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“An Engineering Entrepreneur in Early Canada: John Gartshore in the 1800s”

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Abstract

John Gartshore was one of Canada's original Scottish-born immigrant mechanical engineers. He is perhaps best known for the steam-driven, beam pumping engines his company supplied to the Old Hamilton Waterworks in the late 1850s. In this paper, aspects of his career have been pieced together from a variety of sources. Gartshore was a good entrepreneur, engineer and manager, and all but a few years of his career were commercially successful. His influence reached well beyond his own shops. His three sons and many of his employees went on to successful careers in engineering. He died at the early age of 63.

This paper has three appendices. The first includes brief biographies of John Gartshore's children and a Gartshore family tree, showing some of John's ancestors and descendants, among whom are the two authors of this paper. The second gives a brief history of an 'in-law' family, the Lesslies of Toronto, who have historical connections with some prominent Canadian historical events and persons. The third is a partial list of the careers of some of Gartshore's employees and apprentices. The paper concludes with a list of the references used in the text.

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The editors of this present Working Paper were Peter R. Hart and Andrew H. Wilson

Readers should note that references have been cited numerically *in italics* throughout the text, along with page numbers when appropriate.

A photograph of John Gartshore appears on page 2.

About the Authors

Ian Gartshore was born and raised in Calgary, Alberta. After completing high school there, he attended Olds School of Agriculture, north of Calgary, finishing a one-year diploma in practical agriculture. He became a hired hand on farms in Alberta for most of one year. It was while assisting in the survey of irrigation ditches that Ian was introduced to engineering. He went to the University of British Columbia, graduating in mechanical engineering in 1957. After graduate work in aeronautical engineering at Imperial College, University of London, he traveled for a year with an Imperial College Expedition, then returned to Canada to work in the National Aeronautical



Establishment at the National Research Council in Ottawa. After two years at NRC, Ian went to McGill University, completing a PhD and post-doctoral studies in mechanical engineering. He joined the faculty at the University of British Columbia in 1967, remaining there until his formal retirement in the year 2000. Ian continues to do research at UBC and is a principal in a small hi-tech engineering company working out of Vancouver. Ian and his wife Anne live in Vancouver and have two children.

(iii)

Sondra (Gartshore) Jernigan was born and raised in Toronto, Ontario. She received her BA degree from York University in Toronto and her PhD in psychology from Reading University in England. She has worked in university and clinical settings in the field of psychophysiological research and clinical applications for over 30 years, including biofeedback, stress assessment and computerized analysis of brain activity. While living in England doing post-graduate work, she read about an estate called Gartshore in Scotland, and that event began an interest in genealogical research that has lasted 30 years. She has traced Gartshore ancestors back to Scotland in the 1600s and has found documents from that period describing transactions between John Gartshore's ancestors and the Gartshores of



Gartshore, the estate she first read about. The family dates back to the 12th century, and while she has not found documented proof of kinship between John Gartshore and that family, the evidence suggests such kinship is highly likely. One of the interesting facts to emerge from the Gartshore database she has developed is that there have been, and are, many engineers in the various branches of the Gartshore family. She lives with her husband, Doug, in Topeka, Kansas, USA.

Preface

John Gartshore came to Canada from Maryburgh - an estate some eight miles from Glasgow, Scotland - in the first part of the nineteenth century. His experience as a new immigrant to this country is of particular interest to the present authors because of their direct family connections to him and his entrepreneurial activities. Ian Gartshore is John's great-grandson, a mechanical engineer now retired after 33 years of teaching and practice and currently involved in a small company in Vancouver. Sondra (Gartshore) Jernigan is John's great-great-granddaughter, a PhD in psychology and an amateur genealogist. A partial list of the ancestors and descendants of John Gartshore, including links to the present authors, is shown in **Appendix 1** of this paper. Since there are no surviving records of John Gartshore's business or personal life, other than a family Bible, this paper is based on a wide variety of sources, many of which are listed in the **References**.

Introduction

The early days of business in Canada were filled with small entrepreneurial companies. In the early 19th century, manufactured goods were desperately needed and local competition was often sparse, offering attractive markets. On the other hand, production was difficult: tools, raw materials and trained people were hard to acquire and moved slowly from place to place. Government services such as roads, pure water, sewers, hospitals, fire and police protection were often minimal; dependable financial institutions and currency were just becoming established. There were far fewer government regulations and restrictions than there are today, but local governments were not wholly dependable, either as regulators or as clients. Rapid changes were occurring technologically and socially as the industrial revolution spread and as inter-connected social and financial groups prospered and vanished. A few small companies - McClary stoves or Eaton's stores, for example - flourished and became household names. The story of John Gartshore and his family is an example of engineering business success and failure in the early days of Upper Canada (1791-1841) and Canada West, as the region was called in the years from 1841 to 1867.

In the Beginning...

John Gartshore was born in 1810 in Scotland and apprenticed there as a millwright. This predecessor of today's mechanical engineer specialized in the design and building of mills and mill machinery. A 'wright' is a Scots word for 'maker,' and the word 'millwright' therefore described a 'maker of mills' - just as wheelwright, shipwright and playwright are used in other contexts. Although John's specialty would likely have been to design, set up and equip mills that sawed wood or ground grain into oatmeal or flour, he would have known about fabrication practice in general, including forging, shaping and turning.

