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in Canadian Economic
History*

Harold A. Innis

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TRANSPORTATION AS A FACTOR IN
CANADIAN ECONOMIC HISTORY

H. A. INNIS

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Transportation has been of such basic importance to Canadian economic history that the title of this paper may appear redundant and inclusive. The paper is intended, however, as an attempt to consider the general position of transportation in Canada with special relation to its peculiar characteristics and their relationships to Canadian development, rather than to present a brief survey of Canadian economic history.

The early development of North America was dependent on the evolution of ships adapted to crossing the Atlantic. Water transportation^[1] which had been of first importance in the growth of European civilization had improved to the extent that, by the beginning of the sixteenth century, long voyages could be undertaken across the north Atlantic. These voyages were continued in relation to the acquisition of commodities for which a strong demand existed in Europe, and which were available in large quantities within short distances from the seaboard of the new countries. In the north Atlantic, cod was a commodity in the handling of which the advantages of water transportation were capitalized to the full. On the banks, ships from Europe caught and cured the fish in preparation for direct sale in the home market. By the end of the sixteenth century, following the opening of the Spanish market and the new demand for dried cod, ships from England and France developed dry fishing in Newfoundland, the remote parts of the Gulf such as Gaspé, and the New England shore.

Mr. Biggar has shown the relationship between dry fishing and the fur trade.^[2] Penetration to the interior brought Europeans in touch with the resources of the mainland. The continued overwhelming importance of water transportation for the development of the interior warrants a brief survey of the more important waterways and their characteristics. The course and volume of the waterways in the northeastern half of North America is largely determined by the geological background of the area. The Precambrian formation is in the form of an angle with one side pointing toward the northeast including northern Quebec and Labrador and bounded on the north by Hudson Straits, and the other to the northwest and bounded by the western Arctic. Hudson Bay constitutes a large portion of the territory in the angle. The resistant character of the formation and its relatively level topography have been responsible for a network of lakes and rivers. Its youthful appearance following the retreat of the ice sheets is shown in the number of rapids and obstructions to the tributaries and rivers. The major water courses flow roughly along the junction of the formation with later weaker formations, as in the St. Lawrence waterway which begins with the Great Lakes and flows northeast toward the Gulf, and the Mackenzie which

flows northwest toward the Arctic. The St. Lawrence is fed from the north by important tributaries, such as the Saguenay, the St. Maurice, and the Ottawa, which are separated by low heights of land from rivers flowing to Hudson Bay. The main waterway is broken by serious obstructions at Niagara and the St. Lawrence rapids above Montreal, and the tributaries have numerous rapids. The drainage basins to the south, the Mississippi, the Ohio, and the rivers of New York, are separated by comparatively low heights of land.

The energy of the Canadian people has been largely devoted to the task of overcoming the obstacles presented by these waterways and the task of this paper will be that of tracing in part the success with which that energy has been applied and the results of its application. In this sense it is an extension of the work of Miss Newbiggin.^[3]

The commodity, supplied by this vast stretch of northern Precambrian territory, and demanded by Europe, was fur. The sailing ships were restricted to the mouth of the St. Lawrence river, and the opening of trade on the river and its tributaries necessitated the use of pinnaces.^[4] Tadoussac became the first terminus, but was displaced by Quebec after the French became more familiar with the river channel to that point. The relatively level stretch of water from Quebec to Montreal was adapted to the use of large boats, and, with the improvement of the route, the depot shifted from Tadoussac to Quebec, to Three Rivers and thence to Montreal. In 1642 Montreal was established and the position of the French on this stretch of waterway consolidated. Beyond Montreal a third type of transport equipment—the canoe—became essential. The French were able to borrow directly from the equipment of the hunting Indians of the northern Precambrian area, and to adapt the transport unit, worked out by them, to their needs. With this unit French and English succeeded in bringing practically the whole of northern North America under tribute to the demands of the trade.

The canoe was adapted to the shorter Ottawa route to the upper country rather than to the longer and more difficult upper St. Lawrence and Great Lakes route. The trade of Georgian Bay, Green Bay on Lake Michigan, and Lake Superior was developed from this route to Montreal. Eventually La Vérendrye and his successors extended it northwest to Lake Winnipeg and the Saskatchewan. The limitations of the birch bark canoe, even after its enlargement and adaptation by the French, necessitated the establishment of depots for provisions at convenient points. Its labour costs were heavy.

