The nineteenth century experienced a revolution in visual communication which affected every aspect of Victorian life. This paper discusses the origins and course of this revolution by focusing upon three major aspects of its development. The first, and most important one, encompasses the technological developments which eased the means by which visual images were created and distributed. The second deals with the development of a popular market for visual imagery; the paper concludes with the reaction to these developments by organizations which sought to sharpen Canadian aesthetic sensibilities in an effort to strengthen the cultural and moral foundations of nationhood.

Archivists who grapple with “total archives” sometimes wonder why their institutions collect not only many useful, beautiful, and well-documented paintings, drawings, and prints, but also illustrated journals, postcards, trade-cards, scrapbooks, letterheads, old bills, advertisements, posters, photoprints, cartoons, and all the other kinds of visual ephemera. Since visual images are commonplace today, we tend to forget the tremendous advances made in the nineteenth century in their production and diffusion. Consider for a moment people born in 1820; by their adolescence, they would have only been dimly aware of the world five miles beyond their doorstep. If they were poor, exposure to imagery of any sort would probably have been confined to religious pictures in churches and illustrated bibles, or prints hanging in the village inn. For the more affluent and the urban dweller in Europe and North America, there was slightly greater access to prints, illustrated books, and even the occasional painting — although public museums as such did not yet exist. Photography had not yet been invented. Only the very rich were aware of visual documents in everyday life, and even they were only familiar with the narrow range of visual material they, or their friends, actually owned. Few Canadians in 1830 would have been able to describe the appearance of the Duke of Wellington, or even the monarch; fewer still had any visual impressions of distant centres like New York, London, or Paris. The primary reason for this is that, until the end of the eighteenth century, an image could only be reproduced about four or five hundred times.

* An earlier version of this paper was presented at the Annual Meeting of the Association of Canadian Archivists in Toronto, 22 May 1984.

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Figure 1: *The intaglio printer. Wood-engraving by C. Laplante after A. Bosse, ca. 1861.* This illustration shows the interior of a small eighteenth-century printing shop where intaglio prints were produced by hand. Courtesy: National Library of Canada, L-11074.

Virtually all prints before 1800 were produced by the intaglio or engraved copper-plate process. Soft metal plates were either incised (hence intaglio) with metal burins by skilled craftsmen, using lines, dots, and cross-hatching or etched, using resin-coatings, needles, rollers, and acid baths to produce an image of incised lines and tones. When the resultant image was inked and put through a printing-press, an engraving or etching was produced, with an image formed by raised lines on the paper surface. This delicate process could only produce a limited number of prints because the pressure exerted by the printing-press would rapidly flatten the incised lines. (Figure 1) Editions were limited, costs were high, and diffusion could not be extensive.

The problem of reproducing printed images inexpensively in large numbers was solved at the end of the eighteenth century by two remarkable processes.

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1 A recent article by my colleague, Auguste Vachon, explains in some detail the methods and means by which various intaglio processes and prints can be distinguished. The article is designed, in his words, to "assist archivists and librarians who gradually build up print collections over the years, but who in some cases are unable to recognize the printing techniques and consequently are unable to catalogue such collections adequately." This article should be consulted by any interested reader. See "The Intaglio Process," *The Archivist*, 10 (May-June 1983), pp. 1-5.
The first, wood-engraving, revived an older technique; the second, lithography, was a new invention. The many complex manifestations of the two processes can be summarized as follows. Wood-engraving, or woodblock printing, had been used as early as the fifteenth century as a method of artistic reproduction. Most pre-eighteenth-century techniques involved cutting the images in relief along the grain of the wood. These prints were crude and, due to the rapid wearing of the wood, limited in number. In 1798, Thomas Bewick, an English printer, turned the woodblocks on end to engrave the images against the grain. Utilizing an especially hard wood known as boxwood, Bewick was able to perfect this remarkable technical discovery over the next twenty years; presses and inks were soon adapted to print wood-engravings in relief as opposed to intaglio. Wood-engravings became an important means of visual reproduction because of the amount of detail which they could show and because, unlike copper-plate engravings, they could be reused to make thousands of copies without wearing out. This greatly reduced the cost of making individual copies. By 1832, wood-engraving was being used for the production of *The Penny Magazine*, the weekly illustrated paper of the Society for the Diffusion of Useful Knowledge. (Figure 2) *The Penny Magazine*’s steam-powered cylinder press helped boost circulation to 200,000 by 1833. All the major illustrated papers in Britain and North America, including the famous *Illustrated London News*, founded in 1842, employed wood-engraving techniques as well. As a result, circulation of these magazines occasionally reached 1,000,000. The wood-engraving process continued until the end of the nineteenth century to be a primary means of reproducing images in large numbers.