John Gartshore, millwright, emigrated from Scotland in his early twenties, probably in the year 1833 (1). An epidemic of Asiatic cholera had reached Britain in February 1832 and had spread to British North America by the middle of the same year. The disease raced across the country in a succession of waves, reaching epidemic proportions in the years 1832, 1834 and 1849 (2). At that time, the



John Gartshore (1810-1873)

voyage from Scotland took between one and three months and passengers often died from highly contagious diseases such as cholera, smallpox, typhus and scarlet fever. John started out with his sister and her husband. His sister died within sight of Newfoundland and was buried there. Her husband stayed in Newfoundland and John continued west to Upper Canada.

John settled briefly in York and in Niagara-on-the-Lake. Presumably, he had little difficulty in finding work: those skilled in mill design and construction must have been key people in the frontier areas of Upper Canada. In 1834, York became incorporated as the city of Toronto and, in March of that year - in Toronto - John married Mary Mitchell, who died the following year, probably of cholera.

John moved to Fergus, in Upper Canada. He had a house and a flour-mill there as early as August 1835 (*1, pp 45-52*). His mill was the first on the Grand River, which flows through Fergus. Today, there is a Gartshore Street in Fergus, which runs close to his mill site, marking John's presence in the early days of the town. The Gartshore mill was driven by a water wheel and both the mill and the associated dam were built entirely of wood (*1*). On August 9, 1836, John married Margaret Moir. John and Margaret's first child, Jacqueline, was born in Fergus in 1837. Two years after his arrival in Fergus, the mill was completely destroyed by fire.

New Business Enterprises: The Move to Dundas

In the year 1837, there was an armed rebellion against the ruling Family Compact of Upper Canada. Its leader was William Lyon Mackenzie who, three years earlier, had been elected the first mayor of Toronto. John Gartshore's wife was related by marriage to James Lesslie, a business associate of Mackenzie, so that John was connected indirectly with the fiery politician. Some of Lesslie's diaries have been kept and give a close subjective view of the times. Based on these diaries and other sources, **Appendix II** of this paper gives a brief history of the Lesslie family.

John Gartshore was a part of the Volunteer Rifle Company of Fergus, which had been formed as early as June 4, 1836 (*3, p 82*). Seventeen members of this company, including John, traveled from Dundas to Guelph, starting on December 10, 1837. The Company stayed a short time in Guelph, were ordered to Galt where they kept guard for three weeks, and then went on to Drummondville (an earlier name for Niagara Falls) about Christmastime (*4*). John left the Company at Guelph; he was paid three shillings and sixpence for serving the three days from December 9 to 11 (*32*). After leaving the Volunteer Rifle Company, John traveled to Dundas, perhaps planning to build or run a mill there, and quickly became involved in business.

Dundas, now a suburb of Hamilton, was at the time one of the most promising industrial centres in Upper Canada. The Desjardins Canal, which opened in August 1837, allowed supplies and products to move easily through Dundas, and the creeks and rivers that flowed through the area provided a ready source of power.

In 1838, Gartshore apparently built or ran a grist mill in Dundas for a prominent man by the name of James Bell Ewart (1801-1853) (5). In that same year, in partnership with Ewart, he built a foundry in Dundas. This foundry became one of the most prominent businesses in the town and (after 1841) one of Canada West's leading institutions for the manufacture of iron and brass articles.

In building the foundry, Gartshore obtained financial support through his partner James Ewart, who has been described as a "merchant, banker and landowner who owned the water power privileges on the lower Spencer Creek." (2, p 98). Ewart had moved to Dundas in 1825, although he had opened and owned a store in "Coote's Paradise" (Dundas) as early as 1820 (5). His principal business activities were in banking, grain trading and the management of grist mills around Upper Canada in places such as Waterloo Township, Galt and Dawn Mills. He was also a major landowner and developer throughout the region, his last and most ambitious development being on the shores of Lake Simcoe, marked by the present village of Bell Ewart, named after him. Ewart was, at various times, a justice of the peace, postmaster and president (mayor) of the Town Council of Dundas. He proved to be an invaluable financial colleague for Gartshore, but he was the one who played a role in John's business failure some years later.

The foundry, on Hatt Street in Dundas, was first called John Gartshore & Company and later The Dundas Iron Foundry and Machine Shop (9, pp 37-39). It was the second or third major enterprise undertaken by Gartshore in the five event-filled years since his arrival in Canada, during a cholera epidemic.

Although there is no detailed record of the start of the Gartshore foundry, there exists an interesting account of the building of a foundry in London (Upper Canada) by Elijah Leonard (6)(7). Leonard came from a family with a long history of iron working. He planned and built his foundry and machine shop, beginning in 1838, the same year that Gartshore was building his in Dundas. In a memoir (7), there is a description of Leonard's cupola - the large pot in which pig iron or scrap metal was melted - and other equipment, including a large, noisy fan used to drive air into the melt in the hot cupola. Leonard built some of his early machine tools, such as the drill-press, and bought or re-built others, such as the turning lathe and planing machine. His first steam engine was purchased, only partly finished, from the Cuyahoga Works in Cleveland, Ohio, around 1843. When it was commissioned in London - with much local interest since he claimed it was the first such engine to be started in "Western Canada" - it replaced the two horses Leonard had harnessed to his "horsepower wheel" in the cellar of his shop and which had been the sole source of power for his machines. Anthracite was purchased from Buffalo and pig iron from Montréal: both were shipped to Port Stanley and then carried in carts drawn by teams of horses over 27 miles of dirt road to London. Leonard's first completely homemade steam engine - a copy of the engine he had purchased earlier - was built in 1845 and was sold to a mill near St. Thomas. Leonard recalls the difficulties he had with his "human resources": housing and controlling the employees hired to work in his shop and foundry. He describes them ruefully in these words, "These men and boys were a wild lot, and led me many a dance by their skylarking and quarrels." His first foundry burned to the ground in 1866.

