of window design, demonstrating fashionable ways in which to drape fabric and arrange items (fig 30). The position of "window-trimmer" appears to have been an occupation born of necessity after the widespread adoption of huge plate-glass encased merchandising areas. The *Dry Goods Review* described seasonal changes to window display based on the time of year, suggesting that August, though "the dullest month of the year to the average dry goods house," should still be a time in which "little displays in the window" were thought out, if not "on as elaborate and extensive a scale as in the months of April or May."[188]

The shoppers attracted by these windows were often clearly gendered in articles about window displays, a trend reflective of shifting social trends around shopping that allowed women "new and more" access to public space as consumers.[189] An 1895 article described the growing trend in which "ladies at times go out for the purpose of 'looking on'" at window displays, trips upon which "their fancy" could be "taken up by the attractiveness and a remarkable cheapness of certain articles in a window."[190] "The display in Eaton's windows yesterday," described the *Globe* on one occasion, "caused many a woman to stop, admire and silently register a vow of an early-morning trip down town."[191] In addition, descriptions of this window shopping often used "she" to refer to customers, such as one 1900 article that followed a customer from window to store interior: "once in, the customer may see other things she wants," it reads, having pointed to

Curtain Window," *The Canadian Dry Goods Review* 10, no. 8 (August 1900): 26. Many articles advised draping various materials as a background for these displays, often simply saying something to the effect of "a background […] should always be draped." *The Canadian Dry Goods Review* 8, no. 12 (December 1898): 14.

188 "Window and Store Decorating," *The Canadian Dry Goods Review* 10, no. 8 (August 1900): 20.

189 Friedberg, *Window Shopping,* 35-37.

190 "Prize Essay on Window Dressing," 30.

191 "In the Shops," *The Globe*, July 3, 1907, 8.

the importance of an attractive display, "and no matter how much she purchases under these conditions the credit of the sale belongs to the window."[192]

Glass proliferated as shop front windows but also throughout the interiors of shops, attracting customers on the street and dazzling those within by placing products on display. Cases made of glass were often marketed to retailers on the basis of their ability to make products visible as well as on their ability to keep objects sanitary and protected. One illustrated feature for a collar and cuff case noted its function of "displaying collars so that many styles can be shown together, so securely encased as to be kept clean" (fig 29). The case, suggested the accompanying passage, was constructed in such a way that "dirt cannot enter."[193] In the two illustrations, the case is shown both closed, showcasing pristine white collars and cuffs, and opened at the side, empty within; in both images, the clarity of the glass is emphasized by straight lines that cut across the front panel, as though light is being reflected evenly across the surface, offering a clear line of sight to the products within, available for consumer desire (fig 31). The *Dry Goods Review* also recommended that window displays include "a background of glass casing" in order to ensure "protection from dust, etc."[194]

In the *Canadian Illustrated News,* interiors of shops were rendered in lifelike detail, depictions that included the glass cases that showcased products. In an 1871 illustration of a Montreal cigar store, the display counter, encased entirely in glass, reflects the objects arranged upon it—small statuettes and trinkets—in perfect inverted images on its surface, while the items for sale within appear accessible from the front of the polished glass surface (fig 32). In an 1872 image of the lavish interior of a Toronto jewellery store, slanted glass cases line walls of

192 "Window Decorating," *The Canadian Dry Goods Review* 10, no. 2 (February 1900): 20.
193 "A Collar and Cuff Case," *Canadian Dry Goods Review* 8, no. 11 (November 1898): 42.
194 *The Canadian Dry Goods Review* 8, no. 12 (December 1898.): 14.

cabinetry as customers mill about, observing objects on display (fig 33). A woman in the foreground gazes into a tall glass case, so close that she appears to press her nose up against the glass. Her physical inability to access the objects of her desire is almost palpable in this image, and the material solidity of the glass is emphasized by its success in restraining her touch while its optical permeability maintains her unwavering gaze. Another image of a jewellery store, this one in Toronto, from the same year depicts women shoppers, accompanied by children, flitting between central, chest-height glass cases—the contents of which are obscured by what appears to be smudged or dusty glass surfaces reflecting the light, which nevertheless lend the image of the interior a sense of slick modernity, of luxury products protected by the restraining layer of a material which serves to place these objects of sale within the view of the consumer (fig 34).

Mirrored surfaces were also common in shop interiors, providing another smooth glass surface off of which the images of consumers and their objects of desire were reflected and refracted.[195] Some cultural theorists, including Anne Friedberg, Elizabeth Outka and Rachel Bowlby, have argued for the connection between the shop window and the mirror as architectural forms that facilitating identity formation through consumption in the late nineteenth century.[196] Bowlby describes the way shop windows, catering to a feminized consumer, showed women both the objects of their consumer desire as well as an implied idealized self, furnished with those products.[197] In Anne McClintock's interpretation, mirrors themselves are a fetish of imperial progress and commodity racism, signifying cleanliness and purity by sharply reflecting

195 The writer Ian Mortimer suggests that the glass mirror, which allowed a clearer and less distorted image than earlier metal or obsidian reflective surfaces, prompted a shift in the way people perceived themselves. Now reflected clearly as unique persons, separated from those around them, argues Mortimer, mirror gazers began to understand their individual identities in a manner distinguished from that predating the Enlightenment. Ian Mortimer, "The Mirror Effect," *Lapham's Quarterly* (November 9, 2016), https://www.laphamsquarterly.org/roundtable/mirror-effect.

196 Outka, *Consuming Traditions,* 137; Freidberg, *Window Shopping,* 66; Rachel Bowlby, *Just Looking: Consumer Culture in Dreiser, Gissing and Zola* (New York: Metheun, 1985), 32.

197 Bowlby, *Just Looking,* 32.

the image of white power in advertisements and photographs.[198] In a number of Canadian stores, mirrored surfaces existed alongside glass panes, underscoring the capacity of these consumer spaces to reflect images of the shoppers. "A number of large full length mirrors" were "scattered around" Toronto's Oak Hall Building in 1893, providing a dazzling experience of a lit interior with reflections and refractions throughout, and at R. J. Tooke's premises in Montreal, steel plate glass mirrors encased the building's interior steel supports "so that their presence is not noted."[199] In some cases, mirrors made up the background of window display cases, reflecting the articles on display multiple times over.[200]

In an illustration of a Montreal jewellery store in the *Canadian Illustrated News*, male shopkeepers attend rows of glass cases of open jewellery boxes, while a clientele composed almost entirely of women, impeccably dressed and poised, regards the selection, facing walls adorned with circular, framed mirrors to allow visitors to the shop to gaze at their own reflections while shopping (fig 35). As well as providing the physical function of reflecting window light into darkened corners, for many cultural theorists, mirrored surfaces were indicative of a consumer culture that relied more and more on spectacles of fetishized products and the mediation of desire.[201] Interiors laden with reflective mirrored surfaces might also be interpreted as consistent with the illusion and deception that Benjamin suggested characterized the commodified images of modernity, which, he argued, subverted the possibility of

198 McClintock, *Imperial Leather,* 32.

199 *The Canadian Dry Goods Review* 3, no. 11 (November 1893): 19; What a Store Should be," *The Canadian Dry Goods Review* 6, no. 12 (December 1896): 48.

200 Mirrors could "make a successful background" according to one article that also advised the use of glass casing in window displays. *Canadian Dry Goods Review* 8, no. 12 (December 1898): 14.

201 Behind the lights in one men's furnishings establishment was a "semi-circular silver reflector, which [threw] the light on the goods in the window. Part of the light [was] again reflected from the mirrors at the back of the window." "What a Store Should Be," 48.

contemplation by necessitating an observer in motion, whose vision "is always multiple" and who can never have "pure access to a single object."[202]

Having a larger proportion of glass incorporated into commercial structures also allowed for the greater admission of natural light. One technology invented to intensify this material capacity was the glass block, constructed to diffuse light and manufactured under the name "Luxfer Prisms." It is clear from their invention that contemporaries were sometimes unsatisfied with the amount of light that normal panes of glass admitted, and saw this as an area to be improved upon. Several business profiles make reference to "glass prisms" or "prismatic glasses" that threw light further into rooms.[203] An August 1897 article in the Toronto *Globe* describes the invention of the product as "equal in commercial importance to the Bell Telephone."[204] The article describes the way these perform as such: "the window prisms consist of glass plates having a series of semi-prisms on the outside," made from "the finest flint glass" which the article informs us has a "high refracting index." When natural light comes into contact with these plates "from the sky" from any angle, it passes through the prisms, thus being "made to travel in a horizontal direction to the farthest limit of any large room."[205]

Luxfer prisms were advertised to retailers in the *Canadian Dry Goods Review* throughout the 1890s, to illuminate shop interiors and allow for the greater visibility and thus the usage of lesser-used interiors, such as conventionally dim basements, as retail space. In the most widely-circulated advertisement for this product, two illustrations of "100 Feet Long" basement spaces appear alongside one another; one, "Lighted by Luxfer Prisms," is fully illuminated, while the one "Lighted by Ordinary Glass" appears shadowy, its features and contents obscured by

202 Crary, *Techniques of the Observer,* 19-21.
203 "Model Tailoring Establishment," 52.
204 "Luxfer Prisms…," *The Globe*, August 7, 1897, 4.
205 "Luxfer Prisms…," 4.

darkness. “Why Not Make Use of the Valuable Space in Your Basement,” the text prompted (fig 36). In the lighter room, the two windows at the back end of the room are the source of a great prism of light that has revealed the details in all corners of the interior; their centrality and the far-reaching impact of their brightness suggesting the almost transcendent impact of the prism windows. The advertisements herald the Prisms as “The Greatest Invention of the Victorian Era.”

The glass of Canadian storefront windows also functioned to allow light to travel from inside to out, once interiors were lighted in the evening. An 1898 article on proper window trimming advised Canadian store owners, “do not be afraid to illuminate. Light inspires confidence; darkness or dinginess invariably creates distrust. An ill-lighted window gives a bad impression.”[206] Store windows, not just the objects they displayed. could be objects of beauty and interest in themselves—one description of a Toronto department store described in detail that “when lighted up with the 110 incandescent lamps,” the building’s windows became a “shining iridescent blaze of glory and are worth coming many miles to see.”[207] Luxfer Prisms also played this role: “when the interior of the premises are lighted up” at night, one article concluded, “the appearance of the prisms from the outside is very beautiful indeed,” and the author recommends that the glass blocks “become a staple article as generally in use as plate glass.”[208] Light was thus described as travelling in both directions through glass panels, not just from the exterior into shops, but also outwards, to beautify commercial streets when shops were artificially lit from within.

206 *The Canadian Dry Goods Review* 8, no. 12 (December 1898): 14.
207 *The Canadian Dry Goods Review* 3, no. 11 (November 1893): 19.
208 For an elucidation of the ways in which urban space was transformed by the introduction of electric light for purposes of commodity exchange including illuminated advertisements, and lighted shop interiors, see Henry Urbach, “Dark Lights, Contagious Space,” in *InterSections: Architectural Histories and Critical Theories,* ed. Iain Borden and Jane Rendell (London: Routledge, 2000), 150-160.