The second major innovation in printmaking, lithography, was invented in 1797 by Bavarian musician and experimenter Alois Senefelder. Lithographs were made by a remarkably simple process; the image was drawn with crayon, or some other water-repellent substance, directly onto limestone. After treatment and inking, it could be printed in relief without using the immense pressure needed by an intaglio press. The image did not have to be recopied by an engraver, it could be drawn directly on the stone by the artist. Lithography was simple and inexpensive to print. It spread quickly in the English-speaking world after the British government purchased the rights to use it in 1807 in imperial printing establishments. By the 1820s, lithography was also common in Europe, and by 1831 it was in commercial use in Canada. By the 1850s, it had

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virtually replaced intaglio engraving for all forms of fine art reproduction. The sophisticated forms of lithography — tusche, tint-stone, colour, and chromolithography, were all developed by the 1860s. Mass production of lithographs was made possible by steam-powered presses. In the last half of the nineteenth century, lithography became known as "the democratic art." It was supposed to foster popular taste for fine art because a lithograph faithfully reproduced the colours of any type of painting or other image. The itinerant chromo-dealer
was a common figure in late-nineteenth-century rural life. By 1893, a spokesman for the National Association of Lithographers in the United States was tempted to wax lyrical on the refining influence of lithography:

Within a few decades, public taste has been lifted out of the sluggish disregard for the beautiful... and now seeks to adopt the decorative accessories, which beneficent enterprise has so cheapened as to place them within the reach of all to the ornamentation of its homes... The depressing monotony of plain walls are now relieved by bright touches of colour... awakening in some degree, however faint, the innate love of beauty which marks the scale of aspiration in the human soul. There is no place, high or low, where pictures are not seen, for the campaign of popular education in art has been carried to the very utmost boundaries of ignorance, and the cost of reaping its advantages is next to nothing.7

The figures for lithographic production in the nineteenth century are astounding. Although little research has been done on post-1850 Canadian lithography, the amazing growth of the business can be seen in a brief examination of developments in Toronto, the centre of Canadian printmaking. In 1846, there was only one lithographer in Toronto; by 1860, there were four; by 1875, seven; by 1890, ten; and by 1899, there were sixteen lithographic companies.8 A study of lithographic firms in Philadelphia noted that during the 1880s one firm alone, and not a large one at that, Joseph Hoover & Co., produced between 600,000 and 700,000 pieces of lithographic work in a single year.9 An interior view of the Toronto Lithographic Company’s establishment in the 1890s reveals masses of posters awaiting distribution. (Figure 3) Few examples of the posters, as with much which was produced at this time, have survived.

The most potent of all the nineteenth-century developments in visual communications was photography. Introduced in 1839 in two formats, the daguerreotype and talbotype, photography rapidly evolved in various forms. It spread quickly in Canada after its introduction in 1840, and by the time the first Kodak box camera (which made photography a popular pastime) appeared in 1888, few North Americans had been unaffected by it.10 Photography was easily adapted as a printmaking tool. By 1860, wood-engraving blocks were being photo-sensitized to receive images for copying and printing;11 the following decades saw many further innovations in photo-engraving and photo-lithography including the development in Canada of the leggotype, a half-tone cross-lined screen photo-lithographic process.12 (Figure 4) This process was used to print

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8 Figures cited were compiled from Toronto City Directories, 1845-1900.
11 Ivins, Prints and Visual Communications, pp. 107-8.
The Canadian Illustrated News and its sister publication L'Opinion Publique in 1869 and 1870. By the 1890s, most of the photo-derived printing techniques had been developed, and they have continued to be the dominant processes in commercial printing.

The most valuable asset of photographic printing processes was their ability to reflect reality. An eighteenth-century engraving represented not just an image as seen in nature, but also as it was interpreted by an artist, engraved (and often changed for aesthetic reasons) by an engraver, and printed (with interpretive titles) by a publisher. Wood-engravings and lithographs also demanded second- and third-hand interpretations. The biggest printing firms in the nineteenth century often had staff specialists who engraved in wood or lithographed on stone human figures, buildings, or landscapes as their speciality demanded. Developments in photo-engraving and photo-lithography largely eliminated distortions of the image even while offering new aesthetic challenges to the artist and designer. Photography's fidelity as a mirror of reality has changed the way the world has been perceived. The great American curator, Williams Ivins Jr., summarized its impact as follows:

