BAND OF BROTHERS

the KEEFERS

By Brian Gilhuly – Part One

Samuel Keefer
This undated image shows a young Sam Keefer, probably during his years with the Board of Works. There is a firmness in his expression that also appears in his reports and correspondence as Canada's first Inspector of Railways. globalgenealogy.com gazrw-0004 photographer and date unknown.

Thomas Coltrin Keefer
When Tom sat for this photo, construction was well advanced on the Ottawa City Passenger Railway (OCPR), the capital's first horse-drawn streetcar line, of which he was President. The 1870 OCPR line ran from New Edinburgh to the south end of brother Sam's Union Suspension Bridge, at the Chaudière Falls. Library and Archives Canada PA-033463 (detail). Topley Studio photograph 1869.

Canada's early railways were shaped by a small group of men who lived and worked through the technology shift from canals to railways and the political transformation from colonies to confederation.

Remarkably, three pairs of brothers were prominent among them: Samuel and Thomas Keefer, Walter and Francis Shanly, and John and Harry Abbott. Five were civil engineers whose careers spanned the emergence of a profession from its craft roots. All were establishment Tories. The Keefers held public appointments. Walter Shanly and John Abbott were elected as Conservatives, while brothers Francis and Harry ran for the party without success. John Abbott became Canada's third Prime Minister.

The brothers' legacy marks the Ottawa region but their accomplishments extend from the Canso Strait to the Pacific by way of Massachusetts. In this issue of ***Branchline***, we'll begin with the story of the Keefer brothers.

BACKGROUND

In 1841, the Province of Canada (the southern parts of today's Ontario and Quebec) was created by Britain in the wake of colonial rebellions. The Province was ruled by an appointed Governor General and administered by his appointed executive. So-called 'responsible government' – control of the executive by the legislature – was almost a decade away. Public service jobs were filled by patronage. Most of Canada's public expenditure was on canals and roads. The British army had built military canals on the Ottawa River and the Rideau Canal to connect the Ottawa to Lake Ontario. Commercial canals were a provincial concern. Canada built canals on the St. Lawrence and rebuilt the Welland Canal, purchased from private owners.

In charge of all this was the Provincial Board of Works, and in charge of the Board of Works was Hamilton Hartley Killaly (*centre*), an Irish engineer of some repute who had migrated to Upper Canada in 1835. Described by one biographer as a "boisterous eccentric", Killaly was Chairman of the Board until its abolition in 1846. After the board was abolished to permit greater political control of public expenditures, he became the quasi-independent (by statute) Assistant Commissioner of the Department of Public Works from 1851 to 1859. He remained with the department in lesser roles for some years and served on numerous commissions. H. H. Killaly died in 1874. Over his career, he had trained many engineers, including Walter Shanly. For much of the time his assistant and chief rival was Samuel Keefer, who likewise had developed a 'school' of protégés.

SAMUEL KEEFER AND THOMAS COLTRIN KEEFER

For the Keefer brothers, the choice of a career in civil engineering was a matter of being in the right place at the right time. Their Loyalist father, George, had settled at Thorold in the Niagara peninsula in 1793. Samuel was born there in 1811, followed by Thomas in 1821, after his father remarried. George Keefer was an early backer of neighbour W. H. Merritt's plans for a canal around Niagara Falls and in 1824 became the first President of the Welland Canal company. Sons Sam, Tom, and George Jr. apprenticed to the former Erie Canal engineers who designed, built, and rebuilt the Welland between 1824 and 1835.

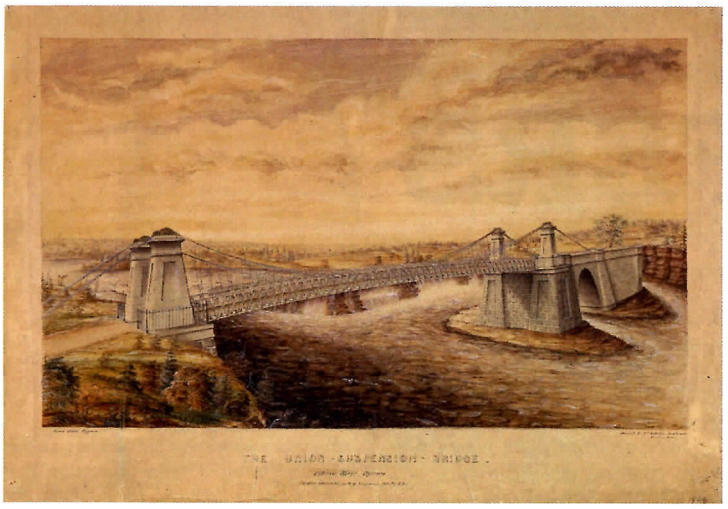
Hamilton Hartley Killaly
The first head of Canada's Board of Public Works, Killaly was chiefly responsible for the development of the Great Lakes - St. Lawrence canal system. By 1851, before the railways, it had ended the commercial importance of the Rideau route. Many leading Canadian engineers worked under Killaly at the Board, including the Keefer brothers, Walter Shanly, and Casimir Gzowski. McCord Museum I-3795.1 (detail) W. Notman photograph 1862.