The upper St. Lawrence and Great Lakes route was never developed as a satisfactory substitute by the French, and the difficulties of La Salle with Great Lakes transportation in its initial development characterized its later history. The problems of organization of the route were enhanced by the competition of the Dutch and English through the Iroquois and the Mohawk route to Oswego prior to 1722, and through direct trade after the establishment of Oswego in that year. As a result of this competition, the St. Lawrence and Great Lakes route involved a substantial drain on the trade. Posts were established at Frontenac, Niagara and Detroit as a means of checking English competition and the upkeep of these posts involved heavy expenses for the colony. Eventually Toronto was added in 1749 as a further check to Indian trade with the English. The shorter route to Oswego and the use of large boats on the lake were factors which seriously weakened the position of canoe transport on the Ottawa.

Only with the disappearance of the French after 1760 did it become possible to combine satisfactorily the upper St. Lawrence Great Lakes route for boats and vessels with the canoe route on the Ottawa. The lake boat became an ally to the canoe rather than an enemy. Heavy goods were carried by the lakes, and light goods were taken up and furs brought down by canoes. Cheaper supplies of provisions were available at Detroit and Niagara, and were carried at lower costs up the Lakes to Grand Portage and later to Fort William. Niagara portage was organized and a canal was built at Sault Ste Marie. With the organization of Great Lakes transport it became possible to extend the trade far beyond the limits reached by the French. The Northwest Company succeeded in penetrating from Fort William to Lake Winnipeg and the Saskatchewan, by Cumberland House and Frog Portage to the Churchill, by Methye Portage to Athabaska, the Peace and the Mackenzie, and by the passes across the Rockies to the upper Fraser and the Columbia. Supply depots were organized on the Red River, on the Saskatchewan, and on the Peace.

The efficiency of the canoe in serving as a transport unit from Montreal along the edge of the Canadian shield almost to the Arctic was dependent in part on the efficient organization of water transport along the Ottawa to Montreal, and on the Great Lakes. In 1821 this elaborate system collapsed and the canoe ceased to be a basic factor in transport. The boat again became an important factor in contributing to its failure, but from the north or Hudson Bay and not from the south. Ocean transport, in addition to supremacy of the Hudson Bay with boats in inland transport, proved of overwhelming importance in this.

Hudson Bay was developed as a trading area over fifty years later than the St. Lawrence basin and its growth depended largely on experience acquired in the St. Lawrence. Radisson and Groseilliers saw the possibility of tapping the trade from the centre of the Precambrian angle rather than from the outer edges. Accordingly ships were despatched to the mouths of the rivers flowing into James Bay and into Hudson Bay, and after the formation of the Hudson's Bay Company in 1670 the trade of the drainage basin began to flow toward the north. Ships were unable to visit the posts at the foot of James Bay because of the shallow character of the Bay and smaller boats were used to collect fur and distribute goods from a central depot on Charlton Island. On Hudson Bay ships were able to visit the mouths of the Nelson and the Churchill rivers. The tributaries of the Hudson Bay drainage basin flowing from the east and the south were similar to those on the opposite side of the height of land flowing toward the St. Lawrence. But the vast interior of the continent to the west poured its waters toward Hudson Bay and forced a main outlet across the Precambrian formation by the Nelson river. This outlet and its tributaries served as an entrance to the northwest from Hudson Bay. The advantages of the route were continually in evidence but were overcome temporarily by the canoe route under the French and under the English. With the use of the boat on this relatively short stretch the long line of the canoe route was cut in the centre, and after 1821 all goods for the west were taken in by York Factory and the Fort William route was abandoned. For over half a century the York boat and Hudson Bay dominated the transport of western Canada.^[5] Brigades were organized throughout the Hudson Bay drainage basin and across to the Churchill, the Athabaska, the Peace and the Mackenzie rivers.

Water transportation facilitated the exploitation of furs throughout the Precambrian area and beyond, but the efficiency of technique determined the routes to be used. The ocean ship to Quebec, the large boats to Montreal, the *canot de maitre* to Fort William, and the *canot du nord* to the interior, assisted in the later period by the vessels on the lakes, proved unable to withstand the competition from the ocean ship to Nelson and the York boat to the interior.

