

MONTHLY REVIEW

THE BANK OF NOVA SCOTIA

Tall Masts and Square Timber

The Background of the Canadian Forest Industries

THROUGHOUT her history Canada has depended in extraordinary degree upon the export of a succession of products to more highly industrialized areas. So striking has been this dependence and so predominant in each particular period has been one particular "staple", that economic historians have found in the study of these products a key to the understanding of Canadian economic development.*

Until the transcontinental railway opened up the treeless Prairies of the West, these exports were largely products of the forest. The fur trade, which was dominant for two hundred years, depended indirectly upon the forests, for they were the habitat of fur-bearing animals. In the next century the trees themselves were turned to account. As the principal export the timber trade was short-lived, for after the middle of the century wheat and other farm products had become the major export from the St. Lawrence. Nevertheless farming followed the woodman's axe; for not until the trees had been felled could the fertile lands be tilled.

It is difficult, then, to exaggerate the importance of the forest to Canadian development. Even to-day lumbering

*The general reader will find in "An Economic History of Canada", by Mary Quayle Innis, an interesting example of this approach to Canadian history.

is still an important industry and the newest of the staples, pulp and paper, with its attendant hydro-electric power development, is based on the great northern spruce areas. We propose, therefore, in this issue of the MONTHLY REVIEW

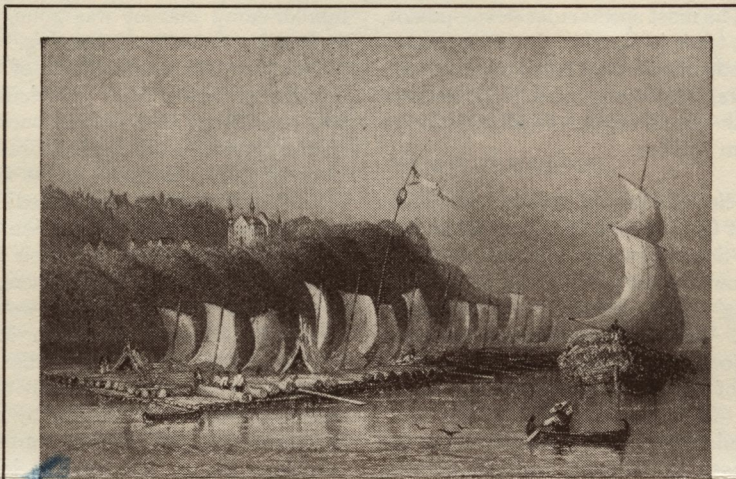
to sketch in the history of the lumber industry. The following issue will present an analysis of the industry during the recent years of depression and recovery.

Square Timber

IF ONE man can be called the "father of the Canadian timber trade" it is no less a person than Napoleon Bonaparte. By his attempt to crush England by cutting off her trade with Europe, he finally succeeded in stopping her vital imports of timber from the Baltic, long her chief source of supply. Without oak and other timber for shipbuilding and repair, without pines for the masts and spars so often shattered in battle, Britain's position would have been difficult indeed. Recourse to the timber supplies of the far-away British possessions was necessary. "Of

these Canada stood so far above the others that it can almost be said that Canadian pines and oaks sustained the Navy during its long struggle with the Napoleonic Empire".† It was this war-time need for naval supplies which brought into being the lumbering industry of Canada.

†R. G. Albion: "Forests and Sea Power".



TIMBER RAFT ON THE ST. LAWRENCE

This picture is reproduced from an old engraving by W. H. Bartlett, whose numerous drawings of early Canadian life are well-known to those interested in Canadiana. It is reprinted here from "Canadian Scenery", a collection of travel notes and pictures published in London by Virtue and Company, publishers, in the last century. The reader will note the many small sails and sweeps to help the raft over large expanses of water, and the hut on the surface of the raft in which the timber-drivers lived during the drive. On the right a "bateau" is shown, a characteristic feature of early transport on the St. Lawrence. The locality depicted is off Cape Santé.