Plate glass, though it physically separated consumers from goods, was also often broken. Though those articles predicting the death of brittle, weak glass through tempering had evoked a future of unbreakable household items, in which "nobody will believe woman has ever been the terrible creature we all know she can be," glass, of course, continued to shatter.[209] Plate glass was particularly prone to damage, and could be a weak point from which thieves could access products. In *Victorian Glassworlds,* Isobel Armstrong suggests that plate glass embodied the notion of intense opposing emotion: first, it symbolised the acquisition and entertainment promised by a full shopfront, but the other side of that promise, retained the prospect of violence that expanses of thin glass always threatened.[210] In December 1884, *The Globe* reported a robbery wherein a criminal had "struck the plate-glass" of a shop "a terrific blow and smashed it" in order to take bank notes within.[211] Plate glass, unlike the solid walls of a shop, was thus a liability—a point of access which could be broken in order to steal goods or money. However, the glass also acted as an alarm—the same article noted that it was the sound of "the crashing glass" that alerted an officer of the trouble—and as punishment itself: the now prisoner was found with his hands "terribly lacerated."[212]

The sharpness of broken glass thus made it an insidious material. A story appearing in the *Dry Goods Review* in 1893 described the story of an Ontario hatter and furrier named Will Jackson, who twenty-three years prior had "shoved his hand through" a plate of glass while cleaning it, thus cutting his wrist. When his wound healed, explains the article, it only troubled him slightly, but, "the other day a small sore broke out on his hand, and after festering for a

209 "Toughened Glass," *The Globe,* June 17, 1875, 2.
210 Armstrong, *Victorian Glassworlds,* 10.
211 "A Toronto Hatter: Smashes a Plate-Glass Window for Bank Notes, Special despatch to The Globe," *The Globe,* December 6, 1884, 3.
212 "A Toronto Hatter: Smashes a Plate-Glass Window for Bank Notes, Special despatch to The Globe," 3.

couple of days he pulled out a small piece of glass which he ha[d] evidently been carrying about all these years."[213]

However, a broken window might also be understood as a an object of fascination, and was even used as an advertising gimmick: a furnisher business in Toronto put on a display in 1900 that had the illusory appearance of a large hole in the front of its plate glass window, as though a brick had been thrown inside.[214] The illusion was created with "thin strips of plate glass with rough edges" made to converge at a central point, resembling cracks and a hole, in order to communicate that "a 'smashing' sale in clothing" was being held.[215]

The increasing presence of plate glass in Canada's urban areas signified, in part, a turn to a new order of commercial space. Storefronts boasting larger and larger dimensions of transparent panes were increasingly lauded by aesthetic theorists throughout the late nineteenth century, and the eventual triumph of the department store, an "emporium of profligate consumerism" in which "to see and be seen," was a triumph of visual spaces of display, mediated only by glass windows.[216] Like other changes ushered in by modernization, this shift was double-edged, with glass implying not just the capitalist utopian promise of endless choice and identity construction, but also the persistent unavailability of this dream to the majority of consumers, and the threat of harm retained toward those who would breach this obstacle.

Conclusion

213 *The Canadian Dry Goods Review* 3, no. 11 (November 1893): 19.

214 Word spread in 1853 to the Toronto *Globe* of a window in Paris shattered by a horse backing into it, creating a window with "cracks radiating from the centre with wonderful regularity," "so numerous that the pane presents the appearance of a gigantic cobweb" that, "seen from the interior of the shop by gas light," reflected "prismatic colours with extraordinary brilliance." So impressive was this broken window, indeed, apparently prompted a speculator to offer 4,000 francs for the broken window, and others to find out "how to crack another window in the same way." "Value of a Broken Pane of Glass," *The Globe,* February 22, 1853, 89.

215 "A Striking Window," *The Canadian Dry Goods Review* 10, no. 2 (February 1900): 66.

216 Carr, "New Building Technology," 124-125.

Had the narrative of the adoption of glass into Canada's architectural space been one of universal acceptance and collective experience, its increasing proliferation throughout the urban centres of the Dominion may have suggested a simple story of teleological modernization. Glass spaces did, on some level, directly connote this process for many Canadians. Articles exalting glass technology and praising the Canadian crystal palaces suggest that some writers saw a connection between glass and a certain collective modernization. When glass was given primacy in accounts and illustrations of Canadian exhibition palaces, newspapers seemed to suggest that Canada's widespread adoption of plate glass spaces, mirroring that which was occurring throughout Europe, was a consciously imitative, but successful, emulation of the industrial, modern spaces that were establishing themselves elsewhere.

Glass, however, embodied contradiction. The 1875 *Toronto Globe* article exalting the wide applications of glass noted that while glass was normally "honest and clear as the conscience of a saint," it was not always a transparent and uncoloured surface, relaying things exactly as they were. Indeed, it could be "a kind of merciful imposter, and tender to human vanity," posing as precious stones in the jewellery of those who could not afford the real thing.[217] Shopfronts with large plate-glass windows would be lauded for their modern appearance though this statement was often made based on a comparison to structures built decades earlier and already famous for their display areas. Glass was held in metaphor as pristine, pure and untouchable even as it emerged from sooty factories and was born of the very breath of workers; while when it stood on street fronts it collected dust, dirt, and frost, and even as it shattered beneath the blows of thieves or errant horses. In short, glass, despite its seemingly direct

217 "Toughened Glass," 2.

metaphorical meaning—of truth, clarity and honesty, maintained the capacity to behave in unexpected, contradictory, and paradoxical ways.

This quality of multiplicity that glass maintained makes it particularly apt as the distinguishing material of modernity. As Anthony Giddens, and many after him, have identified, modernity has been a "double edged phenomenon," ushering social and economic changes that benefitted people while precipitating degrading work conditions, totalitarianism resulting from consolidated political power, and the development of military power.[218] The cementing of glass as a material signifier of modern style and space is thus doubly pertinent: as glass behaved in contradictory, ambivalent ways, so too did the stylistic and social changes accompanying its application usher in polarizing effects.

The diversity of depictions and descriptions of plate glass across Canadian print culture is indicative of the aptness of glass as a metonym for Victorian Canada. Just as glass reflected one instance and revealed the next, some Canadians saw the glass in their architecture as indicative of a country coming into a collective selfhood on the world stage, while some drew attention to the ways in which their glass architecture came up short beside the European examples they attempted to emulate. At a time when the nation was composed of a multiplicity of conflicting groups, all exerting influence over an eventual idealized collectivity, it was the points at which ideas of this nation differed, as much as the arenas upon which citizens agreed, that gave Canada its conflicting and contested character as it began to articulate itself as an independent nation.

218 Anthony Giddens, *The Consequences of Modernity* (Stanford: Stanford University Press, 1990), 7-8.

Figures

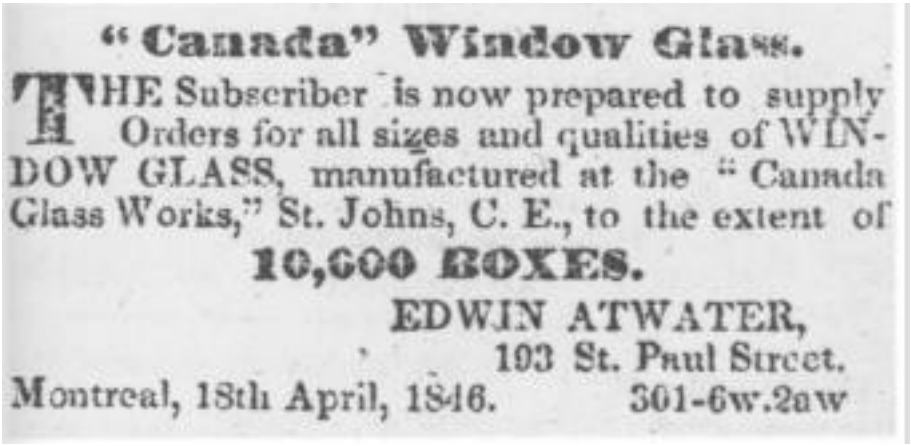


Figure 1
This advertisement ran until April 1847. "Canada" Window Glass. Advertisement of the Canada Glass Works, Canadian Economist, 2 May 1846. Public Archives Canada, Newspaper Section, Ottawa.

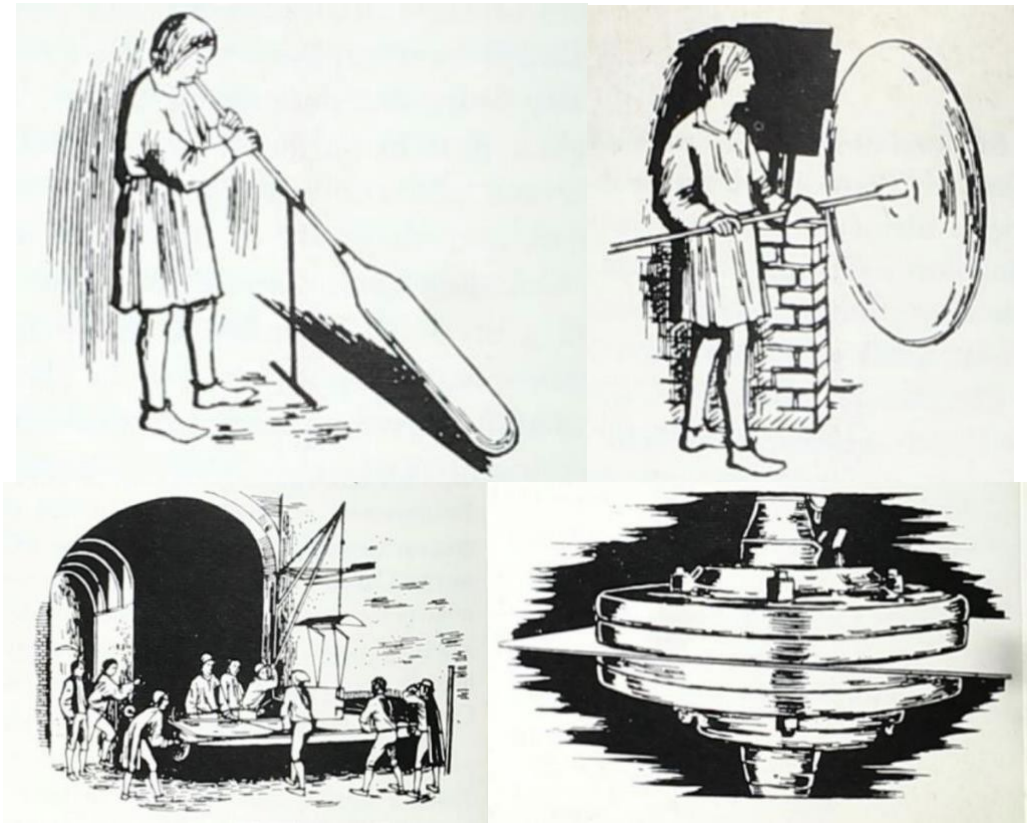
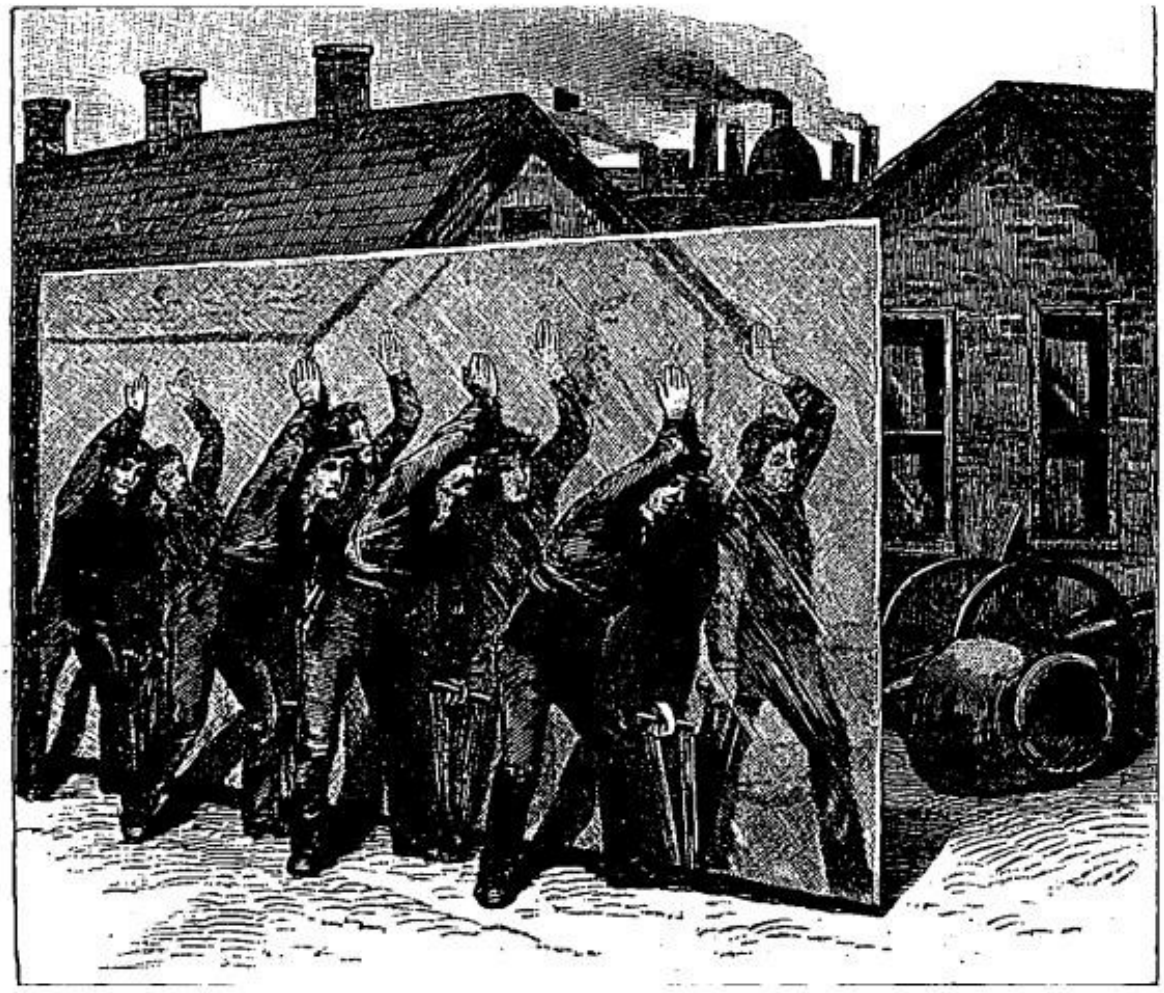


Figure 2
Cylinder plate glass manufacturing method, illustrated in Gerald Stevens, *Early Canadian Glass,* (Toronto: The Ryerson Press, 1961), x.