Sam Keefer (*top of page left*) mastered his craft quickly and in 1841 was appointed Chief Engineer of Canada's Provincial Board of Works. Just thirty, he was now Hamilton Killaly's second-in-command. Chiefly occupied with the St. Lawrence canals, Sam also designed the 1844 Union Suspension Bridge linking Bytown and Hull (*photo 1 next page*), and got his brother Tom (*top of page right*) a position as engineer of the timber slides and improvements on the Ottawa River.

This set the stage for Tom's first major accomplishment; his 1848 marriage to Elizabeth McKay, daughter of Bytown's richest citizen. Freed from financial worries, Tom found fame in 1850 as a propagandist for new technology. With no railway experience, he authored a pamphlet for the Montreal and Lachine Railroad to promote that line's extension to Prescott and westward. Despite, or perhaps because of, its title – Philosophy of Railroads – and technical appendices, the 26-page essay was a runaway success (*photos 2 and 3 next page*). It had four printings, plus a French edition, and it was cited by railway promoters for decades. A second essay that year, The Canals of Canada, won a prestigious award, cementing Tom's reputation as a transport visionary and media darling.

Tom Keefer's promotional talents soon found a new outlet in Canada's display at the first world's fair, the Great Exhibition of 1851 at London's Crystal Palace. However, his efforts to break into the rail industry were less successful. Though he did some preliminary surveys for the Grand Trunk Railway (GTR), he fell out with the company and had to watch its progress from the sidelines. When the GTR later built the Victoria Bridge at Pointe-Saint-Charles, the location he had proposed, Tom was given no credit until his friends launched a public campaign. By then, he had moved on to designing municipal water systems. After the death of his father-in-law in 1855, he became manager of the McKay estate.

As Tom was giving up on the railway industry in 1853, Sam was joining it. In fact, the Keefer brothers never worked together. Sam quit the Department of Public Works to become the Divisional Engineer for the Montreal to Kingston section of the Grand Trunk.



1. Union Suspension Bridge 1844

This Samuel Keefer bridge was one of the first projects of the Canadian Board of Works, intended to celebrate and embody the union of the two Canadas in 1840. Both designer and artist were employed by the Board. Rubidge, a draftsman, added hand-lettered text made to look as though it were printed.

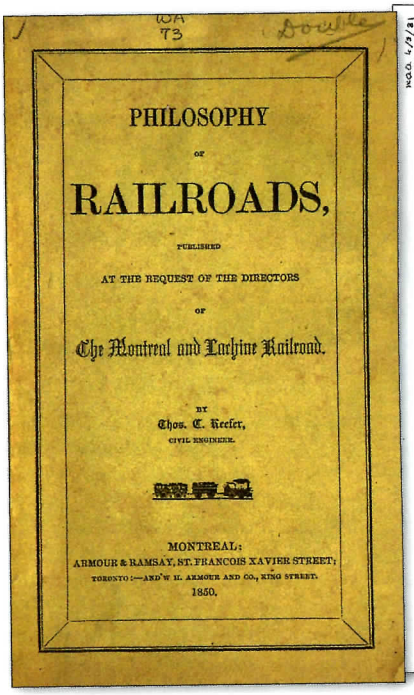
Library and Archives Canada C-005040. Frederick Rubidge watercolour 1844.

He designed the bridges at Sainte-Anne-de-Bellevue (*photo 4 below*) and Kingston Mills (*photo 5 next page*) and he located the GTR's Montreal terminus so as to connect with Tom's proposed bridge location.

Sam's father-in-law, George Crawford of Brockville, was a Grand Trunk director and President of the newly-chartered Brockville and Ottawa Railway (B&O). Amid speculation that the GTR would absorb the latter, Sam and his boss, Chief Engineer A. M. Ross, toured the proposed Brockville - Pembroke alignment of the B&O in July 1853. Nothing came of the takeover rumours but, by mid-1854, Sam had combined his GTR job with the position of Supervising Engineer of the B&O. Such combinations were common among nineteenth-century engineers, but they could lead to interesting moments.