*Key industry
Fast moving*

UP to this time, there had been a little trade in lumber from British North America—a few loads of masts were cut annually in Nova Scotia and New Brunswick, sawn lumber had begun to enter into the trade of Nova Scotia with the West Indies, and a little “Quebec yellow pine” had reached the British market. The long ocean journey with its heavy freight charges had precluded much development. But Britain needed timber badly. British timber firms, ousted from the Baltic trade, undertook to operate in Canada. They were not, however, willing to risk their capital—and a great deal was needed for such purposes—in developing a large lumber industry during the war if, at its close, that industry would no longer have an assured market, nor could they build up a trade on the basis of naval contracts alone. Thus, in order to protect their investment, they succeeded in the first fifteen years of the 1800’s in having successively higher duties placed on imports of foreign wood to Great Britain. So high were these tariffs, in fact, that at a later date it was found profitable to ship timber from the Baltic to Canada and thence back to England as Canadian produce! Under the shelter of this protection, which remained unchanged until 1842, the timber trade expanded tremendously and became the “staple of the Canadas”.

The trade developed with almost incredible rapidity during the war shortage. The British Customs Returns show that in 1799 New Brunswick shipped 763 masts; in 1811, 3,151; in 1799, only 278 loads of pine; in 1811, no less than 75,870. Similarly in Nova Scotia, masts rose from 11 to 842 and pine from 607 to 17,419 loads. The most spectacular development, however, was in the Quebec trade in timber. In 1799, Quebec had shipped 7 masts, 29 loads of pine and 1,069 loads of oak. At the end of twelve years, 23,053 masts, 52,888 loads of pine and 24,469 loads of oak—in all enough to fill 500 timber ships—crossed the seas from Quebec.

BEHIND these figures lies a story of human enterprise. Timber firms set up at Quebec and St. John and at first hired men to cut timber. Soon, however, the people began themselves to bring rafts down to the ports, often using them as a means of transporting wheat, potash, pork and other products of pioneer farms. The “timber factors” therefore soon confined themselves to buying timber but at the same time began, by a system of advances, the financing of the cutting operations.

Lumbering rapidly ascended the rivers—the St. John, the Miramichi, the St. Lawrence, the Richelieu and the Ottawa—for rivers and streams solved the transportation problems of this bulky commodity; on them it floated itself to market. The greatest source of supply was the “pineries” of the Ottawa Valley. Down the Ottawa and St. Lawrence rivers, Philemon Wright floated the first raft to Quebec in 1807, taking thirty-seven days for the trip. Timber-driving was hazardous and many lives were lost at first but “by 1805 the complete [St. Lawrence] river technique, the construction of rafts and the knowledge of the river’s channels, including the channels through the rapids, appears to have been mastered.”* When, in 1828, Ruggles Wright invented the timber slide by which falls could be avoided, and when steamboats for towing had been introduced on the Great Lakes, almost the last natural obstacle to the trade was overcome. (The remaining obstacle—lack of transport in areas far from the waterways—was only surmounted by the railroad.) How quickly the industry expanded may be judged by the fact that Lake Temiskaming, nearly 600 miles from Quebec, was reached by about 1835.

*A. R. M. Lower: “The Trade in Square Timber.”

The “Square-Timber Economy”

THE square timber industry reached its peak soon after 1860, but in the long period of its ascendancy it had deeply affected the economic life of the country. Not least important was its influence in populating Upper Canada. The timber-ships coming to Quebec in ballast, many of them so old and leaky that they were called “coffin ships”, provided cheap passage for immigrants. The newcomers arrived in successive waves, beginning in the ’20’s, the majority proceeding to the Upper Province to add to the nucleus of Loyalist and American settlers there. The trade also aided in establishing settlement, particularly in the Ottawa Valley, in another way: the lumber camps provided a cash market for grain, hay, pork, horses and other farm produce. As timber-cutters sought new areas, settlers followed close behind. Gourlay, in his quaint “History of the Ottawa Valley” says: “This [lumbering] made a market for produce, especially oats and hay. . . These were disposed of at the doors where raised or within a few miles. But afterwards, the farmers had to seek a market up the Ottawa, Madawaska, Bonnechere and elsewhere and drive with teams in Winter, requiring from a week to three weeks for the go and return, but it paid them for the prices were good. This market is no more as it diminishes yearly and the settlers near the limits can supply the demand”. In the last sentence he touches on one of the ill effects of the industry, the fostering of settlement in some areas which, when the transient lumber-camp market was gone, were not suited by soil or geography to ordinary farming.