CARRYING A FINISHED PLATE TO THE STORE-ROOM.

Figure 3
"Carrying a Finished Plate to the Store-Room," from "HOW AMERICAN PLATE-GLASS IS MADE," *Frank Leslie's Popular Monthly* XXVVI, December 1888, 6.

From Barnum's Museum, New York.

THIRD AND LAST WEEK!

AFTERNOON AND EVENING.

Will most Positively Close on Saturday Evening, August 28th.

ST. LAWRENCE HALL!!

THE MONSTER PANORAMA OF

THE CRYSTAL PALACE

Unparalleled Attraction!!

Proprietor.....Mr. P. T. BARNUM.

Chief Artist.....Sig. De Lamson.

Manager and Delineator.....H. Eldon Hall.

Two Exhibitions Daily,

At Three and Eight o'clock P. M. Admission only 1s. 3d; Front and Reserved Seats 1s 10½d; Children under 10 years of age 7½d.

NOW OPEN,

The Brilliantly patronized progressive Mirror of

THE WORLD'S FAIR,

comprising the whole exterior and interior of the renowned CRYSTAL PALACE; the Royal Procession; the grand opening by Queen Victoria and the British Court; superb view of the whole Nave; the Nave in all its parts; the American Division; the whole Transept; the British Division; the Agricultural and Mechanical Courts; the Canadian Department and Court. The whole preceded by a bird's eye view of the Crystal Palace and the West End of London—and ending with a superb view of the Yacht America and Royal Yacht squadron of Great Britain, off Cowes.

Toronto, August 24th, 1852. 730

Figure 4
"The Monster Panorama of the Crystal Palace" Advertisement, *The Toronto Examiner,* August 25, 1852, 3, Newspapers.com.

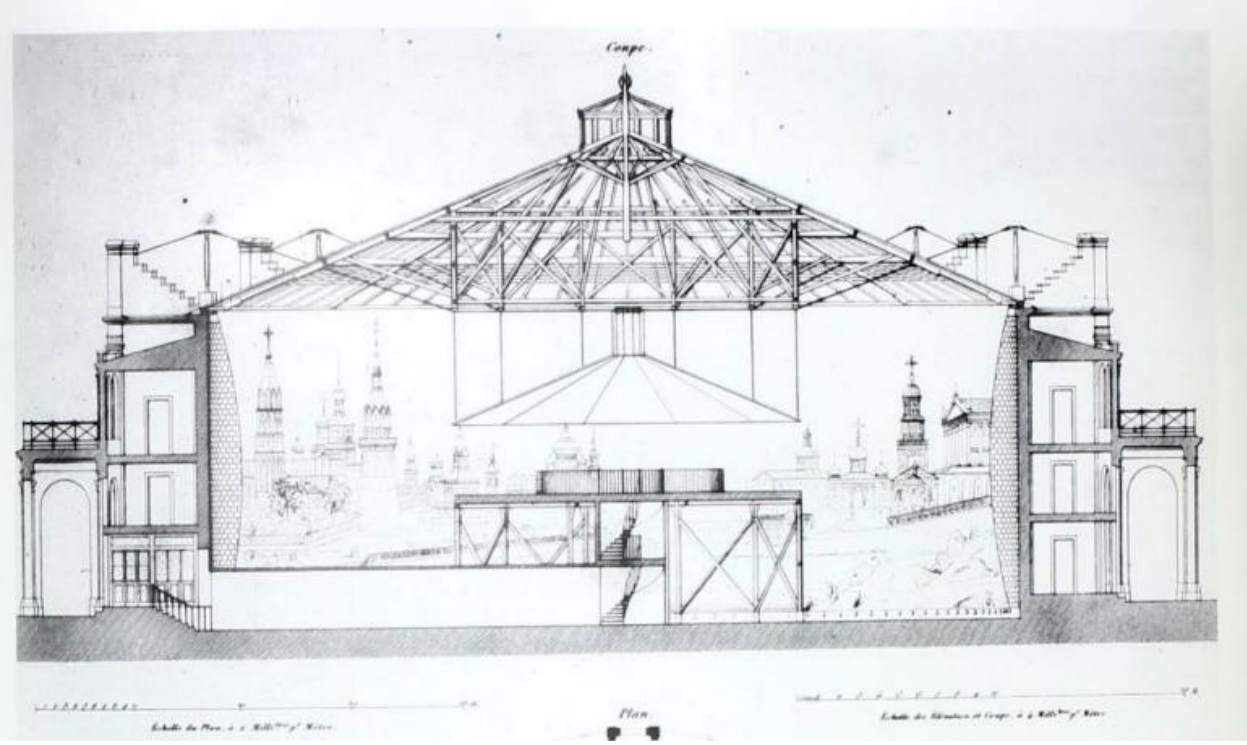


Figure 5
Hittorf's Paris panorama (1838), section, Quatremère de Qunicy (1832), British Library.
Published in Denise Blake Oleksijczuk, *The First Panoramas: Visions of British Imperialism* (Minneapolis and London: Minneapolis University Press, 2011), 217.

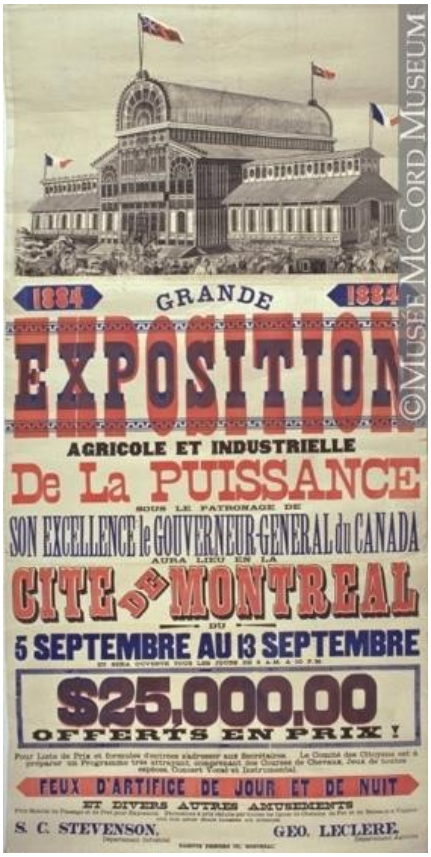
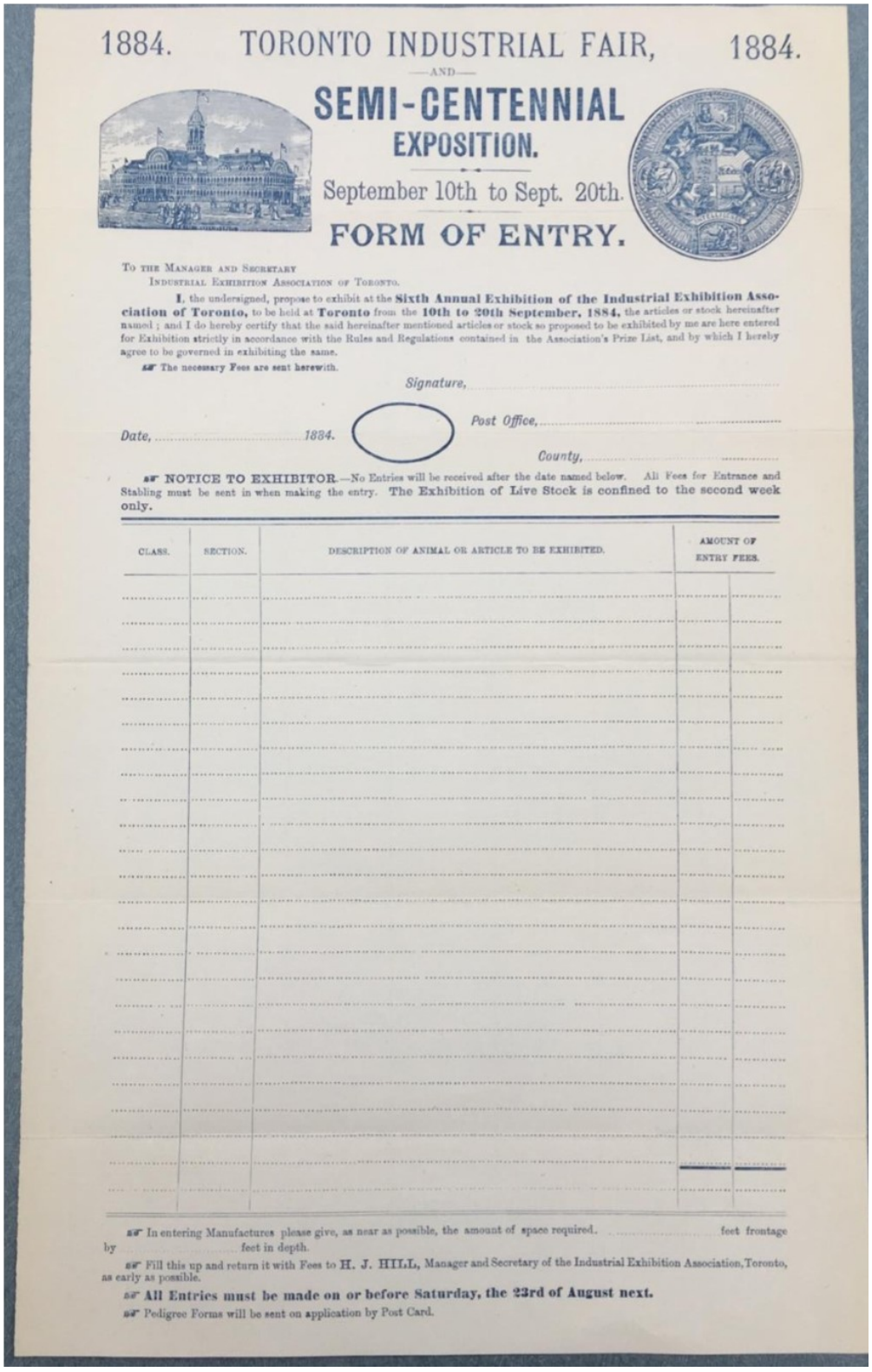


Figure 6
Anonymous, Dominion Great Agricultural and Industrial Exhibition. 1884, 219x106 cm. M977X.56, McCord Museum.

Figure 7
"Admission ticket to the inauguration by H.R.H. the Prince of Wales, 1860" Montreal, 1860. M14327, McCord Museum



1884. TORONTO INDUSTRIAL FAIR, 1884.

—AND—

SEMI-CENTENNIAL EXPOSITION.

September 10th to Sept. 20th.

FORM OF ENTRY.

To the Manager and Secretary
Industrial Exhibition Association of Toronto.

I, the undersigned, propose to exhibit at the **Sixth Annual Exhibition of the Industrial Exhibition Association of Toronto,** to be held at **Toronto** from the **10th to 20th September, 1884,** the articles or stock hereinafter named; and I do hereby certify that the said hereinafter mentioned articles or stock so proposed to be exhibited by me are here entered for Exhibition strictly in accordance with the Rules and Regulations contained in the Association's Prize List, and by which I hereby agree to be governed in exhibiting the same.