The comparative ease with which the transport unit was borrowed and adapted, or devised to meet the demands of the water routes, gave the waterways a position of dominant importance in the moulding of types of economic and political structure. Rapid exploitation of the available staple product over a wide area was inevitable. Undoubtedly the character of the water routes was of fundamental importance in shifting the attention of Canada to the production of staple raw materials. It became necessary to

concentrate energy on the transport of raw materials over long distances. The result was that the Canadian economic structure had the peculiar characteristics of areas dependent on staples—especially weakness in other lines of development, dependence on highly industrialized areas for markets and for supplies of manufactured goods and the dangers of fluctuations in the staple commodity. It had the effect, however, of giving changes of technique a position of strategic importance in fluctuations in economic activity. In one year transport to the west shifted from Montreal to Hudson Bay. The St. Lawrence basin flourished with the opening of trade to the west and languished when it was cut off. The legacy of the fur trade has been an organized transport over wide areas especially adapted for handling heavy manufactured goods going to the interior and for bringing out a light valuable commodity. The heavy one-way traffic made the trade discouraging to settlement and in turn made the trade a heavy drain on settlement. The main routes had been well organized to handle trade over vast areas.

The disappearance of fur from the St. Lawrence basin was accompanied by the rise of lumber as a staple export.^[6] The economy built up in such relation to fur and water transport was shifted to the second product available on a large scale chiefly from the Precambrian area. Lumber in contrast to fur was a heavy bulky commodity whether in the form of square timber, logs or deals, planks or boards, and consequently its transport on a large scale was confined to the larger tributaries and the main St. Lawrence route. The Ottawa and Upper St. Lawrence and Lake Ontario drained the most favourable areas for the growth of the large coniferous species, especially white pine. Rapid exploitation was limited to the softwoods which had a low specific gravity and could be floated down the rivers to Quebec. Lumber supplied its own method of conveyance and the evolution of rafts suitable to running the rapids of the lower Ottawa in 1806, and the rapids of the St. Lawrence at a later date, and finally the introduction of slides solved the problem of technique. Square timber was floated down the lower St. Lawrence to be stored near the tidal beach at Quebec in preparation for loading on wooden sailing ships for the protected markets of England.

The effects, on the economic development of the St. Lawrence basin, of dependence on lumber as a staple product were the opposite of the effects of dependence on fur. Whereas fur involved a heavy incoming cargo, lumber favoured a large return cargo and consequently provided a stimulus to immigration and settlement. The coffin ships of the lumber trade made an important contribution to the movement of immigrants which became prominent after 1820. The trade created a demand for labour and for

agricultural products. As in the case of fur it also created violent fluctuations in the economic activity of the colony, and its position as a raw material for construction made the St. Lawrence basin susceptible to an unusual extent to the effects of the business cycle.

The increase in settlement in Upper Canada after 1783 and the decline of the fur trade in 1821 raised serious problems for transportation above the Niagara peninsula and on Lake Ontario. As early as 1801 a Kentucky boat with 350 barrels of flour was sent down the St. Lawrence rapids with success^[7] and boats were used to an increasing extent to overcome the drawbacks of the route. A satisfactory outlet was obtained for goods going down stream but upstream traffic continued a serious problem.

The limitations of the St. Lawrence route were accentuated with the introduction of steam. The Industrial Revolution and its effects on transportation were destined to have a far-reaching influence on the economic history of Canada. Application of the new technique to a transport system adapted to the handling of raw materials on the existing waterways accentuated the influence of the waterways on the later development. The steamship was adapted first to the stretch of river between Montreal and Quebec and continued in operation after 1809. It served as a complement to the lumber trade and immigrants were taken upstream from Quebec without the inconvenience of a long upstream pull. The pressure from improved transportation to Montreal became evident in the increasing seriousness of the handicaps of the St. Lawrence rapids and the Great Lakes. Steamship communication on Lake Ontario was limited by the rapids of the St. Lawrence. Under these handicaps the competition of the Erie canal at Buffalo above Niagara, and of the Oswego route above the St. Lawrence rapids became important. An attempt to draw traffic from the Upper Lakes to the St. Lawrence river was made in the building of the Welland canal, with eight foot depth, completed in 1833. This improvement made increasingly necessary the improvement of the final link of the St. Lawrence rapids to Montreal. Eventually pressure from Upper Canada following the handicap of high costs on the upstream traffic of manufactured goods contributed in part to the rebellion of 1837, to the Durham Report, to the Act of Union and to a determined effort to build the St. Lawrence canals. These canals were completed to nine feet in the forties and lake steamers were able to go down regularly to Montreal after 1848.