Nor were the social effects of the trade open to objection on this ground alone. Particularly in New Brunswick it was considered that it held back agricultural advancement. As the Report of the Agricultural Society of Northumberland County (N.B.) italicizes in its first report, 1852: “The fact is that our farmers (so called) never before looked upon farming as their sole occupation or that by which they were to sustain themselves and their families. Some were *fishing* farmers, more *lumbering* farmers, and even *stevedore, logging* or *hired out* farmers; but few were really and truly *farmers*”. Similarly, Captain Moorsom in his “Letters from Nova Scotia” (1830) says: “The timber trade may rather be termed a necessary evil than a benefit to a young country. . . The farmer is frequently tempted by his first little gains to engage in ‘lumbering’, or cutting timber. He lives a severe and laborious life in the forests; he flatters himself with the prospect of realizing a considerable sum in a few years; the timber market falls in England; he finds himself overwhelmed with debt and has to work his way again from his first potato plot. I know many fertile spots in the Province [New Brunswick] that have hitherto lain in almost wilderness state merely owing to the lumbering mania that has affected those who settled on them”.

Lumbering and farming seemed compatible enough; working in the bush occupied men and horses during the long winter months when work on the land was impossible. The Spring “drive”, however, was apt to keep the farmer from his ploughing and sowing. A commentator of the time put it thus: “Farmers have forsaken the ease and immunity which they might enjoy during the most inclement season of the year and have spent the winter campaigning in the forests; while in the Spring, when they should be clearing and preparing their land they are engaged in floating their timber down the rivers to the neglect of farming operations”. An early American ballad, “Driving Saw-logs on the Plover”, gives this advice to young men: “Far better for you to help your Dad to sow his corn and hay, than to drive saw-logs

on the Plover—and you'll never get your pay", and again, "You had better work upon the farm, for half a dollar a day, than to drive saw-logs on the Plover"—with the minor refrain repeated "and you'll never get your pay".

It was this aspect of the industry—its highly speculative character and the great fluctuations in income derived from it—which had the most serious effects on the economy. Depending on the volatile construction industries of a distant market, periods of over-production and low prices were quite frequent. It was, indeed, no trade for the small man. This was the real explanation of the lack of success of the farmer-lumberman of New Brunswick, but he continued to present a problem until the middle of the century. By that time the shortage of easily available big timber made it easier for him to put aside hopes of "the speedy realization of great wealth", as a contemporary phrased it, and leave lumbering to the saw-milling companies. On the Ottawa, farmers never tried, to such an extent, to prosecute the trade themselves. But they felt the booms and depressions in the industry indirectly, in the unstable demand for farm products on the part of the lumber camps.

In spite of all this, the square timber industry built the Canadian economy. The returns from it provided capital for canals, roads, railroads, sawmills and the other equipment which a new country must obtain. It fostered immigration, provided employment and transformed Quebec and St. John into great mercantile centres. Moreover, it was a trade so picturesque that it seizes upon the imagination and has left us a valuable tradition. The skill with which the great trees were felled and squared with the broad axe alone cannot but arouse admiration. "We helped to square one over 73 feet long, 24 by 25 inches and we have seen larger than this one", says Gourlay. Hugh Gray, writing from Canada in 1807, tells of mast pine "brought down to Quebec 120 feet in length and about four feet in diameter". The rough, wild life of the shantymen and river-drivers, much as it was deplored, provides many a tale of heroism. Nor did these men lack defenders, even in their own day. "In the conceited towns . . . they fancy that the wood-cutter from the wilderness should be made up of nods and smiles, starches and ruffles, like their dear affected selves, never thinking he is a creature by himself, like the sailor, bred amid dangers and difficulties, and made somewhat roguish by the sharking rogues of the cities". In Quebec, the busy port which was the end of the raftsmen's journey, he was also apparently not unpopular, at least according to his own songs.

"I had not been in Quebec for weeks 'twas scarcely three,
When the landlord's lovely daughter, she fell in love
with me.

She told me that she loved me and took me by the hand,
And shyly told her mamma that she loved a shanty-man".

The mothers of Quebec were not so enthusiastic, however:
"Oh daughter, dearest daughter, you grieve my heart
full sore,

To fall in love with a shanty-man you never saw before".

Writing of Quebec in the 1850's, an English visitor said: "It is one of the greatest sights in America, to behold from some eminence in the neighbourhood, the acres upon acres of squared pine, oak and elm logs, which the coves present". He commented wonderingly on "five or six hundred ships at the same moment stowing away in their capacious insides whole rafts of immense logs". It was, indeed, this great shipping activity that developed another important industry, the building of ships. "The forests provided the material for the ship and the major part of the cargo also".*

*Frederick William Wallace: "Wooden Ships and Iron Men".