☞ The necessary Fees are sent herewith.

Signature, ...

Date, ... *1884.* *Post Office,* .....

County, ...

☞ **NOTICE TO EXHIBITOR.**—No Entries will be received after the date named below. All Fees for Entrance and Stabling must be sent in when making the entry. **The Exhibition of Live Stock is confined to the second week only.**

CLASS.	SECTION.	DESCRIPTION OF ANIMAL OR ARTICLE TO BE EXHIBITED.	AMOUNT OF ENTRY FEES.	

☞ In entering Manufactures please give, as near as possible, the amount of space required. ..... feet frontage by ..... feet in depth.

☞ Fill this up and return it with Fees to **H. J. HILL,** Manager and Secretary of the Industrial Exhibition Association, Toronto, as early as possible.

☞ **All Entries must be made on or before Saturday, the 23rd of August next.**

☞ Pedigree Forms will be sent on application by Post Card.

Figure 8
Toronto Industrial Fair Form of Entry, 1884. Spadina Records Centre, City of Toronto Archives, Toronto, Ontario, Canada.

Figure 9
Crystal Palace Medallion, 1880-1882. C4-0-1-0-2, acc #1981-127. CNE Archives, Toronto, Ontario, Canada.

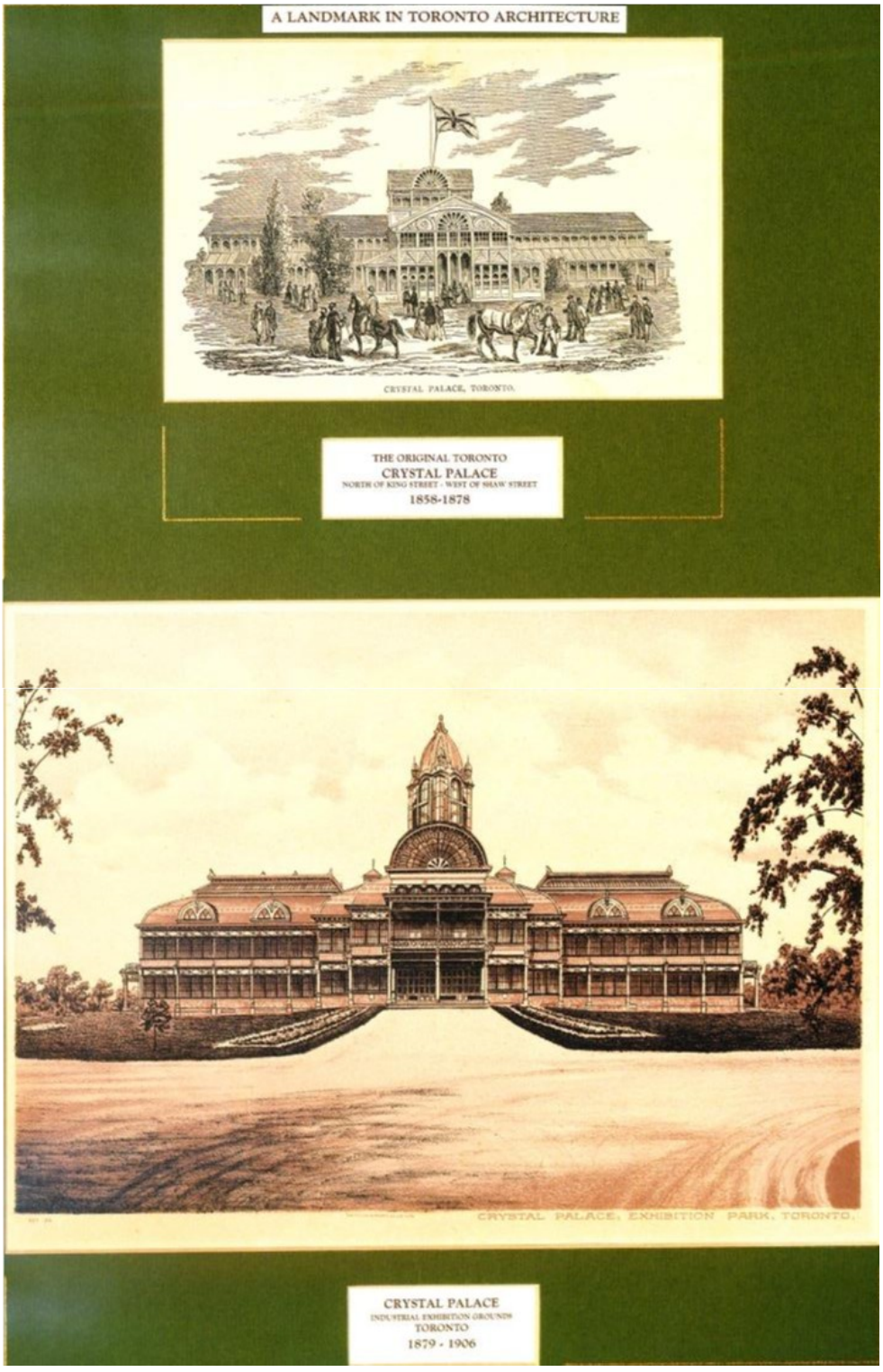


Figure 10
"Two Crystal Palaces (Between 1855 and 1898)." Toronto City Archives, Spadina Records Centre, Fonds 70, Series 858, file 39, Toronto, Ontario, Canada.

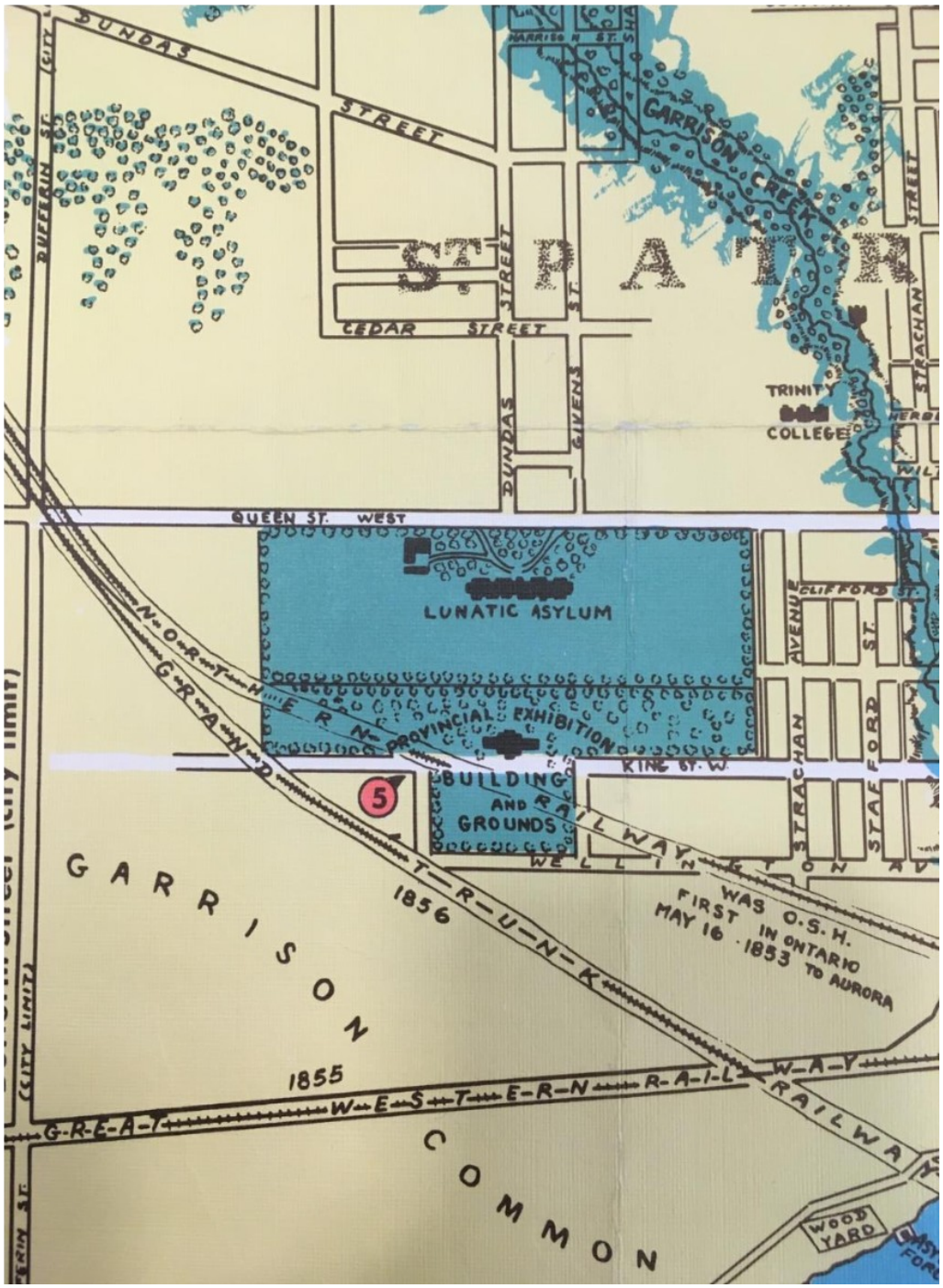


Figure 11
Location of Toronto Crystal Palace on Exhibition Building Grounds. “Toronto, Canada, about the year 1867,” 1964. Fonds 200, Series 726, Item 103. Box 200770. Spadina Records Centre, City of Toronto Archives. Note; this is the 1878 location of the structure, not the original location, so the map is incorrect in this sense. Toronto, Ontario, Canada.