It is important to emphasize at this point the relationship between the beginnings of the Industrial Revolution as seen in the application of steam to the St. Lawrence route, first from Quebec to Montreal, and later on the

Upper Lakes, and the consequent pressure which led to the building of canals. These developments involved essential dependence on the government as seen in the Act of Union and the energetic canal policy of the first ten years. The Welland canal was begun as a private enterprise but inadequate supplies of cheap capital necessitated purchase by the government.^[8] The relation between governmental activity and water transportation became an important factor in later developments.

The completion of the St. Lawrence route and the stimulus to settlement, industry and trade which, it occasioned intensified other limitations of the route. Moreover the delay in opening the route was responsible for rapid depreciation through obsolescence. Attempts to improve the St. Lawrence and compete with the Erie canal, and to attract the export trade of the Middle West, were defeated by the construction of American railways.^[9] The problem of offsetting the handicaps of the route by land transport began at an early date. In 1727 complaints were made that contrary winds were a serious cause of delay on the journey between Montreal and Quebec and by 1736 a road had been built along the north shore. Stage roads became necessary above Montreal and along the north shore of Lake Ontario to Toronto and west to Dundas and Western Ontario. The numerous ports along Lake Ontario became termini for roads to the back country.

This form of land transport, however, was far from adequate to meet the demands of trade and industry. Consequently the Grand Trunk was completed from Sarnia to Montreal in 1858. The old road from Toronto to Georgian Bay was abandoned with the completion of the Northern Railway from Toronto to Collingwood in 1854. Chicago and Lake Michigan traffic was captured by this route as well as traffic developed on Lake Superior by the Sault Ste. Marie Canal, completed in 1855. Finally the handicap of closed seasons for navigation on the Lower St. Lawrence disappeared with the completion of a short line through the Eastern Townships to Portland (1853), and of the Victoria bridge (1859). By 1860 the St. Lawrence had been amply supplemented by a network of railways. After 1863 the trials of the Allan line on the St. Lawrence route in the fifties were overcome and the ocean steamship became an increasingly powerful factor in the development of the route.^[10] Unfortunately the location of the Grand Trunk as a line supplementary to the St. Lawrence route left it exposed to competition from that route and it was brought to the verge of bankruptcy in 1857. The overwhelming importance of water transport was shown in the route followed by the Grand Trunk in tapping traffic areas built up on the St.

Lawrence. The completion of these early railways marked the beginning of the amphibian stage of transport history.

The cost of improving the St. Lawrence route in terms of canals and railways brought new problems to the Government. These problems with their solution were clearly presented by Alexander T. Galt in his reply to the Sheffield manufacturers in 1859:

Dependence could hardly be placed upon a revival of trade to restore the revenue to its former point: but this would afford no means of meeting the future railway and municipal payments; and parliament had to choose between a continued system of borrowing to meet deficiencies or an increase of taxation to such amount as might, with economy of administration in every branch of the public service, or a revival of trade, restore the equilibrium of income and expenditure. It is true that another course was open and that was, to exact the terms upon which the railway advances were made; and to leave the holders of the municipal bonds to collect their interest, under the strict letter of the law. By these steps Canada would certainly have relieved herself from the pressure of increased taxation, and might have escaped the reproaches of those who blame the increase of her custom's duties. But it would have been at the expense of the English capitalists and legislation; and it would have been but poor consolation for them to know, that, through their loss, Canada was able to admit British goods at 15 instead of 20 per cent.

