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HAULING OUT LOGS ON A NEW BRUNSWICK TIMBER LIMIT

A GLIMPSE OF THE ANNUAL LOG HARVEST THAT PAYS INTO NEW BRUNSWICK'S TREASURY OVER HALF A MILLION DOLLARS A YEAR

The Case for New Brunswick's Forests

BY

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(NOTE:—The Canadian Forestry Association has no affiliation with any Government or commercial interests. It comprises 5700 Canadian citizens, concerned in forest conservation as a public policy of prime importance. A substantial portion of the membership is resident in the Maritime Provinces.)

WERE the whole of the Dominion of Canada inventoried after the manner of a personal estate, we would see five great natural endowments set forth in the order of their present day value:—

Agricultural Land
The Forests
The Mines
The Fisheries
The Water Powers.

From lands, forests and fisheries, the industry of man has taken toll for more than three hundred years. At first content to realise from the land merely the food, clothing and fuel of a family, improved facilities for trade and growth of population gradually reared a more complex commercial machinery until in most parts of the Dominion the raw materials of field and forest, mine and waters, can be sent forth today in a completely manufactured state. The natural resources themselves, however, remain the foundation of practically all human activity. Towns and cities are built upon faith in their inexhaustibility. Transportation lines have been directed into almost every corner of the country to turn these resources to general profit. Export trade with lands less generously endowed has grown to great volume.

In the days when the geographical bulk of the Dominion—so much of it unexplored and unassessed as to values—gave rise to prophecies of fabulous wealth, it was not surprising that the public should be blinded to the possibilities of depletion of mines or timberlands. Prognostications of inexhaustible resources in Ungava and about Hudson's Bay, in Labrador, and other sections of which accurate information was lacking, created an over-confident state of mind readily assenting to incalculable losses from forest fires and to the damaging of other public resources regardless of the almost certain protests of the generations to follow.

The State and the Natural Resources. Canada fortunately has progressed beyond the doctrine of "look-out-for-yourself." At no time has the consciousness of a duty owed by the individual to the state, of the obligation of a Government to prepare for the future, been so deeply impressed as during this period of Canada's history. Public

conviction and administrative policies are recognizing with startling frankness the duty of the State in managing not only armies of men, but the resources of the country on the most scientific far-sighted plan.

The care of forests in every province of Canada is the direct and undisputed responsibility of Governments. In New Brunswick, where provincial ownership of the forests has effect, the Government is to the fullest degree the trustee and steward of the 7,500,000 acres of Crown Lands, largely forest covered. While the province has undoubtedly followed the neglectful trend of almost all other parts of North America during the past fifty years, the ruin of so much of the forest inheritance by fire is attributable in the main, not so much to the various political administrations, as to a lack of public knowledge and concern.

In whatever way we dispose of responsibility, the penalty must be faced. It is not in the desire of any good citizen to pass along old-fashioned mistakes unremedied. The Director of the Forest Survey of New Brunswick estimates that lack of adequate forest fire protection has, during the past forty years, resulted in the destruction of standing timber which, had it been manufactured instead of burned, would have represented a sale value of no less a sum than \$80,000,000. In other words, the price of neglect is now being paid in a hampered industrial development, reduction of employment, capital turned elsewhere and the public's share of timber revenues cut down.

New Brunswick's Forest Foundation—The It would appear, therefore that forest conservation is emphatically *public business*. While it is true that

a larger proportion of New Brunswick's Crown Lands, than of other provinces except Nova Scotia, has been granted outright, nevertheless there remains under the Crown, 7,500,000 acres (mostly under license) averaging as good timber contents as are to be found in the province. This area, about the size of Belgium, represents, with farm land, the chief natural endowment of the province. It represents the future source of raw materials not only for the hundreds of wood-using industries in existence today (needing two hundred million feet of raw material a year for the Maritime Provinces alone,) but is the main hope of attracting scores of new wood-using factories, increasing employment, developing farms, towns, and cities and providing new revenues for the public treasury without resort to direct taxation.