In contrast to Elijah Leonard, John Gartshore built a water wheel for his power source, using water from the Spencer Creek in Dundas. Because Dundas was located on the new Desjardins Canal, he had ready access to water transportation. Like Leonard, Gartshore built steam engines: the first one he built for himself in 1847, which was used to supplement the power already available from his water wheel. As a millwright, Gartshore would be familiar with founding, but he would not be trained in the detailed art and practice of the founder. He would recognize the need and opportunity for foundry operations, particularly because of his experience with flour and sawmills, but he would be dependent on the men with whom he worked for detailed expertise in selecting the appropriate raw materials, choosing the appropriate sand and release compounds for his moulds, building wooden and earth mould shapes, firing the cupola, soaking the poured pieces, critically tapping/inspecting the cooled products and many other essential details of foundry practice. In a sadly familiar parallel with Leonard, Gartshore's first foundry also burned to the ground on October 8, 1846, eight years after it was built. It was noted that, "All shops were burned: the main two-story building, the wood-working shop, the pattern shop, the stove assembly shop, the moulding and blacksmith shops, all made of wood, all burned. The machinery and the workmen's tools were lost, as well as the books, plans and drawings...." (10, p 20).

In that same year, James Ewart's Galt Mill was also destroyed by fire and he suffered heavy losses in the wheat market. He financed the reconstruction of Gartshore's foundry but, to do so, took heavy mortgages on some of his properties. All of these mortgages had not been paid off by the time he died in 1853 and his creditors were forced to sue his estate. The estate, as one of John Gartshore's creditors, finally turned for money to him, but he was also in financial difficulties. These cascading business events will be discussed again later.

To return to 1846, John Gartshore with backing from James Ewart immediately rebuilt his foundry, this time in stone. The new buildings included a brass foundry, boiler, moulding, blacksmith, pattern and machine shops. In *The History of the Town of Dundas* (10, p 26) the author asserts that the Gartshore shops were back in operation by March 1st [1847], with more men employed than before the fire. A local newspaper, the *Dundas Warder*, in its November 13, 1846, issue contains a brave advertisement that the Dundas Foundry "continues to manufacture steam boilers, thrashing machines of 2 to 8 HP, cooking, parlour and box stoves...etc."

A detailed journal kept by a Gartshore customer at that time - the mill owner Jacob Keefer (12) - describes the construction of one of his mills which ordered castings and millstones from the foundry in Dundas. Keefer's mill was located at Thorold, on the Welland Canal, and was called "Welland Mills." Plans were sent to the foundry on December 2, 1846: millstones and a "load of castings" were picked up by Keefer on January 13, 1847. In view of the destruction caused by the fire three months earlier, it was remarkable that the stones and castings were ready for him. Keefer still complained in his journal that Gartshore's work was slow and the terms of payment contentious!

Over 150 years later, the "new" foundry building still stands at 64 Hatt Street, facing Foundry Street in Dundas. The building is presently occupied by a the Valley City Manufacturing Company, makers of furniture.

Foundry Days in Dundas

Between the year 1838 when he started his foundry, through 1846 when the foundry was destroyed by fire and immediately rebuilt, to the mid-1860s, Gartshore's business was busy and successful. One historical note claims that the foundry "made mill machinery for most of the pioneer saw and grist mills built in Ontario between 1838 and 1870." (9, p 37). Along with the design and construction of some famous pumping engines, which will be described in more detail shortly, the Dundas Foundry and Machine Shop was turning out steam engines, particularly for ships and ferries. After the first stationary steam engine had been completed in 1847, the Gartshore shops turned their attention to marine engines that ranged up to the 20 ton, 2000 horsepower units built for the Great Western Railway Company's ferry, the *Great Western*, which operated on Lake Erie (9, p 37).

An advertisement in 1862 noted that the foundry sold steam engines, boilers, mill machinery of all kinds, portable mills, mill stones, water wheels, bran dusters, separators etc...(17). It particularly highlights Gartshore's Treble-Suction Smut Machine - a device that cleaned mould off wheat. Oil stills, tanks, car wheels and locomotive castings were also advertised, as were loam, dry sand and green sand castings of every description and any weight. When oil was discovered near Sarnia in 1858, the foundry supplied the emerging industry with drills and equipment. Pans for the salt mines at Goderich were built (1), as were machines for cotton mills such as its neighbour, the Dundas Cotton Mills (2). Gartshore and his colleagues were, by this time, co-ordinating the work of literally hundreds of employees working on scores of projects. *The History of the Town of Dundas* records that one large casting - a 17 ½ ton anvil - was built for a rolling mill in Hamilton and required 14 horses to deliver it to its new owners (9, p 38). That delivery must have been quite a parade!

The significance of a foundry such as this is hard to over-estimate. It turned out machine tools such as lathes, which built other machines, and steam engines, which powered other industries. It provided work and direct wages for many people. As the Jameses have noted, "By 1864 there were 110 men and boys on the payroll in Dundas and another 100 employed in the country erecting mills" (2). Two expert millwrights who supervised the construction of mills for which John Gartshore had contracts are named in one of the references (1, p 94). Of equal importance, the Gartshore shops became famous for the training of apprentices. Many early Canadian 'engineers' were trained there. Proof of having been apprenticed there was a strong recommendation for employment in similar institutions anywhere in North America. Gartshore apprentices also went on to distinguish themselves in their own businesses. The partial list of employees and their subsequent activities included in **Appendix III** is an indication of the widespread influence that John Gartshore had in the early years of business in Upper Canada and Canada West.