He elaborated this statement three years later in a report on the Reciprocity Treaty with the United States:^[11]

The undersigned commences with two propositions which will not be denied: first, that the consumer, under all circumstances, pays the entire cost of the article he uses; and secondly, that his ability to buy depends upon the net results to him of his labor after its product has gone into consumption in any form. Assuming these points as necessarily conceded, it is evident that in a new unsettled country, such as Canada was, and to a certain extent, still is, without roads, without canals, without railroads, with an uncertain, long and perilous communication with Great Britain, the cost of British goods at the early settlement of the country was enhanced [*sic*] by the doubtful credit of its merchants, high ocean

freight, high insurance, heavy charges for lighterage, and finally after the goods reached Canada, by the enormous charges consequent on a trade conducted in the most primitive way, by the most primitive conveyances, and subject to the profits demanded by the numerous parties through whose hands it passed before it reached the ultimate consumer. Equally were the still more bulky articles produced and forwarded in payment for goods, subject to similar deduction. Consequently not very many years ago, the settler in Upper Canada, and in many parts of Lower Canada, paid the maximum for his goods and obtained the minimum for his produce.

It has been remarked that legitimate protection, which home manufacturers may enjoy, is that afforded by the cost of bringing foreign goods into competition. It must therefore be admitted that under the circumstances in which Canada was then placed, this legitimate protection was necessarily very large, and that British goods were at a very great disadvantage. In very many cases it may, with perfect truth, be stated that the cost of the goods imported was enhanced to the consumer one hundred per cent., and equally that he only obtained one half the ultimate price, or much less, of his produce in England. At the time to which reference is made, the duty on British goods, generally, was two and half per cent., but the price to the consumer was raised enormously by the causes referred to, and his means of purchase in an equally important degree diminished. Now, under these circumstances, it cannot admit of a doubt, that if by an increase of five per cent. on the duty, a reduction of ten per cent. on the other charges were produced, the benefit would accrue equally to the British manufacturer and to the consumer, and the indirect but legitimate protection to the home manufacturer would be diminished; the consumer would pay five per cent. more to the Government but ten per cent. less to the merchant and forwarder. In this illustration lies the whole explanation of the Canadian Customs. The Government has increased the duties for the purpose of enabling them to meet the interest on the public works necessary to reduce all the various charges upon the imports and exports of the country. Light houses have been built, the St. Lawrence has been deepened, and the canals constructed, to reduce the cost of inland navigation to a minimum. Railways have been assisted to give speed, safety and permanency to trade

interrupted by the severity of winter. All these improvements have been undertaken with the two fold object of diminishing the cost to the consumer of what he imports, and of increasing the *net* result of the labour of the country when finally realized in Great Britain. . .

(Signed) A. T. GALT,
Minister of Finance.

Finance department,
Quebec, 17th March, 1862.

Fiscal policy was therefore directly linked to problems of transportation, and it is scarcely necessary to add that the link has been a permanent one.

Fiscal policy became involved not only in the improvement of transportation by providing funds according to Galt's explanation but also in developing manufactures, trade and traffic. The development of industry contributed in turn to the growth of centres of large population and to an increase in traffic, a decrease in deficits and a lighter burden for the government. The demands of transportation improvements were reflected directly and indirectly in fiscal policy. The fixed charges involved, especially in canals and the improvement of water transportation and in railways led to a demand for new markets in the east and in the west. Expansion eastward and westward involved Confederation. The debates of the period suggest that the Intercolonial was not commercially feasible and that it was undertaken as a political measure, but it is difficult to conceive of its construction without reference to the demands for new markets. In any case the results were evident. An excellent line was built at heavy initial cost, as is the custom with government undertakings, heavy interest charges followed, the line was operated at a loss, and goods were carried at unremunerative rates from the larger industrial centre to the Maritimes. The industrial area of central Canada strengthened its position with cheap water transport and access to the coal of the United States and new markets were found in the Maritimes.