Shipbuilding

IN Quebec and its immediate vicinity and in hundreds of big and little ports of the Maritimes, shipbuilding began in the 1820's to be a major occupation. In Nova Scotia, the home of a seafaring people, these ships were more often for the builder-owner's use, particularly in the West Indies trade. Not until after 1840 were many ships made for sale abroad. The cheap soft-wood ships of Quebec and New Brunswick, however, commanded a ready market in Great Britain for use in the timber trade and elsewhere. (The discovery of gold in Australia, for instance, brought a boom in the construction of ships to transport the gold-seekers.) "Although shipbuilding, like lumbering, is subject in a measure to the fluctuations of the English market, yet it differs from that pursuit in having a wider field for its market" wrote Monroe in his "New Brunswick" (1855). Canadian ships and, indeed, Canadian owners and crews, became known on the seven seas.

Shipbuilding reached its peak in Quebec in the '60's and in the Maritimes in the '70's. It declined rapidly thereafter as the iron steamship ousted wooden ships from the world's trade, thereby dealing a severe blow to the Maritime Provinces. In the records of this Bank, which from its inception in 1832 naturally had an intimate connection with these major trades of the Maritimes, may be traced the final days of a great industry. Even in 1883, however, it is surprising how many of the Bank's customers in certain Branches had been "building a vessel during the Winter", "are doing very well and are starting to build another vessel" or "is now building the third schooner since May last". Perhaps the beginning of the end was presaged in this entry: "Is contemplating building another vessel but is not yet decided".

Sawn Lumber

THE coming of the iron steamship also hastened the decline of the square timber trade and the rise of sawn lumber. Small lumber mills, dependent on water power, had, of course, been a necessary part of every pioneer settlement. Except in Nova Scotia, however, where the local mills began very early to sell their product in the West Indies, there had been no large outside market and only a small domestic one. With the opening of the Erie, Welland and Rideau canals, the westward expansion of the United States and the exhaustion of trees large enough for square timber, mills began to cut boards for export to the United States. At the same time, importers in Great Britain slowly began to lose their prejudice against any wood other than square timber and took "deals", the semi-manufactured product, large soft-wood planks three or four inches thick. Not until after Confederation, however, did exports of deals exceed those of square timber to the British market. By that time there was little pine of sufficient size for timber even in the newer areas and in the Maritimes it had long been very scarce.

The new trade was stimulated when, at the end of the '30's, it became apparent that the protective tariff in Britain must soon come to an end. The possibilities of the United States market began to be explored quite vigorously and, a little later, American capital, seeking out supplies, began to build lumber mills in Canada. (E. B. Eddy, for instance, came to Ottawa from the United States in 1852.) The coming of the railways accelerated the process immensely, opening up new sources of supply and aiding in the establishment of steam mills closer to the limits. Thus the Ottawa and Prescott railway, opened in 1854, the Cobourg to Peterborough, 1854, the Port Hope to Lindsay, 1854, and particularly the Northern Railway, put through from Toronto to Lake Simcoe and

thence to Georgian Bay in 1853 to 1855, greatly aided the industry. Of the latter it has been said that "on its way north it literally sprouted mills".

The sharp reduction in the British preferential duties during Sir Robert Peel's ministry, paralleling the repeal of the Corn Laws, brought them to merely nominal levels by 1850. This coincided with a falling-off in the demand for lumber in Britain owing to the collapse of a railroad-building boom. Nevertheless, after a severe slump, the Canadian industry soon proved that it could, when demand improved, compete successfully in the British market. The trend toward the sawn lumber trade with the United States was accentuated by this loss of protection, however, and it was continued by the Reciprocity Treaty, the Civil War demand, and the great industrial expansion of the Eastern United States after the post-war depression. At the same time the domestic market for lumber was expanding rapidly. Railroad-building brought not only a direct demand for ties and other products but, by promoting the growth of urban centres, it gave rise to numerous other needs for lumber. The population figures for Upper and Lower Canada, which rose by more than 70% from 1851 to 1871, are an index of this increasing demand.