There were times of business recession, however. In 1858, a number of the Gartshore Foundry employees were laid off due to declining ironwork sales. One of these, John Bertram, farmed for five years but returned to the foundry in 1862 when business improved (11). He and his wife, Elizabeth, had emigrated from Scotland in 1852. As Janet Bertram Brown has noted, "A chance acquaintance, when he found out that John had apprenticed as a millwright in Scotland, suggested that he go to Dundas and go to Gartshore's foundry to get a job. John did just that and got a job, along with the

men of the party who were also engineers” (11). In 1863 Bertram, together with another Gartshore employee, Robert McKechnie, founded the Canada Tool Works, which became John Bertram and Sons Company Limited of Dundas in 1886 (13, pp 9-20).

Accidents also happened. In May 1862, while traveling alone by horse and buggy between Dundas and Hamilton, John Gartshore was accidentally shot in the eye by a hunter. Although the horse was also hit, he managed to drive himself to a local doctor who removed the injured eye. Later, he was awarded \$4000 in damages (2, p 101).

The Gartshore Pumping Engines

Today, the best-known products from John Gartshore’s shops are the two beam-type pumping engines that were built to bring fresh water to the city of Hamilton. These engines deserve more than a passing mention since they still stand as a memorial to Gartshore’s technical skill - and perhaps to his misplaced trust in the financial stability of the city of his time.

The valuable and interesting book *A Sufficient Quantity of Pure and Wholesome Water: The Story of Hamilton's Old Pumphouse* by William and Evelyn James describes in vivid detail why Hamilton’s development was so dependent on a supply of fresh water (2). For drinking and washing, for fighting fires, and for reducing the unhealthy clouds of dust in the dry summer months, water was needed for Hamilton to progress as a community.

Although the Hamilton City Council was desperately short of funds, they were convinced of the importance of providing water for their town. In 1857 they appointed Thomas Keefer as chief engineer for the project of supplying this water. Keefer, a leading figure in early Canadian engineering, had been educated at Upper Canada College and had then apprenticed as an engineer on the Erie Canal. At that time there were no institutions in Canada where formal engineering instruction was given: The Rensselaer Polytechnic Institute in Troy, New York, conferred its first engineering degrees, apparently the first in North America, in 1835. The first formal engineering course in Canada was established in 1854 at King’s College, Fredericton, which later formed part of the University of New Brunswick*. Much later, in 1887, Thomas Keefer became the first president of the Canadian Society of Civil Engineers (the precursor of EIC) and then, in 1888, president of the American Society of Civil Engineers. He also taught at McGill.

John Gartshore’s company built the pumping engines for the first Hamilton water system. Thomas Keefer, as the chief engineer for its construction, chose the type of engine to be used and designed the overall system**. John’s oldest son, Alexander, did the detailed drawings for the pumping engines. Alexander had been apprenticed at another famous foundry, the West Point Foundry, located in New York State. Although this foundry was closely connected with the manufacture of

* King’s has been recognized by the Canadian Society for Civil Engineering as a national historic civil engineering site.

** Keefer was also responsible for waterworks in Toronto, Montréal and Ottawa.

military supplies, it was a broad and progressive institution. It was reported to have "...produced the first steam engine built in the United States, finishing all the castings for the Erie Canal, and the water pipes for the cities of New York, Boston and Chicago" (8). In 1854, at the age of 15, Alexander had gone to the West Point Foundry and had spent two years there as an apprentice pattern-maker. He had returned there in 1857 for two more years, to do the detailed design of the Hamilton pumps under the supervision of Frederick Rumpf (8) (19). In 1859, Alexander joined his father's firm as an employee.

Each of the two independent, but identical, Hamilton pumping engines consisted of a 100 horsepower steam engine of the Woolf compound type connected by way of a "walking beam" to a water pump and a flywheel. Together, these two engines brought water from nearby Burlington Bay on Lake Ontario at a rate of 3.3 million gallons a day (about 6 cubic feet per second) to a reservoir located 160 feet above the level of the lake. A 33-inch diameter wooden stave pipe, 1920 feet long, connected the reservoir to the sump at the pumping station (2).

Some conception of the size of these engines may be gathered from the following few facts and figures, taken largely from the James's book (2):

- The walking beam for each engine is 30 feet long and weighs 25 tons.
- The side-plates that form the structural strength of these beams are each 30 feet long and weigh seven tons; mould forms were dug in the foundry floor and each mould was filled in one pouring of molten iron; the plates were dug out of the ground two months after being poured and left for another six months to cure.
- The flywheels are 24 feet in diameter, each weighing 22 tons.
- In the original design, steam passed from the high pressure cylinder, which was 24 inches in diameter with a piston stroke of six feet, to the low pressure cylinder, which was 42 inches in diameter with a stroke of eight feet.
- Steam pressure was originally 30 pounds per square inch (gauge), but was raised to 60 psig in 1882, and to 70 psig in 1892.
- The engines operated at 15 revolutions per minute, or one revolution every four seconds
- Four Cornish boilers were initially installed, each 30 feet long, six feet in diameter, and weighing nine tons; they provided steam at 30 psig and consumed about 1.6 tons of coal per day when working one of the pumps.
- The pumping engines were first run in 1859; they continued in daily service for over 60 years, until 1920, and were in standby use until 1938 - nearly 80 years after being started.
- "A noble building of sandstone and granite houses the massive engines in the richly embellished style typical of Victorian industrial engineering" (14).
- James McFarlane, originally an employee of the Gartshore Foundry in Dundas, directed the installation of the pumps and remained as the chief engineer in charge of the pumphouse for the 50-year period from 1860 to 1910 (2, pp 91-99).