In 1854, Grand Trunk construction was nearing Brockville and GTR District Engineer, Samuel Keefer, sought a way to bring materials inland from the docks. The B&O's charter included waterfront access, but that road's contractors proposed a tunnel that would take years to build. In June, B&O Supervising Engineer Keefer proposed to the B&O Board of Directors that it accept a GTR proposal to split the cost of an alternative surface route to the waterfront, which would then become the sole property of the B&O. The contractors objected, and the idea was dropped.

Early in 1856, after the original contractors had failed and the B&O was looking for cost savings, Keefer again proposed the alternative waterfront route. Again, the Board failed to respond. However, members of Brockville Town Council took up the fight for the surface route and municipal financing was withheld. After months of recriminations the Council agreed to let the townsfolk decide. Sam Keefer was persuaded to provide yet another report to the Board, this time supporting the tunnel as a 'done deal'. The lure of having Canada's only railway tunnel was too much to resist, and on Dec. 16, 1856 the ratepayers of Brockville gave their assent.



PHILOSOPHY

OF

RAILROADS,

PUBLISHED

AT THE REQUEST OF THE DIRECTORS

OF

The Montreal and Lachine Railroad.

BY

Thos. C. Keefer,

CIVIL ENGINEER.

MONTREAL:

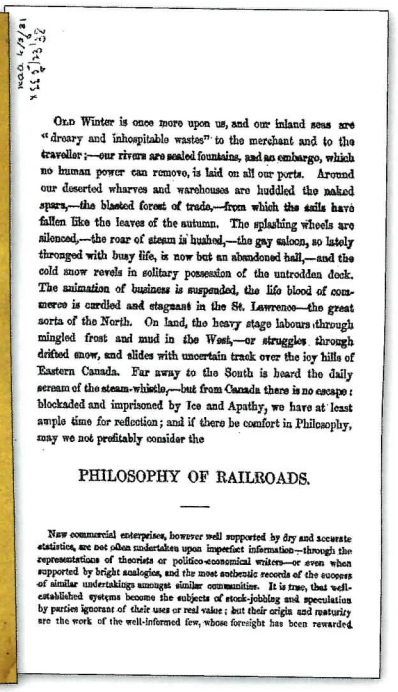
ARMOUR & RAMSAY, ST. FRANCOIS XAVIER STREET;

TORONTO:—AND W. H. ARMOUR AND CO., KING STREET.

1850.

2. Best Seller

Whether it was because of the catchy, if misleading, title, or of public eagerness to embrace the hot new technology is impossible to tell. Either way, this pamphlet enjoyed huge popular success in 1850 and for several years after. It failed, however, in its immediate objective of promoting the westward extension of the Lachine Railroad. – Google Books.



Old Winter is once more upon us, and our inland seas are "dreary and inhospitable wastes" to the merchant and to the traveller;—our rivers are sealed fountains, and an embargo, which no human power can remove, is laid on all our ports. Around our deserted wharves and warehouses are huddled the naked spars,—the blasted forest of trade,—from which the sails have fallen like the leaves of the autumn. The splashing wheels are silenced,—the roar of steam is hushed,—the gay saloon, so lately thronged with busy life, is now but an abandoned hall,—and the cold snow revels in solitary possession of the untrodden deck. The animation of business is suspended, the life blood of commerce is curdled and stagnant in the St. Lawrence—the great aorta of the North. On land, the heavy stage labours through mingled frost and mud in the West,—or struggles through drifted snow, and slides with uncertain track over the icy hills of Eastern Canada. Far away to the South is heard the daily scream of the steam-whistle,—but from Canada there is no escape: blockaded and imprisoned by Ice and Apathy, we have at least ample time for reflection; and if there be comfort in Philosophy, may we not profitably consider the

PHILOSOPHY OF RAILROADS.