No longer is the forest to be identified with the "wilderness." It has come to be regarded in all progressive lands as one of the most vital and valuable portions of the people's estate. No longer does the farmer look upon tree-covered areas as necessarily impeding the progress of agriculture. He knows, sometimes by hard personal experience, that by far the greater part of New Brunswick is limited by nature to the growing of trees. Soil, climate, and topographic conditions together render more than two-thirds of all Canada unable to produce field crops. In Quebec, for example, out of a total area of 210 million acres, less than 9 millions are under farm cultivation. The balance is either permanent barrens or must for the greater part be retained for all time under timber. Undeveloped agricultural areas, like the Clay Belt, constitute the exceptions, but such areas comprise but an exceedingly small proportion

of the unalienated Crown lands. Similarly, Ontario will probably always have not more than one third of its total area fit for the plow. This happens to be a balance fixed by nature and the part of wisdom is to realise not only from the tillable lands, but the huge untillable areas every dollar of profit that may be derived.

**Sweden's
\$5,000,000 Forest
Income for
Public Treasury.**

An interesting illustration is afforded by Sweden. Its latitude is much higher than that of New Brunswick while it is six times greater in area. Sweden realized early that the eggs of prosperity are not carried necessarily in the one basket of agriculture. Enormous forests, growing on soil no better than New Brunswick's, within short reach of the European timber markets, promised splendid returns if properly managed. "Proper management" of course meant, not the hit-or-miss exploitation that characterizes so much of Canada's forest development, but scientific care in the growing and harvesting of timber as a crop. What the yield of a given area would be fifty years hence was of more importance than the catching of a momentary profit. Fire, the arch enemy of forests, was met and overcome. Fire, indeed, has in the main, been successfully excluded from the great forests of Europe for from fifty to one hundred years. Conservation and good forest management are meaningless terms as long as the plague of flames sweeps off in a week more than the constructive forester can accomplish in ten years. Today, Sweden is taking from her forests, as the dividends of fire protection and sensible development (and without impairing the precious "capital stock" of timber as New Brunswick does,) no less a sum than \$100,000,000 a year, representing the value of wood and its manufactures. *The share taken by the public treasury is no less than \$5,000,000 a year.*

**What the Tree
does for
New Brunswick.**

One does not need, however, to cross the oceans to learn what forests accomplish for the enrichment of a people. In a twelve month the sum of \$15,000,000 is distributed in New Brunswick from lumber and pulp products. Another million dollars worth of wood is used by settlers for fuel and building materials. The Government of New Brunswick gains over \$500,000 a year from various Crown timber taxes to ease the burden that must otherwise be placed on the public for administration expenses. This sum will be materially increased as the result of recent re-adjustments of the dues on Crown timber. The forests of the province are producing wealth each year within about four million dollars of the whole value of agricultural production.

**Only untillable
Soil is needed
for this Crop.**

The timberman asks only *non-agricultural* soil for his wood crop and every million dollars brought to the province by timber means an increased demand for everything the farmer has to sell. One cannot emphasize too strongly that more than seventy per cent. of the land area of New Brunswick will never pay a profit to the plow. From the wood crops of that seventy per cent the province must take its chief share of future prosperity.

Contrary to a prevalent impression, forests, under modern lumbering conditions and with free access to fire, do not perpetuate themselves, except in part and that very unsatisfactorily and with extreme slowness

Nature uncontrolled is usually wasteful in her methods. Each decade has found the forest possessions of New Brunswick and other parts of Canada substantially weaker. Logged-over tracts are too often preyed upon by fire, and, even with fire kept out, the logging methods now in vogue encourage the growth of inferior species. As an illustration of this condition, white pine, the most valuable of Canadian timber trees, has been almost obliterated from New Brunswick's lumbering industry, although in the year 1825 no less than 400,000 tons of white pine were exported from New Brunswick to England. Once the standard species in New Brunswick, it represents today, not more than five or six per cent. of the total lumber cut of the province. Hemlock, little valued yesterday, except for bark, now commands \$8.00 to \$10.00 per thousand board feet rafted at the booms. Spruce, now heading the market for saw timber and for paper making was regarded almost a weed tree within the experience of lumber operators now living, and has so advanced in value as to bring in 1917, \$13.00 to \$20.00 a thousand board feet wholesale, and \$9.00 to \$12.00 per cord F.O.B. for settlers' pulp wood. The spruce log is the standard in New Brunswick woods operations, the commercial timbers ranging in this order: Spruce, Fir, Cedar, Hemlock, Pine, Birch, Beech, Maple.