As people became habituated to absorbing their visual information from photographic pictures... it was not long before this kind of impersonal visual record had a most marked effect on what the community thought it saw with its own eyes. It began to see
Figure 4: Cover of the first issue of The Canadian Illustrated News, 30 October 1869. A leggotype of H. R. H. Prince Arthur from a photograph by Notman. Courtesy: Picture Division, Public Archives of Canada, C-48503.
photographically, it stopped talking about photographic distortion, and finally it adopted the photographic image as the norm of truthfulness in representation. A faith was put in the photograph that had never been and could not be put in the older hand-made pictures. There have been many revolutions in thought and philosophy, in science and religion, but I believe that never in the history of men has there been a more complete revolution than that which has taken place since the middle of the nineteenth century in seeing and visual recording. Photographs give us visual evidence about things that no man has ever seen or ever will see directly. A photograph is today accepted as proof of the existence of things and shapes that never would have been believed on the evidence of a hand-made picture. The nineteenth century began by believing that what was reasonable was true and it wound up by believing that what it saw a photograph of was true — from the finish of a horse race to the nebulae in the sky. The photograph has been accepted as showing that impossible desideratum of the historian — wie es eigentlich gewesen — how it actually was.13

These changes in visual communication were invented to fill a need. Simply stated, the Industrial Revolution after the 1750s had two effects: it created a need for a better-educated worker and radically transformed demographic and class patterns. The post-Napoleonic world saw manifold developments in the area of education and attempts to improve general knowledge. The Mechanics Institutes' movement, for example, used lectures, exhibitions, and libraries to diffuse new ideas throughout the British Empire. By the 1860s, virtually every Canadian community had an Institute. The Society for the Diffusion of Useful Knowledge used the cheap, easily readable, and well-illustrated Penny Magazine to reach the masses. These initiatives, combined with educational reforms implemented across the nineteenth century, increased literacy. Thirst for more knowledge among the less literate resulted in more texts with greater numbers of illustrations. Expanding cities with more affluent inhabitants also presented a market for new forms of public and private recreation and diversion.14 The new means of visual communication helped provide them. Victorians were entertained and informed by magic lantern shows and the illustrated journals founded in the 1840s and 1850s (including the Illustrated London News, Illustrated Times, Graphic, and Frank Leslie's Illustrated) which reported far-flung events such as the laying of the Newfoundland telegraphic cable, fires and other disasters, and even Canadian railway sod-turning ceremonies.15 Public entertainments included the growth of the theatre, travelling music shows and circuses, and

13 Ivins, Prints and Visual Communications, p. 94.
14 Gretton, Murders and Moralties, pp. 9-10.
various forms of large-scale panoramas and tableaux vivants. (Figure 5) As film making developed in the 1890s, cinema too was soon on its way to becoming an important cultural activity.16

Transportation improvements served the visual communication revolution by making visual imagery more rapidly available. Author Geoffrey Wakeman noted that in England improved rail transportation had a direct impact on the expansion of the book trade by generating demand at station bookstalls and providing the rapid communication between provincial centres and the metropolis which allowed provincial printers, with lower overhead, to compete with metropolitan printers.17 Elizabeth Hulse noted a similar effect in her valuable study of nineteenth-century printing and publishing in Toronto: "The railways provided both efficient transportation and a ready market for cheap reading materials... [One] sizeable distributor, the Canadian Railway News Company, founded in 1883 and still active as Cara Operations, ran bookstalls and sold newspapers on the Grand Trunk and Intercolonial railways."18 Publishing companies also benefited from improved transportation. To quote Hulse again:

S. Frank Wilson, who moved his Auxiliary Publishing Company from Hamilton to Toronto in 1876 because of better rail connections, printed the 'insides' of a large number of country newspapers, leaving the outer pages for the proprietor to fill with local news. Much of the success of this business derived from the advertising, for which Wilson could guarantee a total circulation of over 120,000 a week in the 1880s.

The Central Press Agency, incorporated in 1886, also acted as an auxiliary publisher by supplying printed material to country papers in the form of stereoplats.19

Auxiliary publishing extended to illustrated county atlases and lithographed advertisements in which spaces left blank at the bottom of the advertisements could be filled with the name of the local dealer or agent.20

The two great revolutions in transportation and communication became intimately linked in the latter half of the nineteenth century in illustrated periodicals. In Canada, the greatest manifestations of nineteenth-century fascination with visual imagery were The Canadian Illustrated News and

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19 Ibid., p. xiv.
20 An excellent example of this type of advertisement was recently exhibited at the Public Archives of Canada as part of the exhibition In The Best Style of The Art: Commercial and Fine Art Printing in Canada 1850-1950. The exhibition catalogue, written by Lydia N. Foy, bearing the same title and published by the Public Archives, describes developments in commercial printing, and includes several such items, particularly catalogue item No. 33, an advertisement for Speight Farm and Freight Wagons of Markham, Ontario.
L'Opinion Publique, sister publications begun in 1869-70 by George E. Desbarats, a Montreal printer and publisher. In his prospectus, Desbarats stated:

A Canadian illustrated newspaper would be as it were a mirror that would reflect Canadian nature, enterprise, and art throughout the world. . .