British Columbia

MEANWHILE, across the continent, in British Columbia, the great forests of Douglas fir were beginning to be exploited. The discovery of gold on the Fraser in 1858 brought a rush of population, which resulted in the establishment of sawmills. Gradually, in the '60's a small export trade was established. It was the coming of the Canadian Pacific railroad, however, that gave the great impetus to the industry. Beginning in 1880, the demands from its construction caused a large amount of wood to be cut for ties and bridge timber. Its completion, opening up the Prairie market, was the real factor which developed the industry. From 1888 to 1894, the capacity of British-Columbia mills more than doubled and again doubled by 1900. With the heavy immigration to the Prairies during the first decade of the century came a tremendous increase in the demand for British-Columbia lumber. It is estimated that the total commercial cut during these ten years amounted to about 4,800 million board feet, about four times as great as in the previous decade and nearly twice as great as the whole cut in the last fifty years of the previous century.

Since this increase was absorbed by the Prairie market, water shipments did not greatly expand. With the drying up of immigration just preceding the Great War, it was necessary to seek other outlets, but lack of shipping during the War made this difficult indeed. For this reason, too, advantage could not be taken of the opening of the Panama canal in 1915. After the War, however, with plentiful ocean tonnage seeking employment and the consequent reduction in freight rates, the Atlantic coast of the United States became an important market for British-Columbia lumber. By 1923 it was taking nearly three-fifths of the total of water-borne exports and perhaps a fifth of the total cut.

This was, of course, an invasion of markets hitherto enjoyed by eastern mills. In the Maritime Provinces the mills were already finding themselves handicapped by a growing scarcity of large saw-timber and the heavier costs which this involved. It may be said, then, that the great development of the pulp and paper industry, which was the feature of the post-war decade, was particularly opportune. Using small-dimension spruce and other timber, it utilized the remaining resources of areas where the industry was declining and also the virgin stands of the smaller trees of the north.

Pulp and Paper

THE pulp and paper industry was not, it is true, purely a post-war development. The first ground-wood pulp mill was built as early as 1866 and the same year saw the establishment in Canada of the chemical process of making pulp for paper, both in Quebec Province. By the end of the century, the industry was well established and it expanded steadily during the next fifteen years. It was the perfecting of hydro-electric techniques immediately before and after the War, however, which made possible the extraordinary progress of the post-war decade. To this factor must be added the increasing demand for newsprint in the United States and the growing shortage of pulpwood supplies in that country, as well as the substantial amount of foreign and domestic capital available for investment in Canada during the boom years of the 1920's. From 1920 to 1929, the production of newsprint nearly tripled.

What this meant in terms of northern development, the hydro-electric industry, railroad traffic and settlement in the northern areas is too long a story to be recounted here. Unfortunately, too, a rather large part of the history of this comparatively new industry belongs to the years of difficulty and depression, and thus to the following issue of the MONTHLY REVIEW. It has been suggested, however, that the industry presents greater possibilities of permanence and of stability, particularly in that it is less seasonal, than did its predecessors. Professor A. R. M. Lower, a student of the industry to whose published and unpublished works this study is greatly indebted, writes as follows: "Its [lumbering's] monuments were too often mouldering mills, deserted villages, and a derelict and hopeless population marooned in the backwoods. While the pulp and paper industry has not necessarily rejuvenated such regions, it has enormously extended the area of forest exploitation and, by reason of the technical intricacy of its processes and their large scale, it has created establishments of such a size and involving so much capital that few people are willing to think of them as evanescent... Consequently, the chances for their becoming permanent are very much better".

This depends, as Professor Lower points out, on forest policy. "In the spruce forests of the north, there is a supply of material, certainly not inexhaustible, but one large enough to take care in perpetuity, if properly looked after and conserved, of an industry somewhat larger than now exists". Methods have undoubtedly been wasteful in the past. Square-timber making, for instance, using only the centre of the largest and straightest trees, left behind it great areas of slash and felled trees. In the early hand-logging days in British Columbia it is estimated that 40% of the logs cut did not even reach the water. The fire menace resulting from such methods has deforested millions of acres.

Settlement of areas fit only for forestry is another way in which resources have been wasted. All these problems are now being attacked in one way or another by Dominion and Provincial forest policy. It is to be hoped that through these and the efforts of individuals and corporations themselves Canada may be enabled to retain her forest industries "in perpetuity", for they have contributed much to building the Canada we know to-day.

As was stated in the REVIEW, this number will be followed next month by a study of the lumber and pulp and paper industries of the present day. It will treat particularly of the years of depression and subsequent recovery and will be based more largely upon statistical material.