The new world values of Maritime Forests Thus, within the past ten years or less, a new and increased valuation has been placed by the markets of the world on the forest assets of New Brunswick. The relatively slight value of a birch stand today is no more a gauge necessarily of what it will be tomorrow, than was true of the early price of spruce and hemlock. So with every other tree species now within the provincial boundaries. The world's wood consumption is increasing enormously. The discovery of new methods of utilising what are now nearly useless woods, is making remarkable advances, and certainly has many surprises in store. Coupled with these facts must be considered the exhaustion of cheap, accessible forests and the rapid deterioration of what were recently virgin areas of timber. The supply grows less. The demand grows greater. It is for New Brunswick, therefore, to take full toll of every square mile of her forest possessions, to realise from the markets of the world such tremendous profits as have accrued to Sweden and other European countries as well as to some of our Canadian provinces that are awake to the advantages of a great timber endowment.

Clearly, no private corporation or association of companies or individuals can undertake the task of inventorying the timber possessions of the province, and establishing a permanent policy of protection and development. That is a Government function for more reasons than one. The long-time element involved in the growing of trees is beyond the administrative reach of any but a self-perpetuated institution such as the State. The financial profits of even the wisest forest policy cannot be checked up week by week as with certain outlays for agriculture or fisheries or roads, but at the same time no resource responds more surely or generously to preservative measures than the forest.

Looking into the New Brunswick has now under way the first great Provincial Store-house. step in building up a permanent policy in respect to its forests. The Forest Survey and Land Classification, which now has been under way for about a year and a half, had covered by May 15, 1917, more than 550,000 acres, out of a total of 7,500,000 acres of Crown lands. Not only will the province get knowledge of the location and contents of its forests land, the amount and kind of reproduction, and rate of growth, but will be given an accurate soil map, whereby future settlement may be directed intelligently. The project will occupy several more years and is equivalent to a provincial stock-taking, a highly important element in any progressive and constructive policy.

With public opinion heartily endorsing the continuance of the Forest Survey, the next step, obviously, is to employ the information so secured in the best interests of the people of the province.

Few men acquainted with New Brunswick or Quebec or Ontario woods operations will contend that the present rate of cutting can be continued indefinitely, unless present cutting *methods* are materially changed.

What are the faults of these methods? In what way do they hamper the natural re-growth of a tract from which logs are being taken?

In practically all Government regulations covering Crown timber, certain provisions have been inserted aiming to guide the cutting so that the forest area may be kept permanently productive. One of these provisions specified that trees below a certain diameter shall not be felled, except a few for skids, or those blocking a road route. For example, the New Brunswick regulations stipulate that 'no spruce tree shall be cut on licensed lands unless it will provide a log 12½ inches or over, stump measurement. Few will assert that this regulation in itself is sufficient or that the Provincial Government is able with its present machinery to give it more than formal enforcement. And yet on the *regulating* of cutting by a minimum "diameter" provision *and other safeguards*, dictated by long experience, the future security of every lumber and pulp mill and the bulk of the employment in the province rests.

If the provincial storehouse of wood materials is to be handled on the basis of permanent production, every form of needless waste must be eliminated. The cutting of stumps almost breast high cannot be condoned in these days of timber scarcity and rising values. The jobber who skims off his tract, leaving lodged trees to rot, who abandons patches of trees that are slightly inconvenient to reach, who uses good spruce logs for his roads and skidways when inferior logs are ready to hand, who refuses to utilize as much of the top as he might properly do, is not concerned in anything more than a hand-to-mouth policy. What the *permanent* interests of New Brunswick may be, can appeal to him only by reasonable regulations rigidly enforced by Provincial officers. The Province has an interest in its forests extending generations ahead and having regard not to one class alone, but the whole people.

A sensible code for Forest Management. What would be the aim of a Provincial Forest Branch of technical foresters, having authority to carry out public regulations, as they exist or may be amended?