Sir Edward Watkin of the Grand Trunk regarded expansion to the west as the solution of its difficulties.^[12] The interest of Sir Hugh Allan in the early plans for expansion westward, which occasioned the Pacific Scandal, is significant of the continued importance attached to the development of traffic to the west in relation to the St. Lawrence route. The opening of the

Intercolonial in 1876 gave the Allan line a Canadian winter port at Halifax, and the deepening of the St. Lawrence ship channel from seventeen and a half feet in 1860 to twenty-two feet in 1878 and to twenty-seven and a half feet in 1887 completed an efficient ocean steamship connection to Montreal in summer and to Halifax in winter. The immediate effects were evident in such divergent results as the rapid growth of the live stock industry in central Canada, the rapid decline of the wooden sailing vessel, the displacement of Quebec by Montreal and the substitution of square timber by sawn lumber.

But of more striking importance was the demand for more rapid expansion westward to open markets for improved transport. From the standpoint of fiscal policy the outlay of capital in these improvements of transportation in canals and railroads contributed to the difficulties of the Mackenzie administration and its free trade policy in the depression of the seventies. The slow development of transportation to the west which followed from this policy was finally speeded up with the National Policy, which provided a guarantee of earnings on traffic carried within Canadian territory in case of success in keeping out goods and protecting the manufacturer, and a guarantee of revenue in case of failure to keep out goods with which to pay the deficit due to loss of traffic. The double barrelled effectiveness of the policy was enhanced by recovery from the depression and the energetic construction of the Canadian Pacific Railway. Subsidies in money and in land and further protection of east west traffic by the monopoly clause hastened the early completion of the line in 1885. It is only necessary to refer briefly to such additional developments as the establishment of the Pacific Ocean Services and the improvement of the line by the short line to St. John in 1890 and the construction of the Crow's Nest Pass railway after 1897.

The depression of the nineties was in part responsible for the delay in expected results, but the final expansion after 1900 was undoubtedly dependent on the deepening of the Sault Ste. Marie Canal to nineteen feet in 1895, of the Welland Canal to fourteen feet in 1887, of the St. Lawrence canals to the same depth by 1901 and the St. Lawrence ship channel to thirty feet by 1906. The efficient transport system built up around the St. Lawrence basin for the handling of wheat hastened the industrial development of eastern Canada, including the iron and steel industry of the Maritimes, contributed to the development of minerals, lumber and fish in British Columbia. Eastern Canada lost her position as an exporter of dairy products to England and became a producer largely for rapidly increasing urban population in the home market. Improved transportation followed by

the opening of the west was responsible for the period of marked prosperity from 1900 to 1914.

An important result of the dependence of staple products on transportation has been the suddenness of the changes which followed. The St. Lawrence canals were not available until the last lock had been built and then the whole route was opened. Again the rapidity of construction of the railway from Skagway to Whitehorse revolutionized the placer mining of the Yukon. These sudden and unpredictable results were particularly important in the rapid accumulation of revenue from the tariff after 1900 and in the unexpected profitableness of Canadian Pacific Railway operations. These developments contributed in turn to the construction of two other transcontinental lines, the Canadian Northern Railway by guaranteed government bonds, and the Grand Trunk Pacific by the construction of the National Transcontinental Railway. The results included bankruptcy, the Drayton-Acworth report of 1917, and the Canadian National Railways and its problems.^[13]

The railway network has spread beyond the St. Lawrence basin but no one can deny the pull of the Great Lakes in recognizing the failure of wheat to move over the National Transcontinental Railway to Quebec. Canada has become to an increasing extent amphibian but is still powerfully affected by the St. Lawrence basin. Nevertheless there are signs that the immense physical plan involved in transcontinental railways is beginning to have effects similar to those of the Northwest Company at the peak of its activities. The decline in importance of virgin natural resources has tended, with the railways as with the Northwest Company, to favour independent lines of growth. The Hudson Bay Railway, the opening of the Panama Canal, and the growth of trade through Vancouver to the Orient parallel the independent development on the Pacific coast and the supremacy of the Hudson Bay route in the fur trade. Even with the support of the industrial revolution there are signs in the growth of regionalism that the second unity of Canada is beginning to drift in the direction of the first and that the control of the St. Lawrence waterway is slightly but definitely on the ebb. The increasing strength of the provinces in contrast to the Dominion parallels the increasing importance of railroads and the staples dependent on railroads—minerals, pulp and paper. The seasonal fluctuations which characterize dependence on water transport tend to become less important with the continuous operation of industries linked to the railroads. The revolution which has followed the use of the gasoline engine as seen in the automobile, the tractor, the aeroplane, and the motor boat, and the opening of the north, appears to point in the same direction. We have been able to

change the winter to the open season, and with electricity the sources of early difficulties to transportation have been converted into sources of power. All these tendencies point to an emergence from the amphibian to the land stage.