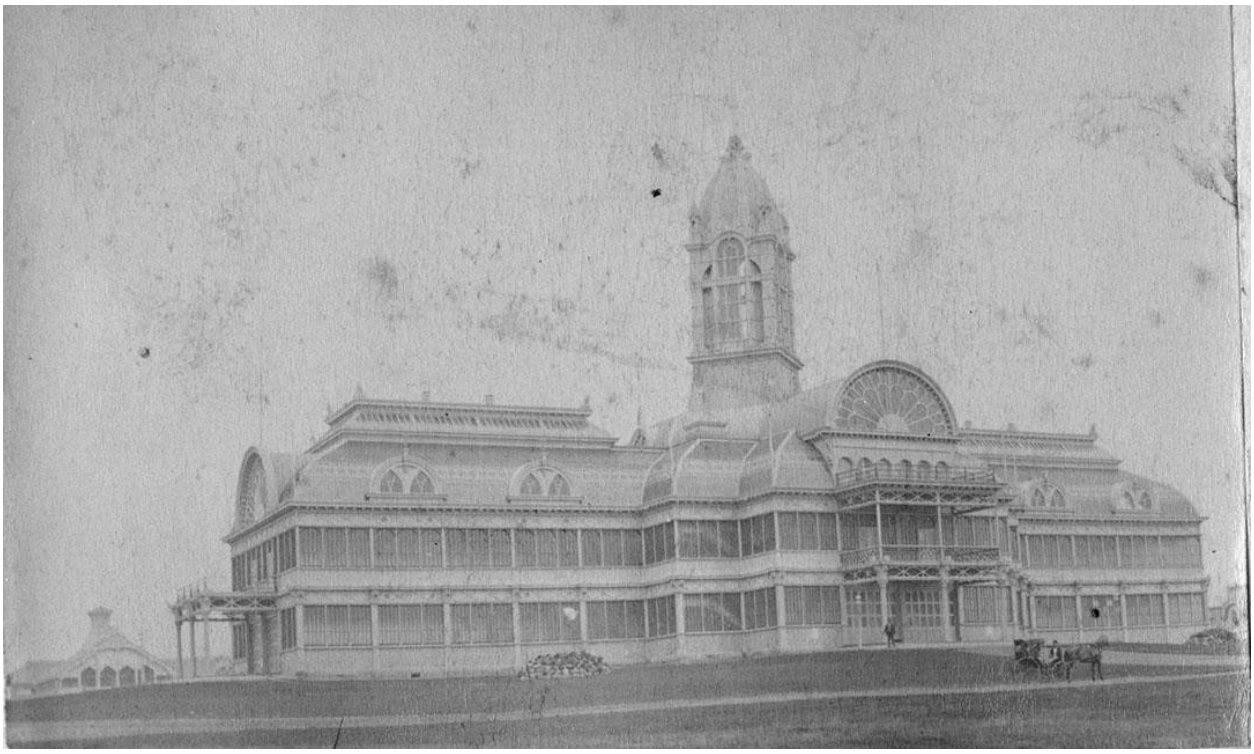
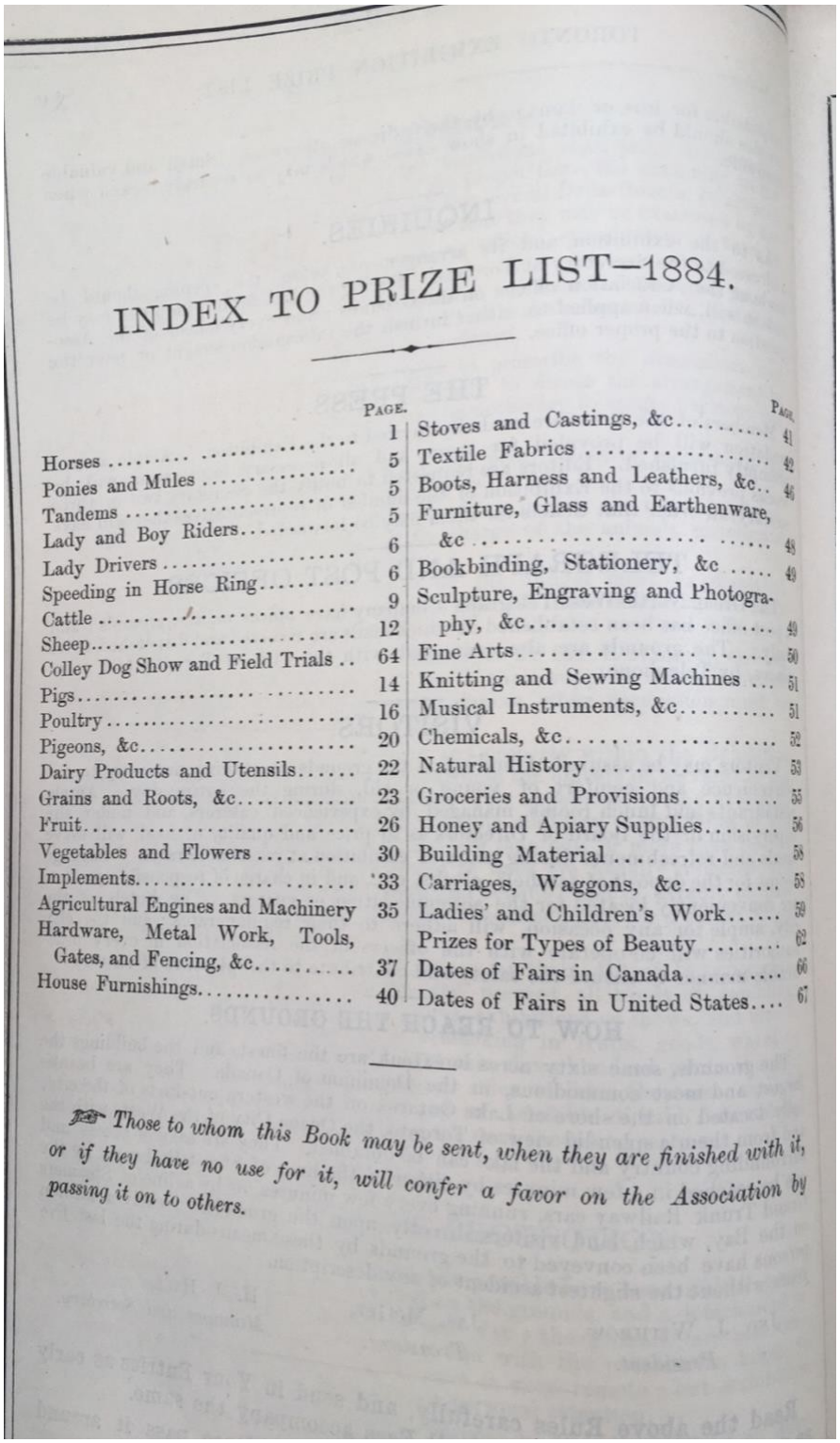


Figure 12
"Crystal Palace, 1878." CN Heritage. CNE Archives, Photo Collection, Toronto, Ontario, Canada.

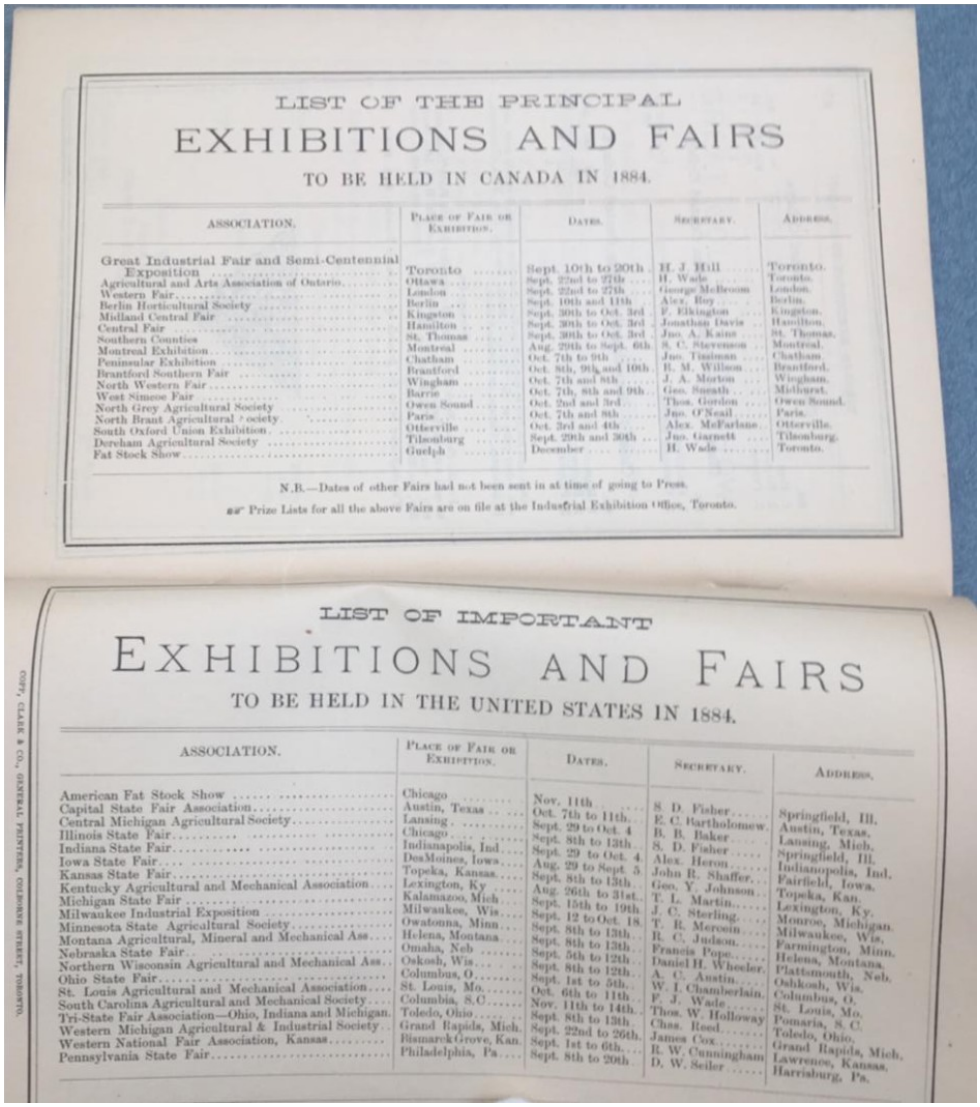
Figure 13
Notman, William. “Crystal Palace, St. Catherine Street, Montreal, QC, 1866.” Photograph. 1866. Silver salts on paper mounted on card-Albument process. 8x5 cm. 1-20722.2 McCord Museum. http://collections.musee-mccord.qc.ca/en/collection/artifacts/I-20722.2



INDEX TO PRIZE LIST—1884.

☞ *Those to whom this Book may be sent, when they are finished with it, or if they have no use for it, will confer a favor on the Association by passing it on to others.*

Figure 14
"Prize List. The Great Industrial Fair & Semi-Centennial Exposition, 1884." Toronto, Sep. 10th to 20th, 1884, 2. Toronto City Archives, Spadina Records Centre, Box 226310, Fonds 70, Series 756, File 3, Toronto, Ontario, Canada.



LIST OF THE PRINCIPAL

EXHIBITIONS AND FAIRS

TO BE HELD IN CANADA IN 1884.

ASSOCIATION.	PLACE OF FAIR OR EXHIBITION.	DATES.	SECRETARY.	ADDRESS.
Great Industrial Fair and Semi-Centennial Exposition	Toronto	Sept. 10th to 20th	H. J. Hill	Toronto.
Agricultural and Arts Association of Ontario	Ottawa	Sept. 22nd to 27th	H. Wade	Toronto.
Western Fair	London	Sept. 22nd to 27th	George McBroom	London.
Berlin Horticultural Society	Berlin	Sept. 10th and 11th	Alex. Rey	Berlin.
Midland Central Fair	Kingston	Sept. 30th to Oct. 3rd	F. Elkington	Kingston.
Central Fair	Hamilton	Sept. 30th to Oct. 3rd	Jonathan Davis	Hamilton.
Southern Counties	St. Thomas	Sept. 30th to Oct. 3rd	Jno. A. Kains	St. Thomas.
Montreal Exhibition	Montreal	Aug. 29th to Sept. 6th	S. C. Stevenson	Montreal.
Peninsular Exhibition	Chatham	Oct. 7th to 9th	Jno. Tunican	Chatham.
Brantford Southern Fair	Bradford	Oct. 8th, 9th and 10th	R. M. Willson	Brantford.
North Western Fair	Wingham	Oct. 7th and 8th	J. A. Morton	Wingham.
West Simcoe Fair	Barrie	Oct. 7th, 8th and 9th	Geo. Sneath	Midhurst.
North Grey Agricultural Society	Owen Sound	Oct. 2nd and 3rd	Thos. Gordon	Owen Sound.
North Brant Agricultural Society	Paris	Oct. 7th and 8th	Jno. O'Neail	Paris.
South Oxford Union Exhibition	Otterville	Oct. 3rd and 4th	Alex. McFarlane	Otterville.
Dereham Agricultural Society	Tilsonburg	Sept. 29th and 30th	Jno. Garnett	Tilsonburg.
Fat Stock Show	Guelph	December	H. Wade	Toronto.

N.B.—Dates of other Fairs had not been sent in at time of going to Press.

☞ Prize Lists for all the above Fairs are on file at the Industrial Exhibition Office, Toronto.

LIST OF IMPORTANT

EXHIBITIONS AND FAIRS

TO BE HELD IN THE UNITED STATES IN 1884.