To secure a high production of valuable material and pay to the private owner and the state the largest possible returns in the long run. As stated by Henry S. Graves, Chief of the United States Forest Service, the objects of scientific forestry are:—

“To secure quick reproduction after the removal of timber.

“To produce valuable species instead of those having little or no market value.

“To secure a full stock in contrast to those of small yield.

“To produce trees of good form and quality.

“To accomplish the most rapid growth compatible with a full stand and good quality.”

—a code of business-like objects, the gradual adoption of which in New Brunswick will arrest the impoverishing tendencies of present-day woods methods and develop rather than undermine the mainstay of prosperity.

What makes a Limit Valuable? Unlike some jobbers, who have no permanent investment in a forest tract, and have no industries dependent upon a source of accessible supplies, the licensee himself will in most cases heartily support whatever means will keep his limits in continuously productive condition. His interests are industrial. The speculative era in timber has passed. His mills must be fed with logs or go bankrupt. To him the value of the limits lies not altogether in their present cubic contents of timber, but also in *their ability to repeat their crops*. In that last phrase lies the crux of the argument for a more determined and intelligent public supervision of cutting operations. *Timber crops are not repeated*, except at a heavy discount and very slowly, as cutting methods now are allowed to exist. The operator, therefore, is in a position where only the rising market value of Spruce enables him to count his limit at a higher price, for the quantity of timber on cut-over tracts at each successive culling grows actually less, and the interval of delay grows longer; growth in the forest is slower than many believe.

Because one lumber firm has been able to take off successively from one district profitable quantities of timber and pulpwood during a period of, say, sixty years, does not necessarily signify that it is reaping *only the increment* of forest growth. Usually the history of a New Brunswick limit is in some such sequence as this:—

The limit was worked for the choicest pine.

Then came a second and third culling of pine, a more complete and drastic operation, leaving relatively little of that species.

Next, the operator took out the largest spruce of saw timber size. At each return he cut what previously would have been passed over. With the biggest stuff already marketed he proceeded to shave the diameter limit closer. Finally the market for pulpwood made it worth while to take out spruce and balsam down to the smallest legal diameter. Obviously the timber limit was producing for the market more than its

natural increment. It was giving not alone the increment, but much of the capital stock as well; in the case of pine the larger part of the capital has gone. As time passed, logs in the driving streams appeared smaller and smaller. The capacity of that area for periodical production had seriously declined.

A notable consequence of severe culling of coniferous species has been to encourage the growth of hardwoods. The transition has been a money-loser from every standpoint. The great woods of commercial demand are coniferous—spruce, pine, hemlock, etc., and the great lumbering and pulp making industries of the province of New Brunswick cannot be maintained on other than coniferous forests.

Getting rid of the fire-plague. Under the proposed New Brunswick Forest Service should come the control of the fire ranging force.

Until fire is eliminated, 'Conservation of the forests' can make no real headway. One may as well attempt efficiency by painting the lifeboats of a ship and building watertight bulkheads while the hull itself is perforated with decay.

The Director of the Forest Survey has stated that of the 550,000 acres examined, 82,270 acres have been burned by fires of fairly recent date. Had this area not been burned over, there would have been, besides the amount already taken out from time to time, merchantable timber standing on those tracts today worth at least \$714,000. This figure applies to only one-thirteenth of the whole area to be examined.

Closing out a costly record. Let us consider not the question of culpability for losses sustained in the past, but rather how New Brunswick can bring that record to a close.

The success of any fire protection arrangement rests, first, upon organization. New Brunswick's laws provide for the appointment of a Chief Fire Warden. Under him are fifteen county wardens who have a varying number of deputies. In some counties the deputies are paid a fixed sum annually, and in others they are remunerated on the per diem basis.

By this system, 160 men, on an average, are on the Government pay roll as permanent wardens. They look after fire protection and game during the spring and summer, and game protection during the fall and winter.