The pumphouse and associated piping system were officially opened with a great flourish in the fall of 1860 by Edward, Prince of Wales, heir to the British throne. An interesting article describing the

pumps, with contemporary sketches of the pumphouse and its surroundings, was included in an 1863 issue of the *Canadian Illustrated News* published in Hamilton (16). The same issue of the *News* features a cover story about the waterworks' chief engineer, Thomas Keefer. Today, the remarkable pumps and pumphouse are a national historic site*, as well as the principal exhibit in the Hamilton Museum of Steam and Technology. One engine is turned over by an electric motor as a regular museum demonstration (15).

John Gartshore, eager to win the contract to build the pumping engines, agreed to receive the entire payment for his work in debentures issued by the city of Hamilton. A sum of \$89,416 in debentures, plus \$433 in interest, was paid to him before December 31, 1859 (2, pp 99, 130). Hamilton at that time was entering a period of severe financial trouble. The article describing the pumps in the *Canadian Illustrated News* (16), includes somewhat bitter comments about the financial difficulties of the city of Hamilton. It was noted that, in 1862, the lighting in the streets went off, and the fountains in Gore Park, installed by the water commissioners in 1860, were shut down to save the expense of pumping. Residents had been leaving Hamilton for some time, and the population dropped steadily. In 1857 it had stood at 25,000 but was down to 19,000 in 1860, and dropped further to 18,000 in 1861 (37). Unrealistically hoping that income from the distribution of water would soon pay for the water system, the city had overextended itself and was declared officially bankrupt in 1862. Bailiffs auctioned the city possessions, not including the pumping engines (2, p 67). The city's bankruptcy undoubtedly lowered the value of the debentures held by Gartshore and reduced the interest payments he expected to receive. These problems contributed to his most serious financial crisis in 1866.

Even while the pumps were being made, Gartshore was actively soliciting more business. In 1857, for example, an unsuccessful tender was presented by his foundry for the water pipes related to the Hamilton pump project (2). Making the pipes would have required John to construct new buildings in Hamilton, which presumably raised his price above that of his competitors, and the contract was given to a company in Scotland. In spite of this setback, Gartshore was clearly anxious to expand and take on an ever-widening variety of work.

The Company Rises and Falls

John Gartshore's Dundas Foundry was apparently well managed and directed. Primary evidence of the credit rating of John, his son Alexander, and their business interests is contained in the records (or fonds) of R.G. Dun & Company, which are described on the website of the National Archives of Canada (www.archives.ca), through which they can be accessed, as follows (18):

"R.G. Dun & Co. was founded in 1841 in New York City, under the name of the Mercantile Agency, with the purpose of providing information to lenders on the credit-

* Recognized as such by many engineering and historical groups and societies.

worthiness of businessmen. Information was initially collected through local correspondents, and later, by travelling agents of the Company.”

From these records it appears that John Gartshore, as a businessman and a person, was highly regarded. This can also be gathered from notes such as the following entry for August 1857:

“Been in business for 16 or 17 years, made money, does a splendid business, understands it well, very strict...and industrious, of good character and habit, very good credit...”

Hints of his business acumen are contained in the tantalizing entry for July 25, 1859, to the effect that:

“...(the) contract for Hamilton water works for which he took Hamilton debentures but when he got rid of (them) at low rates of discount, has kept his establishment in full progress during the hard times.”

Another flattering reference to Gartshore’s ability and character appears in the entry for April 15, 1861:

“Gartshore has command of plenty of means and has large amounts due him. A fine man, well adapted for his place - good beyond doubt - cautious and will not incur liabilities beyond their ability.”

However, signs of financial stress appear in the entry for October 2, 1861:

“Business not so good but still in excellent condition.”

On May 1, 1865, John Gartshore took as his partner, Alexander Gartshore, his eldest son, the company name now becoming Gartshore & Son. Perhaps foreseeing a coming financial crisis, John sold land to Alexander on September 5, 1866, and retired from the company a few days later, on September 8 (20)(18). The company now became Gartshore & Company, led by Alexander.

Debts piled up and Gartshore & Son and Gartshore & Company were called to account by their creditors. At a meeting in Hamilton on December 21, 1866, John and Alexander met the representatives of 18 creditors, including one from the Ewart Estate (21). The meeting reached an agreement that the payment of debt would be made at the rate of 10 shillings to the pound, payable in installments over a period of two years, without interest, the assets to be assigned to trustees and the business to be carried out by Gartshore & Company to enable them to pay. The Dun fonds of January 19, 1867, record that:

“It was understood that “G” was in a sound position financially until quite recently when through endorsements for others he was rendered unable to meet his liabilities... Mr. “G’s” high character is to local creditors the best guarantee that the arrangements will be

faithfully carried out.”

Further entries in the Dun fonds suggest that the city of Hamilton owed the company a significant sum of money, probably arising from the Hamilton engine contract, or interest on debentures still held by the company in payment for the construction of the engines.

John and Alexander Gartshore continued to live in Dundas until 1870, working together to pay off debts incurred by the companies with which they had been associated. There are records of John paying debts in 1867 (22); also of raising money by selling land, which he and his wife owned in Fergus, to his son-in-law, James Wilson (23). Wilson had married John's eldest daughter, Jacqueline, and operated an oatmeal mill in Fergus for over 40 years (1).

By July, 1869, the Dun ledgers record that there were defaults on payments and that the foundry was no longer operating due to a lack of work (18). The comments on Alexander were somewhat unflattering:

“The father...now too old and the son although of fair abilities and natural shrewdness lacks energy and is too indifferent to ever be...successful...by his own efforts.”