ASSOCIATION.	PLACE OF FAIR OR EXHIBITION.	DATES.	SECRETARY.	ADDRESS.
American Fat Stock Show	Chicago	Nov. 11th	S. D. Fisher	Springfield, Ill.
Capital State Fair Association	Austin, Texas	Oct. 7th to 11th.	E. C. Bartholomew.	Austin, Texas.
Central Michigan Agricultural Society	Lansing	Sept. 29 to Oct. 4	B. B. Baker	Lansing, Mich.
Illinois State Fair	Chicago	Sept. 8th to 13th	S. D. Fisher	Springfield, Ill.
Indiana State Fair	Indianapolis, Ind	Sept. 29 to Oct. 4	Alex. Heron	Indianapolis, Ind.
Iowa State Fair	DesMoines, Iowa	Aug. 29 to Sept. 5	John R. Shaffer	Fairfield, Iowa.
Kansas State Fair	Topeka, Kansas	Sept. 8th to 13th	Geo. Y. Johnson	Topeka, Kan.
Kentucky Agricultural and Mechanical Association	Lexington, Ky	Aug. 26th to 31st.	T. L. Martin	Lexington, Ky.
Michigan State Fair	Kalamazoo, Mich	Sept. 15th to 19th	J. C. Sterling	Monroe, Michigan.
Milwaukee Industrial Exposition	Milwaukee, Wis	Sept. 12 to Oct. 18.	T. R. Mercein	Milwaukee, Wis.
Minnesota State Agricultural Society	Owatonna, Minn	Sept. 8th to 13th	R. C. Judson	Farmington, Minn.
Montana Agricultural, Mineral and Mechanical Ass.	Helena, Montana	Sept. 8th to 13th	Francis Pope	Helena, Montana.
Nebraska State Fair	Omaha, Neb	Sept. 5th to 12th	Daniel H. Wheeler.	Plattsmouth, Neb.
Northern Wisconsin Agricultural and Mechanical Ass.	Oskosh, Wis	Sept. 8th to 12th	A. C. Austin	Oshkosh, Wis.
Ohio State Fair	Columbus, O	Sept. 1st to 5th.	W. I. Chamberlain.	Columbus, O.
St. Louis Agricultural and Mechanical Association	St. Louis, Mo	Oct. 6th to 11th	F. J. Wade	St. Louis, Mo.
South Carolina Agricultural and Mechanical Society	Columbia, S.C	Nov. 11th to 14th.	Thos. W. Holloway	Pomaria, S. C.
Tri-State Fair Association—Ohio, Indiana and Michigan.	Toledo, Ohio	Sept. 8th to 13th	Chas. Reed	Toledo, Ohio.
Western Michigan Agricultural & Industrial Society.	Grand Rapids, Mich.	Sept. 22nd to 26th.	James Cox	Grand Rapids, Mich.
Western National Fair Association, Kansas	Bismarck Grove, Kan.	Sept. 1st to 6th.	R. W. Cunningham	Lawrence, Kansas.
Pennsylvania State Fair	Philadelphia, Pa	Sept. 8th to 20th	D. W. Seiler	Harrisburg, Pa.

Figure 15
"Prize List. The Great Industrial Fair & Semi-Centennial Exposition, 1884." Toronto, Sep. 10th to 20th, 1884, 4-5. Toronto City Archives, Spadina Records Centre, Box 226310, Fonds 70, Series 756, File 3, Toronto, Ontario, Canada.

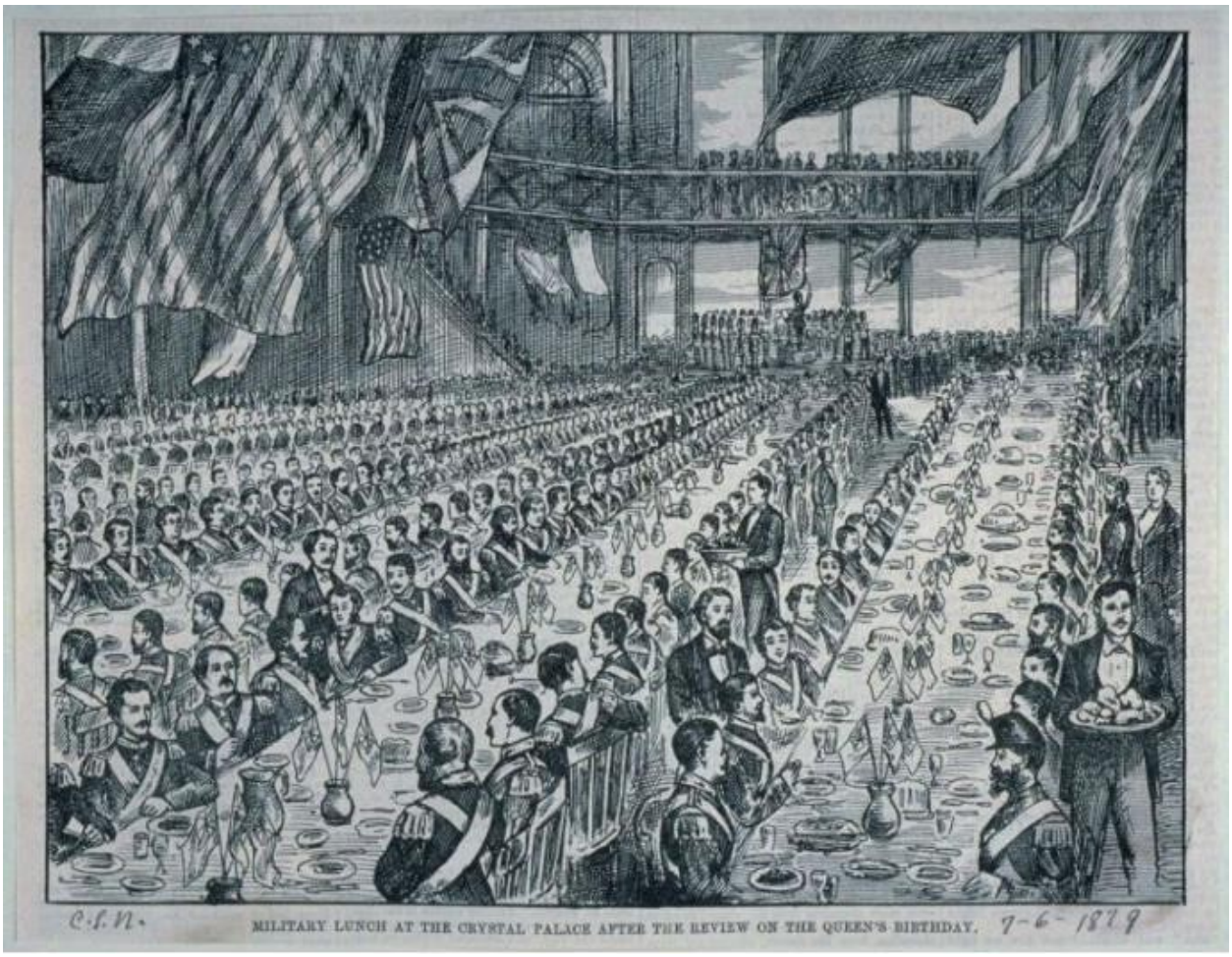


Figure 16
"Military Lunch at the Crystal Palace After the Review on the Queen's Birthday," June 7, 1879, BANQ, Patrimoine Quebecois, 0002733062.

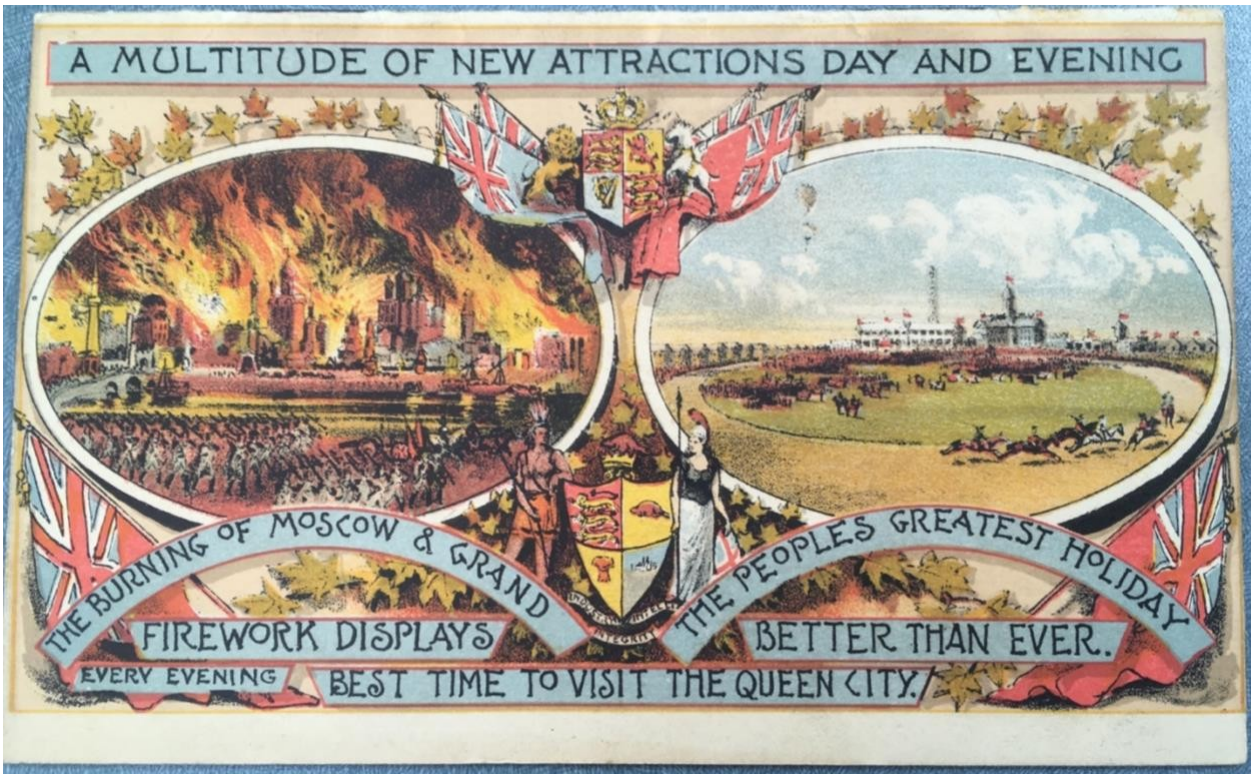


Figure 17
Back cover of the "Programme for Canada's Great Industrial Fair and Exposition, 1889, Septr 9th to 21st," Spadina Records Centre, City of Toronto Archives, Toronto, Ontario, Canada.

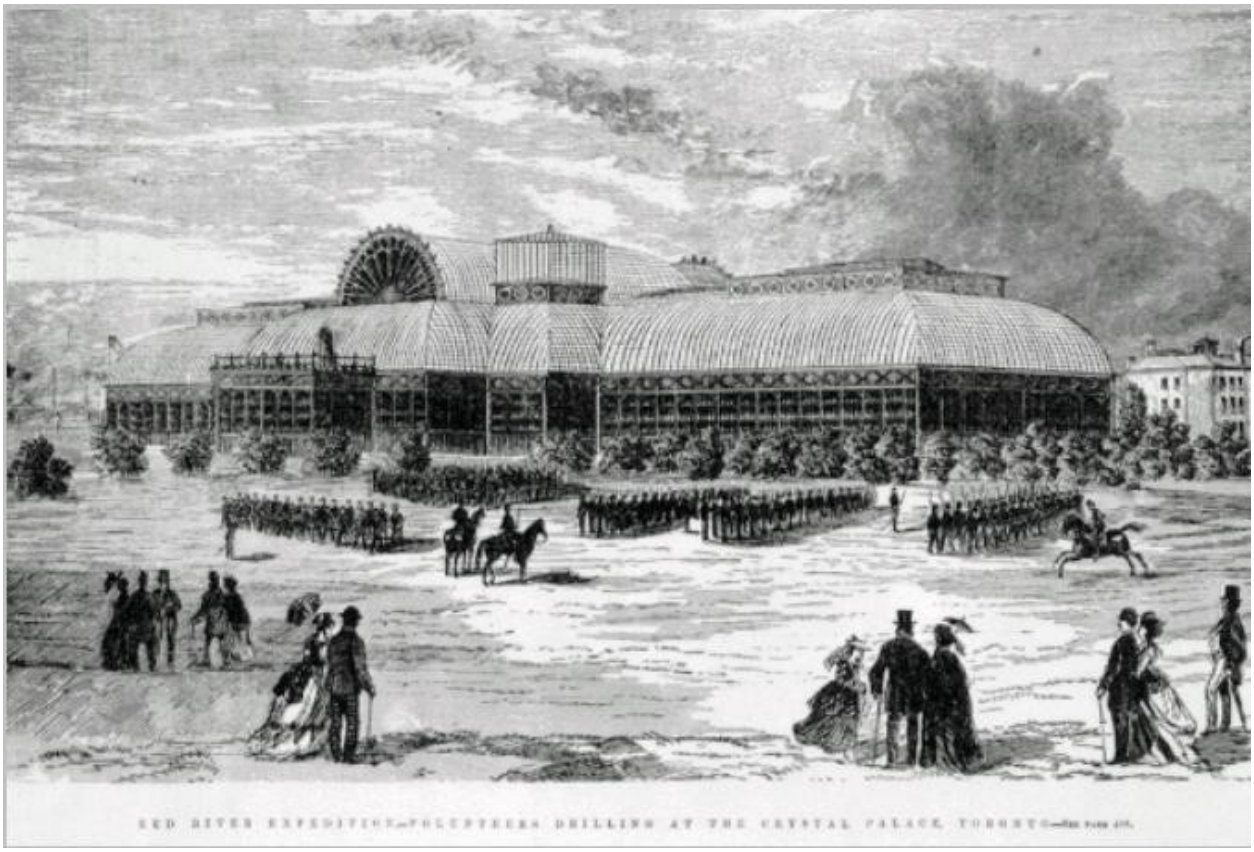


Figure 18
"Volunteers Drilling at the Crystal Palace, Toronto," *Canadian Illustrated News* 1, no. 32, June 11, 1870, 505. Library and Archives Canada.