The fire wardens, responsible for timber guarding, receive remuneration varying in amount and form of payment from \$2.00 a day to \$250.00 a year, a few at \$300.00, with some county wardens receiving up to \$900.00 a year. The average amount received last year per man was about \$52.00. For such pay no body of men can be expected to render more than intermittent service or to undertake arduous patrol, or to go far afield in search of fires. British Columbia this year, is paying its forest rangers \$100.00 a month for a six months' period, for which the Government demands and secures an equivalent in energetic application to duty. Ontario pays its forest rangers (under its recently re-organized system) \$75.00 a month minimum, Quebec pay averaging

\$60.00 a month. Cheaply-paid forest guards usually represent unenthusiastic service. They are available for action usually only when fires have secured headway. Neither is it their hourly duty to look after fire *prevention* and public education, such as applies to a truly efficient ranger working under an up-to-date system. Adequate wages and alert inspection always recoup the public treasury well during a season of average fire danger. One might hazard a guess, without being accused of exaggeration, that for every dollar withheld from the forest protection service, short of a really adequate amount, the people of New Brunswick are losing many hundred per cent per annum in forest fire damage.

How a better System can be paid for. The proposed reorganization of the fire guarding scheme involves no *net* outlay on the part of either Government or licensees, and would quickly put an end to a destructive agency that is penalizing the people of the province.

The Canadian Forestry Association leaves to the judgment of the Government and its staff of foresters the detailed plan upon which a reorganization could be based.

It may be that the Government will consider the taxing of licensed lands at a half-cent an acre, somewhat similar to the method of Ontario, where the tax is double that amount, or of British Columbia where the fire tax is one-and-a-half cents an acre, the British Columbia Government contributing dollar for dollar. This would give the province \$40,000 which with the \$60,000 now spent on scaling, fire protection and administration of fish and game laws would make an annual fund of \$100,000 sufficient to construct a forest service second to none in Canada.

The mere heaping up of a fund of \$100,000 would not in itself correct the inadequacies of the present forest protective work. From the Parliament Buildings at Fredericton, out to the most distant ranger in the field, there must be a plan of co-ordination and co-operation. This pre-supposes an efficient head-office staff, directed by the Chief of the Forestry Division. To this officer should be delegated control of practically all the public forest administration, the appointment of a sufficient number of inspectors to get good service from the field employees, the allocation of rangers and the enforcement of discipline.

New Brunswick's problems have been solved elsewhere. The appointment of a Chief Forester, with power and sufficient money to reorganize the protective service, would in itself relieve the government and the people of the need for protracted debate and investigation.

Methods of fire protection have become in a general way standardized the world over. Other parts of Canada have built up forest guarding systems that completely outstrip in actual results the methods that preceded them. New Brunswick offers few special difficulties that have not been already surmounted in Quebec and British Columbia and in many of the states of the American Union.

Under skilled direction, a reorganized forest department would bring into effect the system of issuing "permits" for all settlers' land-clearing fires. It would introduce modern aids such as telephone lines, lookout towers, the cutting of trails and roads and other facilities for quick

communication. An ounce of prevention is worth a thousand pounds of cure in forest fire work, and *speed* is the essence of prevention. Speed in the detection of fires, in their incipient stage, speed in calling help, speed in reaching the scene of danger. At one time in 1916 sixty fires burned simultaneously on the areas of one of the well-organized Quebec forest protective associations. But every fire of the sixty had been promptly seen by rangers on patrol or from lookout towers, and, by using the telephones, men were rushed to all centres of trouble. Every fire was extinguished. Not one was allowed to grow big and get beyond human control. Prompt detection usually means prompt extinction. But detection requires the afore-mentioned mechanical aids, without which the best human labor is heavily handicapped.

The advantages of centralized authority. The advantages of combining under a single department of the Government the work of supervising cutting operations, fire ranging and timber scaling are very clear. The three sets of duties have to do with Government responsibilities over Crown forests. The ranger would find occupation on fire protection work during the time of fire hazard, roughly from April 15th to October 15th. He could then be transferred to timber scaling or utilized in various field undertakings of the Forest Branch. Control of cutting would, of course, require several technical men, whose services could be utilized also for forest surveys, mapping, land classification, construction of fire protection trails, telephones, etc. This would mean continuous year-round employment for the main body of employees, with the prospect of promotion as they became more efficient. In any line of work transient jobs do not attract the best class of men and this is markedly true of forestry employment.