New commercial enterprises, however well supported by dry and accurate statistics, are not often undertaken upon imperfect information—through the representations of theorists or politico-economical writers—or even when supported by bright aonlogies, and the most authentic records of the success of similar undertakings amongst similar communities. It is true, that well-established systems become the subjects of stock-jobbing and speculation by parties ignorant of their uses or real value; but their origin and maturity are the work of the well-informed few, whose foresight has been rewarded

3. Purple Prose

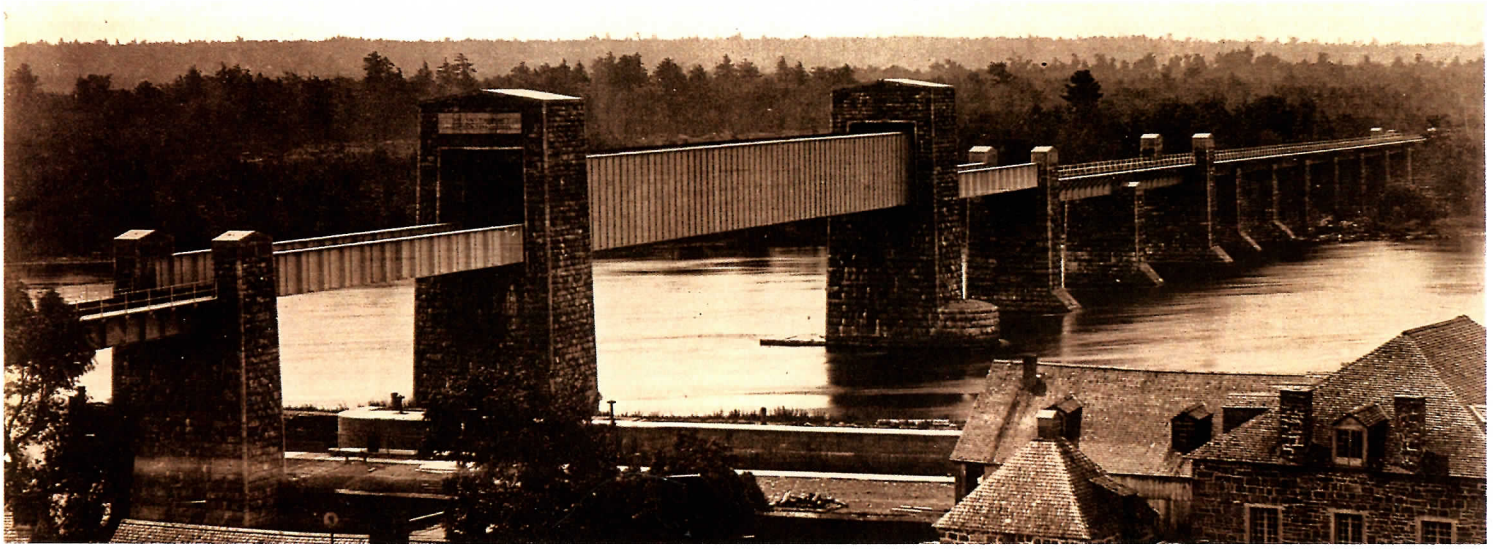
The florid introductory paragraph contains the only occurrence of the word 'philosophy' in the entire thirty-nine pages of text and statistics. At least it's in large block capitals. Anyone who bought the pamphlet expecting a work of scholarship would have been disappointed to find a sales pitch. – ibid.

By then, Sam's GTR employment had ended and the B&O had his full attention. Not for long. After a catastrophic accident, the Act for the better Prevention of Accidents on Railways was passed in 1857. The Act, which among other things required livestock to be kept away from railways, is the basis for subsequent railway regulation in Canada. It created the position of Inspector of Railways to which Samuel Keefer was appointed in September. He continued as B&O Supervising Engineer for several more months, leaving that position sometime in 1858. These few months separating his two roles, apparently created enough distance for Inspector Keefer to inspect and approve the B&O from Brockville to Perth on January 15, 1859;

4. GTR Bridge at Sainte-Anne-de-Bellevue 1855

Combining his brother Tom's ice-shedding pier design and Robert Stephenson's preferred tubular girder, Sam Keefer's bridge over the Ottawa was the direct precursor of the 1859 Victoria Bridge across the St. Lawrence.

McCord Museum N-0000.193.2 (detail). W. Notman photograph ca. 1860.



5. Kingston Mills Bridge 1855

In his 1858 Report as Inspector of Railways, Sam Keefer wrote, "In the foregoing enumeration of bridges, are included seven swing bridges, over navigable streams or canals … The Grand Trunk has judiciously avoided the construction of two bridges of this kind, by making high level crossings of the Ottawa at St. Anne's, and of the Rideau Canal, at Kingston Mills." He had designed both.
Author's collection. Postcard, unknown publisher, ca. 1910.

no doubt a proud moment for former Superintending Engineer Keefer.