Figure 19
"Exhibition Grounds, Toronto." n.d. Postcards. Toronto City Archives, Spadina Records Centre, Box 158722, Folder 37, Series 330, File 272, Sheet 1, Toronto, Ontario, Canada.

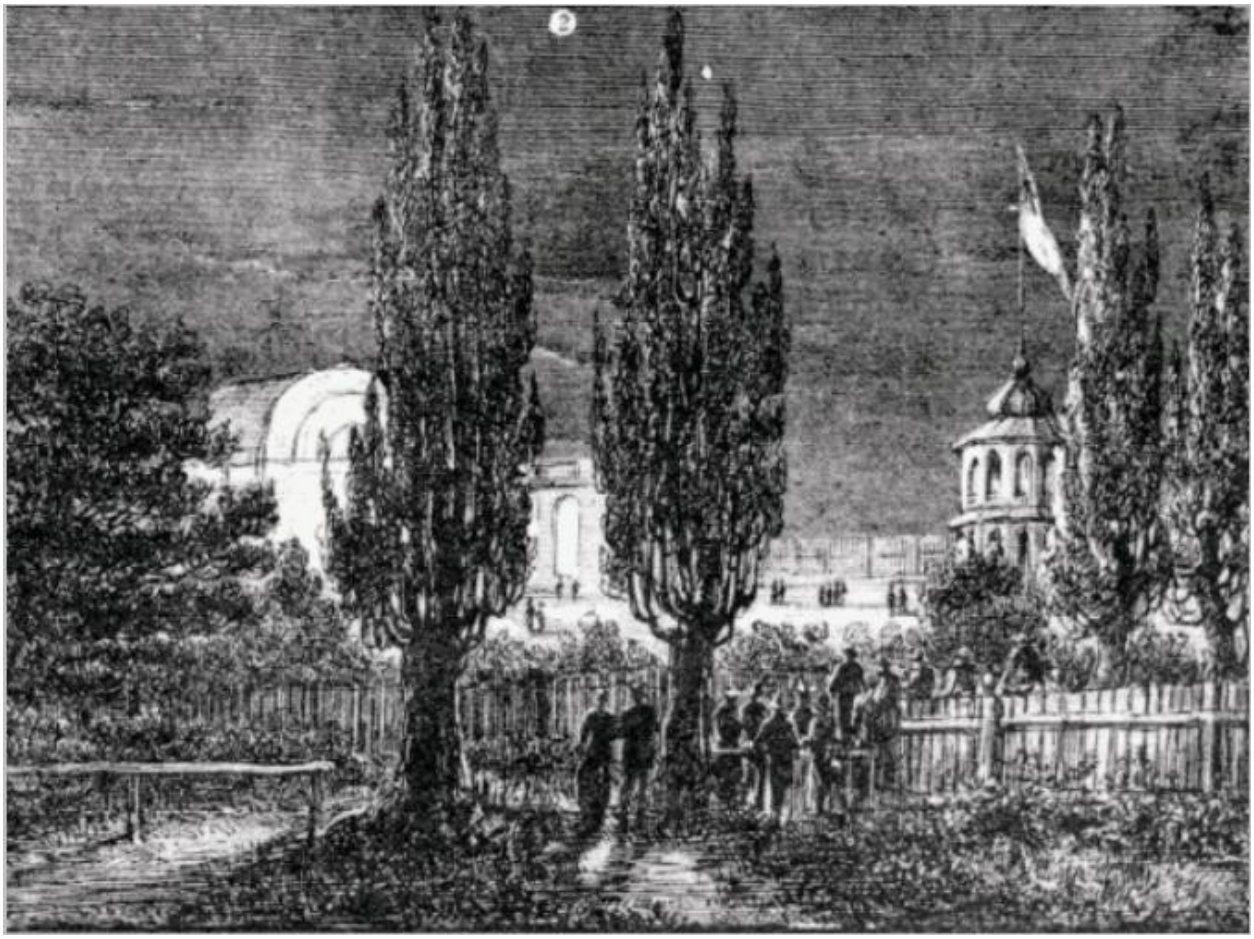


Figure 20
"Crystal Palace, Montreal, by Electric Light—Incidents of the week," *Canadian Illustrated News* XX, no. 3, July 19, 1879, 40. Library and Archives Canada.

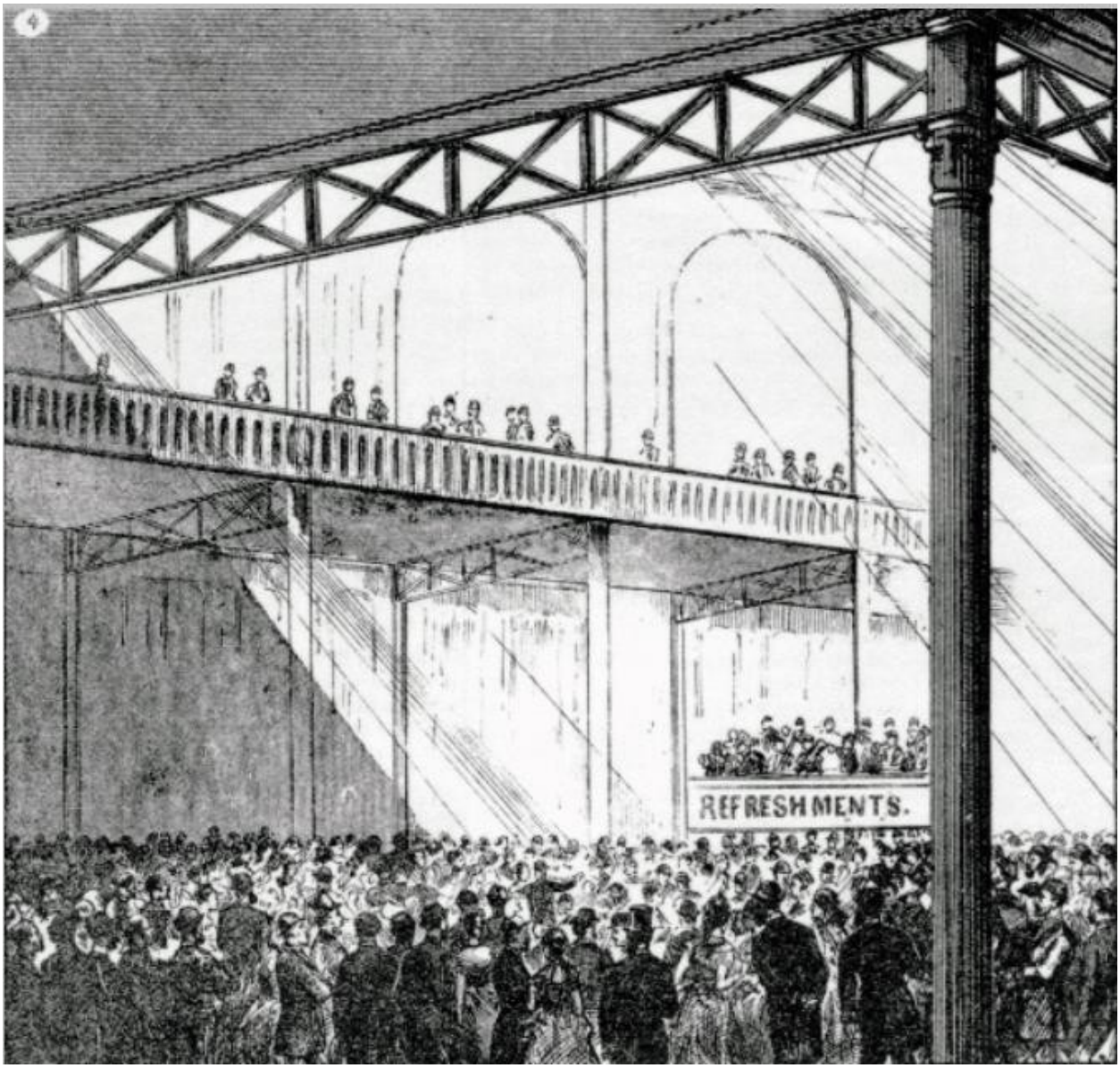


Figure 21
"Interior of the Crystal Palace, Montreal—Incidents of the Week," *Canadian Illustrated News* XX, no. 3, July 19, 1879, 40. Library and Archives Canada.

Figure 22
Batt, H.,"Interior of the Montreal Crystal Palace decorated for the St. Jean Baptiste Day, 1874," 1874, photograph. Library and Archives Canada, PA-028714, https://www.bac-lac.gc.ca/eng/collectionsearch/Pages/collectionsearch.aspx?q=jean%20baptiste%20montreal%20crystal%20palace&

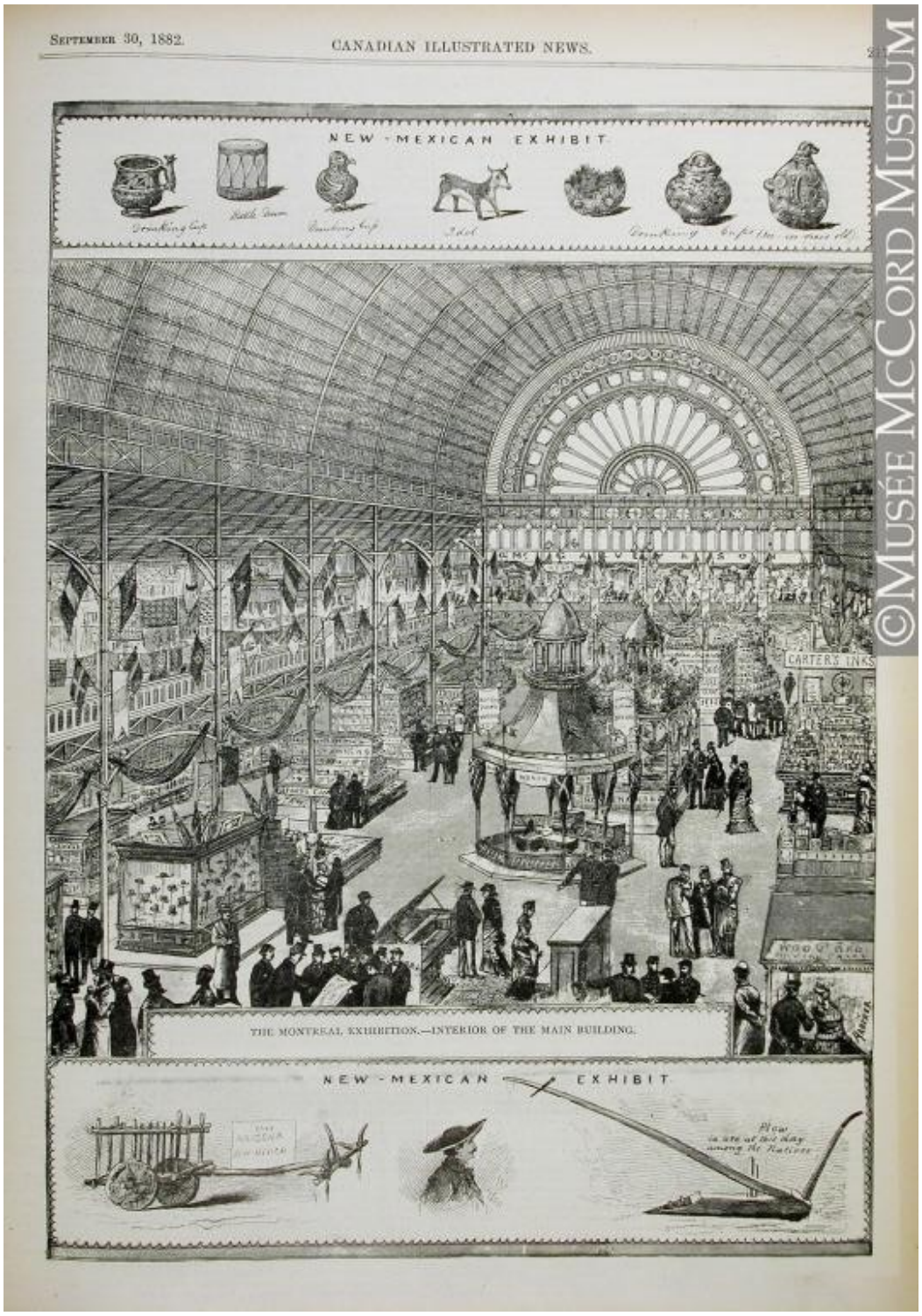


Figure 23
Haberer, Eugene, "The Montreal Exhibition—Interior of the Main Building," ink on paper—photolithography, *Canadian Illustrated News,* September 30, 1882. McCord Museum, M994.104.1.26.217. http://collections.musee-mccord.qc.ca/en/collection/artifacts/M994.104.1.26.217

Figure 24
The article accompanying this feature acknowledges the glass frontage of the headquarters for the Commercial Travellers' Association of Canada, noting that "light is one of the chief desideratums." "THE NEW HEADQUARTERS, No. 51 Yonge street," *The Canadian Dry Goods Review* 1, No. 1, January 1891 (Toronto: Co., 1891): 17.