It is difficult to summarize the importance of transportation as a factor in Canadian economic history. We can suggest however the overwhelming significance of the waterways and especially of the St. Lawrence. Cheap water transportation favoured the rapid exploitation of staples and dependence on more highly industrialized countries for finished products. It favoured the position of Canada as an exporter of staples to more highly industrialized areas in terms of fur, lumber and finally wheat, pulp and paper and minerals. The St. Lawrence was important in the establishment of British power in Canada by its possibilities from a naval and military point of view, but even more from the standpoint of providing a basis for the economic growth of the empire in the export of staple raw materials and the import of manufactured goods. We cannot in this paper describe the economic effects of dependence on these staple products other than to indicate the drain which they made in transportation costs on the energy of the community. We can suggest that each in its turn had its peculiar type of development and that each left its stamp on Canadian economic history. We can suggest that changes in technique, improvements in the waterways and in types of boats were responsible for rather violent fluctuations in economic development through the dependence on staple raw materials. It is scarcely necessary to describe the effects of dependence on water transportation on problems of finance involved in heavy expenditures and which led ultimately to subsidies and government ownership. Water transportation and dependence on staples have been responsible for a variety of heavy overhead costs. Dependence on staple products and the difficulties of the waterway probably delayed improvement of transportation on the one hand and hastened it on the other by permitting the borrowing of mature technique from the United States. Railroads built at a later stage of development were built more rapidly and the Canadian Pacific Railway was able to draw heavily on American experience in its early stage of development. Moreover depreciation through obsolescence in American transportation hastened Canadian development, and steamboats and captains displaced on the Mississippi by railroads moved up to the Red River, and the Saskatchewan, and the Fraser, as they did in turn in Canada from the Saskatchewan and the Fraser to the Mackenzie and the Yukon. The arrival of the first steamboat down the Red River to Winnipeg is surely the most dramatic event in Canadian economic history.

We have traced the evolution of transport in the fur trade which reached its height in the expansion from the St. Lawrence following the development of vessels on the Great Lakes in combination with canoes on the rivers. This transport system disappeared with competition from the York boat from Hudson Bay. The disappearance of the fur trade from the St. Lawrence was followed by the rise of the lumber trade. Lumber tended to emphasize the efficiency of down stream traffic on the large rivers, whereas fur tended to emphasize the efficiency of upstream traffic on smaller rivers. The growth of settlement which accompanied the development of the lumber trade led to a demand for efficient upstream transport. This demand became more effective with the introduction of steamboats on the St. Lawrence from Quebec to Montreal, and on Lake Ontario and the Upper Lakes, especially after the completion of the Welland Canal. Pressure from Upper Canada for improved upstream traffic led to the completion of the St. Lawrence canals by 1850.

The St. Lawrence route, as improved by canals, was further strengthened by the completion of the Grand Trunk Railway and its connections with the seaboard in the following decade. These developments, were in turn responsible for the completion of the Intercolonial to Halifax in 1876, and the deepening of the St. Lawrence to Montreal to 22 feet in 1878, and for the construction of the Canadian Pacific Railway completed in 1885. Finally the deepening of the Sault Ste. Marie, the Welland, the St. Lawrence canals, and the St. Lawrence ship channel paved the way for the opening of the west, the export of wheat, and the addition of two transcontinental railways.

Finally we have suggested the relationship between the importance of the St. Lawrence waterway and Canadian fiscal policy. The Act of Union was a prerequisite to the financial support adequate to completion of the St. Lawrence canals, and in turn Confederation was essential to the financial support necessary to round out the policy inaugurated in canals and supplementary railways, by further improvements and extensions to the east with the Intercolonial railway and to the west with the Canadian Pacific Railway. The policy necessary to provide financial support was outlined by Galt and whether or not his explanation was one of rationalization after the fact, or of original theoretical analysis, reliance on the customs was undoubtedly the only solution. In the main this policy provided the basis for the elaboration under the National Policy of 1878. According to Galt's argument the payment of duties actually reduced protection in so far as they were employed in reducing the costs of transportation on imports and exports. But the growing importance of railways, after the construction of the Intercolonial Railway, favoured the addition of the protection argument

as a means of increasing traffic, especially in manufactured products. The National Policy was designed not only to increase revenue from customs from the standpoint of the waterways but also to increase revenue from traffic from the standpoint of railways. The increasing importance of railways has tended to emphasize the position of protection rather than revenue.