In December 1869, the former Gartshore foundry in Dundas was taken over by four new owners, who leased the plant and premises. They continued to operate the shops under the name of Thomas Wilson & Company. The men who signed the partnership agreement in this firm - all former Gartshore employees - were: Thomas Wilson, Walter Bastable, Alexander Barrie and David Scott (1, p 86). They were later joined by Duncan McFarlane and Thomas Howe. It was the Ewart estate that leased the plant to Wilson and his partners, suggesting that a majority of the debt remaining after the departure of the Gartshores was sustained by the estate of the foundry's first backer, James Bell Ewart. Thomas Wilson & Company continued to operate the shops until it, too, went bankrupt in 1899 (24). When John D. Pennington took over the buildings for his church furniture company, the Ewart estate was still involved (24)(25).

In 1870, Alexander Gartshore moved to Hamilton and his father, John, moved to Toronto, where he took over an existing business, incorporating it in April 1870 as the Toronto Car Wheel Company. He managed the company until his death in 1873 while on a visit to Scotland. Railways were spreading across North America and John's last company supplied “car, tender and locomotive wheels made from the best blast charcoal iron” (28). His second son, John J. Gartshore, took charge of the company when his father died.

From various obituaries of John and Alexander Gartshore, the picture that emerges is that John, with full immigrant vigour, hard work and careful management, established himself and his family in Dundas (26). His son, coming from a now well-established family, was able to take an active interest in sports, travel, politics, the arts and “all the comforts that life afforded” - while becoming a very successful businessman (27).

In Conclusion...

As just noted, John Gartshore typified the immigrant's vigour and the tenacious energy of the settlers who came to Upper Canada in the early part of the nineteenth century. These people adapted new technology, designed new institutions and created new social norms, while at the same time trying to find stability and prosperity for their families, their companies and their communities.

John Gartshore managed a very successful foundry and machine shop for over 25 years in Dundas. The outstanding examples of his technical expertise and management skills were the Hamilton pumping engines, which ran constantly for over 60 years. The Waterworks that still houses them has been designated by many as a national historic site. John's ability to inspire his employees and apprentices must have been exceptional; his broadest legacy lies with the many employees who tasted the satisfaction of doing good technical work for Gartshore and who went on to establish their own successful engineering companies. Finally, it is worth noting that all three of John Gartshore's sons emulated their father by having distinguished careers of their own in the iron-working business.

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Appendix 1

John Gartshore's Family

John Gartshore's own children provide an example of the family of an early Canadian engineer. He had seven, six of whom survived beyond their early years. His three surviving sons all had distinguished careers in iron working; his three daughters married a miller and two merchants.

The eldest child, Jacqueline, was born in Fergus in May, 1837, and was taken by her parents from Fergus to Dundas before she was a year old. She married James Wilson, who operated an oatmeal mill in Fergus for over 40 years.

The second child and eldest son, Alexander, was born in Dundas in 1839 and eventually took over his father's foundry there. However, in 1870 - with his cousin of that name - he established the Thomas Cowie & Company foundry in Hamilton. When this partnership dissolved, Alexander carried on alone. The company later became the Canada Pipe Foundry and later still, in 1904, the Gartshore-Thompson Pipe & Foundry Company. These companies, with a work force of as many as 150 men, came to specialize in "sand spun" centrifugal castings of pressure pipe, producing as much as 50 tons a day and shipping the product as far away as Vancouver. The Gartshore-Thompson company was purchased by the Canada Iron Foundries group in 1939, well after Alexander's death in 1904.

The third child, Marion, was born in 1840. She married A.C. Lesslie, the founder of A.C. Lesslie & Company, who were hardware and sheet metal merchants for many years.

The fourth child, Margaret, was born in 1844 and married Richard Todd Wilson, who was a merchant in Dundas and the brother of James, who married her older sister.