As Inspector, Keefer took his responsibilities seriously – in his first sixteen months on the job he travelled 23,000 miles – and his reports and orders to companies show his determination to make the railways safer. His Reports for 1857-58 and 1859-60 are foundational documents for railway historians. In the second report, he introduced the requirement for standard statistical reporting from railways. The production of such reports was a practice that continued for many decades.

There were only two Reports because Sam got a promotion. In mid-1859, the quasi-independent position of Assistant Commissioner of Public Works was abolished. The new post of Deputy Commissioner, subject to direct political control, went to Sam Keefer who assumed this new role along with his existing Railway Inspector responsibilities. The priority of the day was constructing the new Provincial Parliamentary and Departmental Buildings at Ottawa. Sam ran a highly-regarded design competition; then the politics kicked in.

Even though his bid was non-compliant, Sam and his boss, Commissioner John Rose, awarded the main contract to Thomas McGreevy, a notorious Conservative Party bag-man. Public Works staff 'corrected' it by copying missing information from competitors' submissions. There ensued a series of design changes, cost over-runs and escalating invoices from McGreevy that Sam paid with little challenge. In 1862, the Ottawa buildings scandal helped bring down the Cartier-Macdonald Conservative government. The incoming Liberals appointed a royal commission to investigate. Sam resigned in disgrace in 1864 to return to private practice.

That year, younger brother Tom subdivided part of the McKay estate to create Rockcliffe Park, later the Village of Rockcliffe. Tom had continued to do well by constructing waterworks and by designing Canada's pavilion at the second London International Exhibition in 1862. Both brothers made significant strides in 1867: Tom became President of a horse-drawn street railway company in Ottawa and Sam designed the second Niagara suspension bridge (*photo 6*). At completion in 1869, it was the longest suspension bridge in the world. It restored Samuel Keefer's professional, if not public, reputation.

6. Falls View (Clifton) Suspension Bridge 1869

The world's longest suspension bridge when it opened. It served for 20 years. A badly-engineered widening in 1888 made it unstable and it came down in a storm in 1889. Its replacement, built to Sam Keefer's original design, was erected in less than three months. That bridge was later disassembled and re-erected at Queenston, where it served until 1962.
Wikimedia. Currier & Ives print ca. 1869-1872.

After Confederation, with the Conservatives back in power, Sam's loyalty was rewarded by appointing him to commissions and by awarding him contracts like the design of Ottawa's 1873 Dufferin Bridge (*photo 7*). Brother Tom's Ottawa waterworks on Fleet Street went into operation the same year. More importantly, widower Tom consolidated his control of the McKay fortune through a second marriage, to his late wife's widowed sister Annie.

The Pacific Scandal resulted in a change in government. While the Liberals were back in power, Sam lived quietly in Brockville. Macdonald's Conservatives were re-elected in 1878, which was a big year for both brothers. Tom was commissioner of the widely-acclaimed Canadian pavilion at the Paris International Exposition while a jury at the same fair awarded Sam its gold medal in civil engineering for his Niagara bridge design.

Sam's public vindication came with his appointment in 1880 as one of three Royal Commissioners to review the MacKenzie Government's handling of the Pacific Railway. To no-one's surprise, the Commissioners found much to condemn. Sam Keefer must have enjoyed the section of their report which found serious shortcomings in the contracting process of the Department of Public Works. In retirement, he was active. In 1887, he was involved in the formation of the Canadian Society of Civil Engineers, and succeeded brother Tom as its president the following year. Samuel Keefer's illustrious career came to an end when he died in 1890.

Tom Keefer kept his engineering practice through the 1880s and 1890s, though he focussed more on real estate development and fighting with city council about the street railway. The one-time technology evangelist never tried to electrify the line; he sold it to the new Ottawa Electric Railway in 1891. After a long retirement in his beloved Rockcliffe Manor House, Thomas Coltrin Keefer died in January 1915, at age 93.

He never built a railway, but Tom's Philosophy of Railroads put them squarely on Canada's agenda. His elder brother did build railways; however, Samuel Keefer's greatest contribution was as the architect of a regulatory framework that protected Canadians for over a century. ▮

7. Sappers and Dufferin Bridges

Perhaps the only photo showing the work of both Keefer brothers. On the left, a horse car of Tom's Ottawa City Passenger Railway is seen heading west over Sappers Bridge. To its right we see Sam's 1873 Dufferin Bridge, and in the background the Parliament Buildings that nearly ended his career. The building in the centre is the Post Office. – Library and Archives Canada PA-012402 (detail) W. J. Topley photograph ca. 1878-1883.