We can trace in direct descent from the introduction of steam on the St. Lawrence waterways, the Act of Union, the completion of the St. Lawrence Canals, the Grand Trunk, Galt's statement, Confederation, the Intercolonial, the National Policy, the Canadian Pacific Railway, improved St. Lawrence canals, the new transcontinentals and the drift toward protection. The overwhelming importance of the St. Lawrence waterways^[14] has emphasized the production and export of raw materials, and in the case of wheat, the extraordinary effects of a protective tariff during a period of expansion contributed to the construction to two new transcontinentals, and to the emergence of the Canadian National Railways. The problem of the railways is essentially one of traffic to enable them to increase earnings without excessive cost to the producers of exports. The problem of protection is therefore that of increasing the traffic of manufactured goods and thereby increasing earnings, with the result that railroad costs may be decreased to the producers of raw materials to an amount equal to or more than the rise in the price of manufactured goods as a result of protection. Dependence on the application of mature technique, especially in transport, to virgin natural resources must steadily recede in importance as a basis for the tariff. It will become increasingly difficult to wield the tariff as a crude but effective weapon by which we have been able to obtain a share of our natural resources.

[1] *Vide S. A. Cudmore, History of the World's Commerce with Specific Relation to Canada* (Toronto: Pitman & Sons, 1929).

[2] H. P. Biggar, *Early Trading Companies of New France* (Toronto: University of Toronto, 1901).

[3] M. I. Newbiggin, *Canada, the Great River, the Lands and the Men* (London: Christophers, 1926).

[4] Champlain in 1608 went from Tadoussac to Quebec in

pinnaces.

- [5] Hudson's Bay Company Calendar.
- [6] *Vide* A. R. M. Lower, *The Lumber Trade to 1867*, Master's thesis, 1923, University of Toronto.
- [7] *John Askin Papers*, II, p. 343.
- [8] The Lachine Canal was also begun as a private enterprise. *Vide* J. L. MacDougall, *The Welland Canal to 1841*, Master's thesis, 1923, University of Toronto.
- [9] D. A. MacGibbon, *Railway Rates and the Canadian Railway Commission* (Boston: Houghton, Mifflin Co., 1917).
- [10] William Smith, *History of the British Post Office in British North America, 1639-1870* (Cambridge: Cambridge University Press, 1920), Chs. XVII-XVIII.
- [11] Report of the Minister of Finance on the Reciprocity Treaty with the United States, *Sessional Papers of the Legislative Assembly of the Province of Canada*, 1862, Sessional Paper No. 23.
- [12] Sir E. W. Watkin, *Canada and the States* (London: Ward, Lock & Co., 1887).
- [13] H. A. Innis, "Government Ownership in Canada," *Schriften für Sozialpolitik*, 1931.
- [14] The proposed improvement of the St. Lawrence waterways has not been given adequate consideration from the standpoint of the position of the St. Lawrence in the economic development of Canada. The valuable work done by antagonists and proponents of the scheme in terms of neatly calculated estimates has in the main tended to leave out of account the historical background and various incalculable items. This paper cannot undertake a detailed analysis but it does suggest that the

tremendous investments of capital built up around the St. Lawrence system in terms of ships, canals, terminal facilities, harbours and railroads, from the standpoint of the export of wheat from the west will suffer materially from drains in other directions. Improvement of the St. Lawrence will contribute toward reducing the overhead costs of these tremendous investments. The strains on the political and economic structure built up largely in relation to the St. Lawrence would be lessened accordingly.

TRANSCRIBER NOTES

Mis-spelled words and printer errors have been corrected. Where multiple spellings occur, majority use has been employed.

Punctuation has been maintained except where obvious printer errors occur.

Date of publication was added to the title page.

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