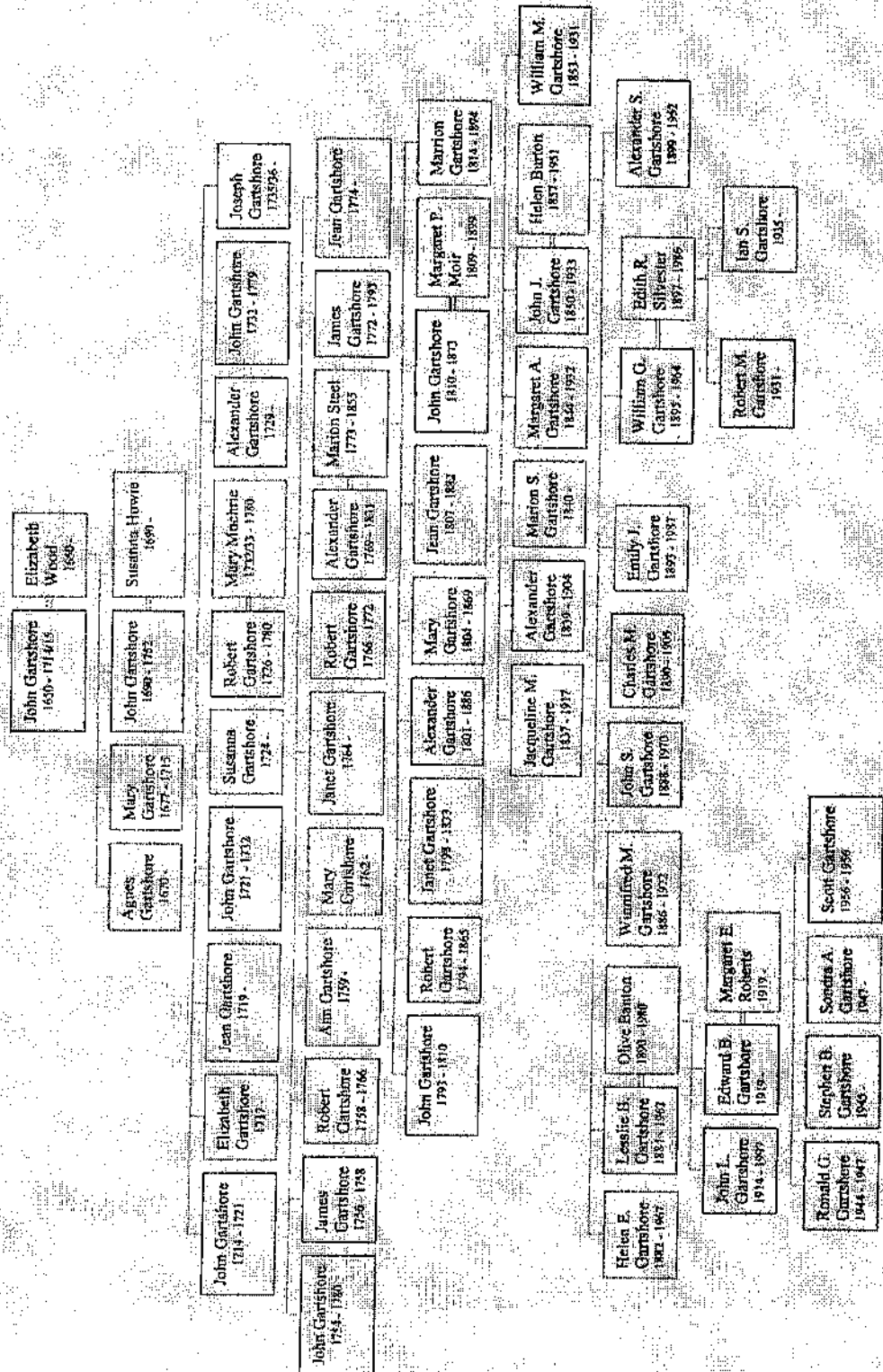
The fifth child, John J. Gartshore, was born in 1850 and is the direct ancestor of the authors of this paper. After running his father's company, Toronto Car Wheel, following the death of John Senior in 1873, he started his own railway supply business under the name of the John J. Gartshore Company Limited (29)(1, p 34). It was run by him, and later by his two sons, J. Stanley and Lesslie B. Gartshore, until the Merrilees Company bought it in 1952. John J. spent part of his early life in the household of his maternal aunt, Jacqueline (Moir) Lesslie* and her husband James, who provided a home for him while he was attending Upper Canada College in Toronto. The religious zeal and political activism of his Uncle James provided a model for John J.'s participation in social causes. He became a strong churchman: he was one of the original founders of the Eglinton Presbyterian (now St. George's United) Church, whose cornerstone he laid in 1923. He was Sunday School superintendent there for 32 years. He was also associated with the YMCA in Toronto from 1876 until 1925, a period of almost 50 years (31). He died in 1933, at the age of 83. (Appendix II describes some of James Leslie's reminiscences, gathered from notes he wrote later in his life.)

* Not to be confused with John J. Gartshore's sister, Jacqueline (Gartshore) Wilson.

The sixth and last child, William Moir Gartshore, was born in 1853. He wrote the book *Leaves of a Lifetime*, consisting of personal recollections of his family (1). He learned the trade of pattern maker in his father's shops and went with his father to Toronto in 1870 to work in the new family company, the Toronto Car Wheel Works. In 1873, at the age of 20, he went to London, Ontario, to superintend the London Car & Wheel Company, of which his brother Alexander was the Secreatry (1, p 99). This new company's principal business was the conversion of rail cars belonging to the Great Western Railway from the provincial gauge of 5' 6" to the new standard gauge of 4' 8 ½". When this major job was completed, the company closed down. William then joined the McClary Manufacturing Company in London. Over the next 50 years he rose to the position of president and general manager. He also married the founder's daughter, Catherine McClary. The McClary stove was one of the early success stories in Canada. William introduced a Benefit Association and a Welfare Department within the company - essentially a voluntary health insurance scheme for employees, and one of the first on the continent (1, p 141). In 1927, McClary's was amalgamated with others under the name of Canada Steel Wares. William was associated with the military for most of his life, becoming Colonel W.M. Gartshore, and seeing active service during the Second Riel Rebellion in 1885 (1, p 109). He ran twice - unsuccessfully - for the position of mayor of London (1, p 127).

The genealogical tree showing selected ancestors and the descendants of John Gartshore appears on page 15.

Ancestors and Descendants of John Gartshore



Appendix II

A Brief History of the Lesslie Family

Much of the information about the Lesslies, who were related by marriage to the Gartshores, comes from diaries and memoranda written by James Lesslie around 1880, when he was 79 years of age, which were kept by the Gartshore family (30). As mentioned in the main text, John J. Gartshore, John Senior's second son, lived in Toronto with his uncle and aunt, James and Jacqueline Lesslie, for some part of his early life.

James Lesslie was one of a family of 12 children from Dundee, Scotland. His father, Edward Lesslie, was concerned with the business of books, paper and ink. James' brother John had come to Canada from Dundee in 1820, bringing with him stock to establish a new shop as bookseller, stationer, bookbinder and ink manufacturer in the town of York, later Toronto. By adding drugs and medicine to his stock, he turned his business from the traditional general store of the early days into the first bookseller and druggist in York.