By picturing to our own people the broad dominion they possess, its resources and progress, its monuments and industry, its great men and great events, such a paper would teach them to know and love it better, and by it they would learn to feel still prouder of the proud Canadian name.21

Over their fourteen-year lifespans, these two illustrated publications carried more than 15,000 images of places, people, and events of contemporary interest in Canada and around the world. Evidence of national growth was covered thoroughly with railways receiving a great deal of attention. Railway openings and disasters were duly reported because the fortunes of railways were a measure

of material growth and progress. By concentrating their coverage on such symbols of national growth and prosperity, The Canadian Illustrated News and L'Opinion Publique tried to fulfil Desbarats' promise to portray Canada as one of the "foremost nations of the earth" while at the same time "refining taste and popularising art." Victorians believed they had to understand the various social and cultural uses and merits of visual documents. There was spectacular growth during the nineteenth century in the number of societies, organizations, and institutions which attempted to define good taste and aesthetic values in the visual arts. The first public art exhibition in British North America was in Halifax in 1830. It was followed by other exhibitions in Toronto in 1834 and Quebec in 1840. By mid-century, exhibitions of fine art were common. They were often incorporated into provincial exhibitions, agricultural fairs, and international expositions in attempts to refine popular tastes by presentation of models upon which aesthetic sensibilities could be based. The Art Association of Montreal (founded in 1860) was the first organization in Canada to attempt to refine popular taste in a deliberate fashion. It had the following aims:

1st. The establishment of an Annual exhibition of Works of Art.
2nd. The promotion of sound judgement in Art, by means of lectures, conversazioni etc.
3rd. The establishment of a Library and Reading-Room, devoted to publications on the subject of Art.
4th. The establishment of a Gallery of Sculpture, including casts etc.
5th. The formation of a permanent Gallery of Paintings.
6th. The foundation of a School of Art and Design.

In 1872, the Ontario Society of Artists was founded upon much the same lines in Toronto; the Royal Canadian Academy (RCA), under the patronage of the Governor-General, the Marquis of Lorne, was founded in 1880. The Academy, whose collection of diploma paintings became in the same year the basis for the National Gallery of Canada, was the arbiter of late-nineteenth-century taste in the fine arts. Even here, the revolutions in visual and transport communications converged: the completion of the CPR, and the subsequent donation by the company of free passes to members of the Academy, allowed artists to criss-cross the vast Dominion to paint, publicize, and glorify what they called "our own country Canada." By the 1890s, artistic schools, galleries, artists' organizations, and camera clubs were found in every major Canadian city. Visual images were created, studied, and utilized by people from all walks of life for every purpose. An anonymous writer in The Week magazine of Montreal of 8 March 1888 summarized to a certain extent a sense of what

22 Ibid., p. 6.
23 The Canadian Illustrated News, 30 October, 1869, p. 7.
25 Dennis Reid, Our Own Country Canada (Ottawa, 1979), pp. 16-17.
26 Ibid., pp. 199-202, 281-90.
27 Ibid., pp. 388-426.
contemporaries thought visual imagery could do for Canada. Reviewing an
exhibition of paintings at the Art Association of Montreal by Lucius O’Brien,
the president of the RCA, the writer stated:

If literature and politics have so far failed to awaken in Canadians
any lively national spirit, surely the pictures of all that glorious land,
a veritable promised land, that is ours, must send the blood tingling
through our veins with wild enthusiasm and wilder hopes. Patriotism
in all its depth and beauty and passion, Canadians may not feel,
alas! but gazing on these ‘everlasting hills’, a sentiment closely akin
to it must thrill even the coldest of us.28

In July 1888, George Desbarats began publishing The Dominion Illustrated in
“hearty and active cooperation” with the RCA in order to “illustrate the
Dominion of Canada, its scenery, its industries, its cities, its attractions and
resources, its great public works. . . we are for building up a homogenous,
united, patriotic nation, and for ignoring all prejudices of race and sex; marching
onward, shoulder to shoulder to the goal of prosperity that looms
ahead.”29

Canadians in the nineteenth century learned to communicate through pictures
of every kind. They emerged from a world which had very few accurate visual
self-images and entered one in which for the first time most people, at little
or no cost, could see life illustrated in books, newspapers, magazines, photo-
graphs, and films. Above all, Canadian cultural nationalists such as George
Desbarats and the members of the Royal Canadian Academy believed that visual
imagery had a unique ability to reach and influence everyone, regardless of
social, cultural, or linguistic differences, for the good of the nation and the
quality of social and moral life. Their beliefs simply echoed the sensibilities of
fellow Victorians everywhere in Western society. The revolution in visual
communication marked, for them, the beginning of a new and promising stage
in the development of intellectual and social life.

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28 Ibid., pp. 418-19.
29 The Dominion Illustrated, 7 July 1888, p. 2.