.

Figure 25
Haberer, Eugene, "Montreal—J. G. Kennedy's Clothing Store, ST. LAWERENCE MAIN STREET," *Canadian Illustrated News* VII, no. 21, May 24, 1873, 325. Library and Archives Canada.

Figure 26
Unknown, "Jas. Goullden's Drug Store, St. Lawrence Main Street, Montreal," *Canadian Illustrated News* IV, no. 12, September 16, 1871, 192. Library and Archives Canada.

Figure 27
Haberer, Eugene, Act. "Messrs. Savage, Lyman & Co.'s New Store, St. James Street," *Canadian Illustrated News* VI, no. 22, November 30, 1872, 341. Library and Archives Canada.

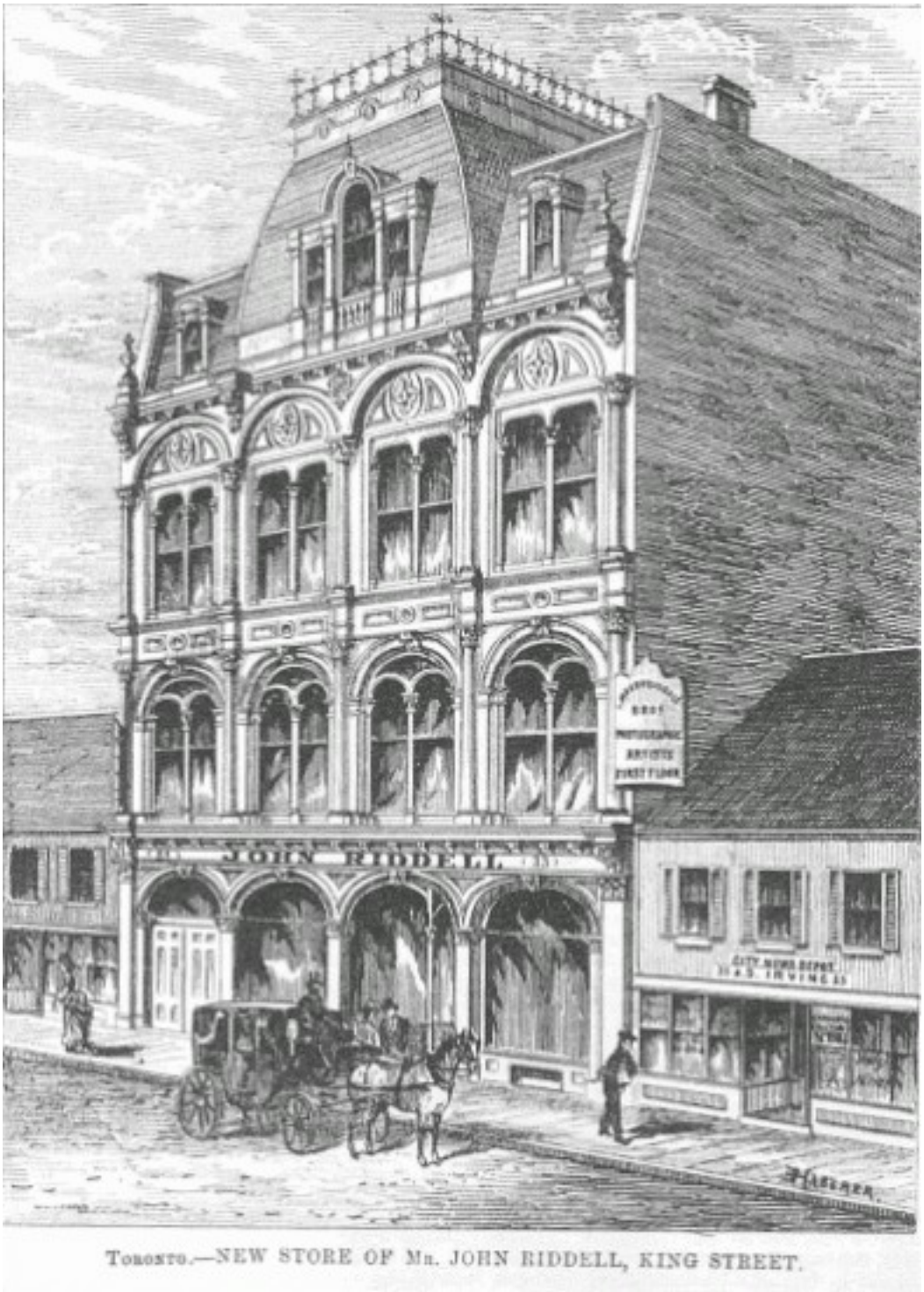


Figure 28
Haberer, Eugene, "New Store of Mr. John Riddell, King Street [Toronto]," *Canadian Illustrated News* VI, no. 20, November 16, 1872, 316. Library and Archives Canada.

A COLLAR AND CUFF CASE.

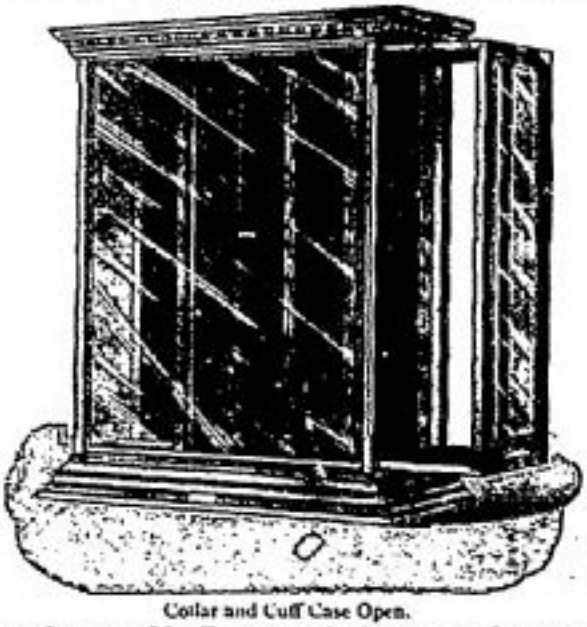
The problem of displaying collars so that many styles can be shown together, so securely encased as to be kept clean, has been solved by contriving a glass and metal case, into which dirt cannot enter. It can be set on a counter or hung on a wall. The advantages of such a means of showing these goods need not be dwelt upon, for everyone in the trade recognizes them. There are three sizes, No. 1 having capacity for 14 collars and 8 cuffs, and costing $10; No. 2 having capacity for 20 collars and 12 cuffs, and costing $13, and No. 3 costing $16, with room for 30 collars and 18 cuffs, and fitted with glass ends. The makers are A. N. Russell & Sons, Ilion, N.Y.

Collar and Cuff Case Closed.

Figure 29
"Collar and Cuff Case Closed," from "A Collar and Cuff Case" Advertisement, *Canadian Dry Goods Review* 8, no. 11 (November 1898): 42.

MR. DENTON'S APPOINTMENT.

W. A. Denton, well known to the men's furnishing trade, has been appointed head of this department in John Macdonald & Co's., the position made vacant by the death of Mr. Blackey. Than Mr. Denton no better choice could have been made, as he is popular with the trade and has had a long experience, and is a careful buyer. He has been 12 years with the firm, who have now wisely promoted him to the position of European buyer and chief of the department of which he has been assistant buyer for several years. Mr. Denton, who is a man of excellent judgment and thoroughly posted in men's furnishings, has the best wishes of THE REVIEW.



Collar and Cuff Case Open.

Figure 30
"Collar and Cuff Case Open," from "Mr. Denton's Appointment" Advertisement, *Canadian Dry Goods Review* 8, no. 11 (November 1898): 42.

Figure 31
Unknown, "Cohen & Lopez's Cigar Store, Place d'Armes, Montreal," *Canadian Illustrated News* III, no. 5, February 4, 1871, 80. Library and Archives Canada.

Figure 32
Haberer, Eugene, "Interior View of Lash & Co.'s Jewellery Store [Toronto]," *Canadian Illustrated News* V, no. 25, June 22, 1872, 396. Library and Archives Canada.

Figure 33
"Interior View of Savage, Lyman & Amp Co.'s New Jewellery Store, St. James Street, Montreal," "*Canadian Illustrated News* VI, no. 26, December 28, 1872, 424. Library and Archives Canada.

Figure 34
Unknown, “Interior View of E. G. Mellor’s Jewellery Store, No. 285, Notre Dame Street, Montreal,” *Canadian Illustrated News* IV, no. 25, December 16, 1871, 389. Library and Archives Canada.

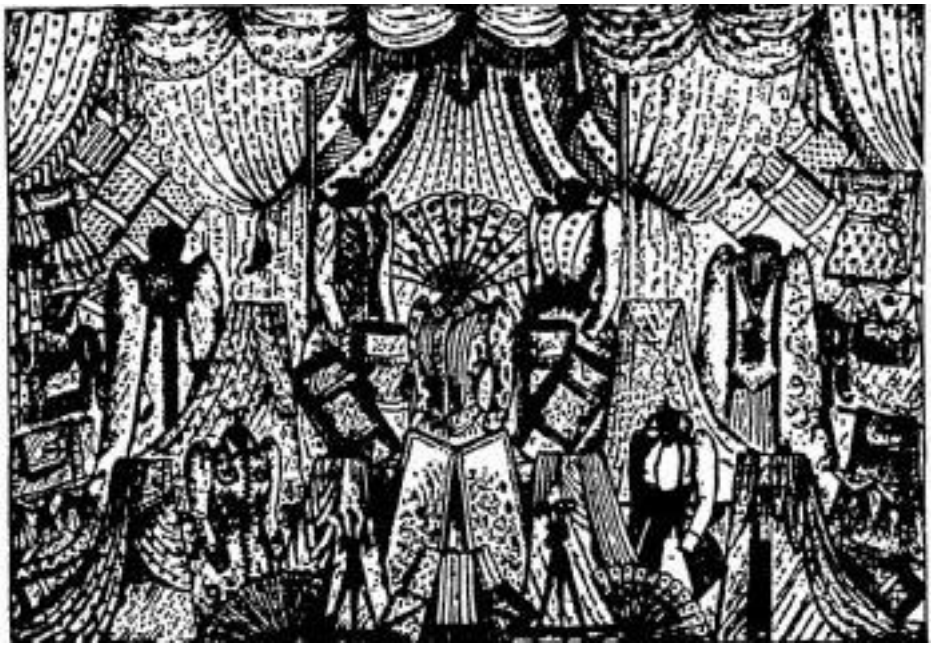


Figure 35
"Window Dressing," illustration, *The Canadian Dry Goods Review* 2, no. 6 (June 1892): 17.

Figure 36
Luxfer Prism Company, Limited, "Why Not Make Use of the Valuable Space in your Basement?" Advertisement. *The Canadian Dry Goods Review* 8, no. 12 (December 1898): 73.

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Canadian Centre for Architecture, 1920 rue Baile, Montreal
City of Toronto Archives, 255 Spadina Road, Toronto.
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Le Franco-Parleur.
Frank Leslie's Popular Monthly.
La Gazette de Sorel.
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Grip.
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Manitoba Free Press.
The Montreal Gazette.
Moose Jaw Herald Times.
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