The Lesslies in Scotland knew a family of Mackenzies, one of whom - William Lyon Mackenzie - was sponsored as an immigrant to Canada by Edward Lesslie and was a fellow passenger with John Lesslie on his 1820 voyage from Scotland. Mackenzie spent some time as assistant to the engineer surveying the first Lachine Canal, but later was given a position in John Lesslie's store in York. In 1821, Mackenzie was sent by John Lesslie to open a new stationery shop in Dundas. James Lesslie himself came out from Scotland in 1822 with further stock for the store in York. Finding that there was more than enough stock for one store, James moved on to Kingston where he opened another Lesslie stationery shop, remaining there for four years. These three stores, located in the three principal Upper Canada towns of York, Kingston and Dundas, and called Lesslie & Sons, probably formed one of the earliest chain stores in that part of the country (1, p 78).

William Lyon Mackenzie nearly became a partner of the Lesslies. However, this was not approved by Edward Lesslie, who preferred to keep the business in the family. Mackenzie then left Dundas and the Lesslie firm in 1823 and moved to Queenston, and later York, and the newspaper business. He was elected the first mayor of the new city of Toronto in 1834. James Lesslie, a member of the same Liberal party as Mackenzie, was elected alderman at the same time. Mackenzie went on to lead the armed rebellion of December 1837 against the government of Upper Canada.

As noted above, James Lesslie - who had much to do with raising John J. Gartshore - was a religious and political activist, fighting against perceived (particularly Conservative government) wrongs however he could. To publicise his views, James bought a newspaper, *The Examiner*. Only when "...the great question of religious equality was settled, and the foundation of a State Church for Upper Canada were forever removed..." did he sell the paper in 1854 to George Brown of the *Globe* "...at a loss of \$8000 unpaid subscriptions" (30).

On another occasion, James threatened to emigrate to the United States. With others, he formed the

“Mississippi Emigration Society” in Toronto, with the express purpose of establishing a “Canadian Colony” in Davenport, in what later became the state of Iowa - a place James had personally visited and selected as suitable for a new community. To quote James once again, “...the peaceful friends of intelligent freedom and progress believed that the only possible remedy for the evil would be found in a systematic scheme of emigration to one of the new territories of the United States” (30). The colony was never started, although James’ brother Charles did move to Davenport and lived there for the rest of his life.

James sold his book, stationery and drug business in 1855, at the age of 54, and purchased an estate in the (then) village of Eglinton, near Toronto. At least part of this estate had been owned previously by John Montgomery, a supporter of William Lyon Mackenzie. In fact, the 1837 rebellion was staged from Montgomery’s Tavern, at what is now the corner of Montgomery and Yonge Streets in Toronto. Montgomery fled after the rebellion and ownership of the property changed. After buying it, James and Jacqueline lived in *The Willows*, which had been the Montgomery home on the property, built around 1836. John J. Gartshore lived there both before and after he married. A new house, *Willowbanks*, was built in the 1890s as the family grew. The original homestead was demolished in the early 1900s to make way for a housing development. However, *Willowbanks* is still standing at the northwest corner of Oriole Parkway and Burnaby Boulevard.

Appendix III

A Partial List of Employees and Apprentices of the Gartshore Foundry

Much of the following information has been provided by
Larry McNally of the National Archives of Canada

- Barrie, Alexander (b.1826), finisher, partner in Thomas Wilson & Company.
- Bastable, Walter (b.1831), patternmaker?, partner in Thomas Wilson & Company.
- Bertram, John (1829-1906), founded the Canada Tool Works (1863) with Robert McKechnie; later founded John Bertram & Sons, Dundas.
- Bickell, George Jr. and Carley, John (1818-1876), machinists, built the steam launch *Enterprise* in Dundas.
- Crombie, James (1818-1876), later owned the Dumfries Foundry, Galt.
- Cowie, Thomas (b. 1835), founder, nephew of John Gartshore, founded Thomas Cowie & Company, Hamilton.
- Foley, William (b. 1844), machinist, with Goldie McCulloch & Company, Galt.
- Gartshore, Alexander (1839-1904), son, founded the Cowie-Gartshore Foundry, Hamilton.
- Gartshore, John J. (1850-1933), son, managed the Toronto Car Wheel Works after his father's death.
- Gartshore, William Moir (1853-1931), son, the London Car & Wheel Company, and later the McClary Manufacturing Company, London.
- Gibson, William H., lathe maker, later with the Dundas Novelty Works.
- Howe, Thomas (1821-1871), founder, partner in Thomas Wilson & Company.
- Inglis, John (1823-1898), foreman patternmaker, later founded John Inglis & Company, Guelph and Toronto.
- Laurie, Thomas C. (1811-1893), supervising millwright for Gartshore, St. Catharines and Hamilton.

- Leavitt, George, apprentice.
- McFarlane, James, installed the Hamilton pumps and operated them for 50 years.
- McFarlane, Duncan (b. 1834), engineer, partner in Thomas Wilson & Company.
- McIlwraith, Andrew, patternmaker.
- McKechnie, Robert (the younger) (1834-1909), patternmaker, founded the Canada Tool Works with John Bertram, which later became John Bertram & Sons.
- Moffat, Thomas Jr., stove founder, later of Moffat Stoves, Weston
- Moore, Pat, millwright, later worked in the Elora district
- Scott, David, apprentice, partner in Thomas Wilson & Company.
- Thompson, Andrew, supervising millwright, later worked in London.
- Thompson, James, apprentice, founded the Gartshore-Thompson Company, Hamilton, with Alexander Gartshore.
- Whitelaw, Robert (b. 1829), apprentice, later with the Oxford Foundry, Woodstock.
- Wilson, Thomas (1828-1891), machine shop foreman, took over the Gartshore shops in 1869 and continued to operate them as Thomas Wilson & Company.

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26. See the website: www.canadiana.org
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