

CANADIAN FORESTRY CONVENTION

HELD AT OTTAWA, 10, 11 and 12 JANUARY 1906

ADDRESSES

DELIVERED BY

THE RIGHT HON. SIR WILFRID LAURIER

MR R. L. BORDEN, M. P.

MGR J.-C. K.-LAFLAMME

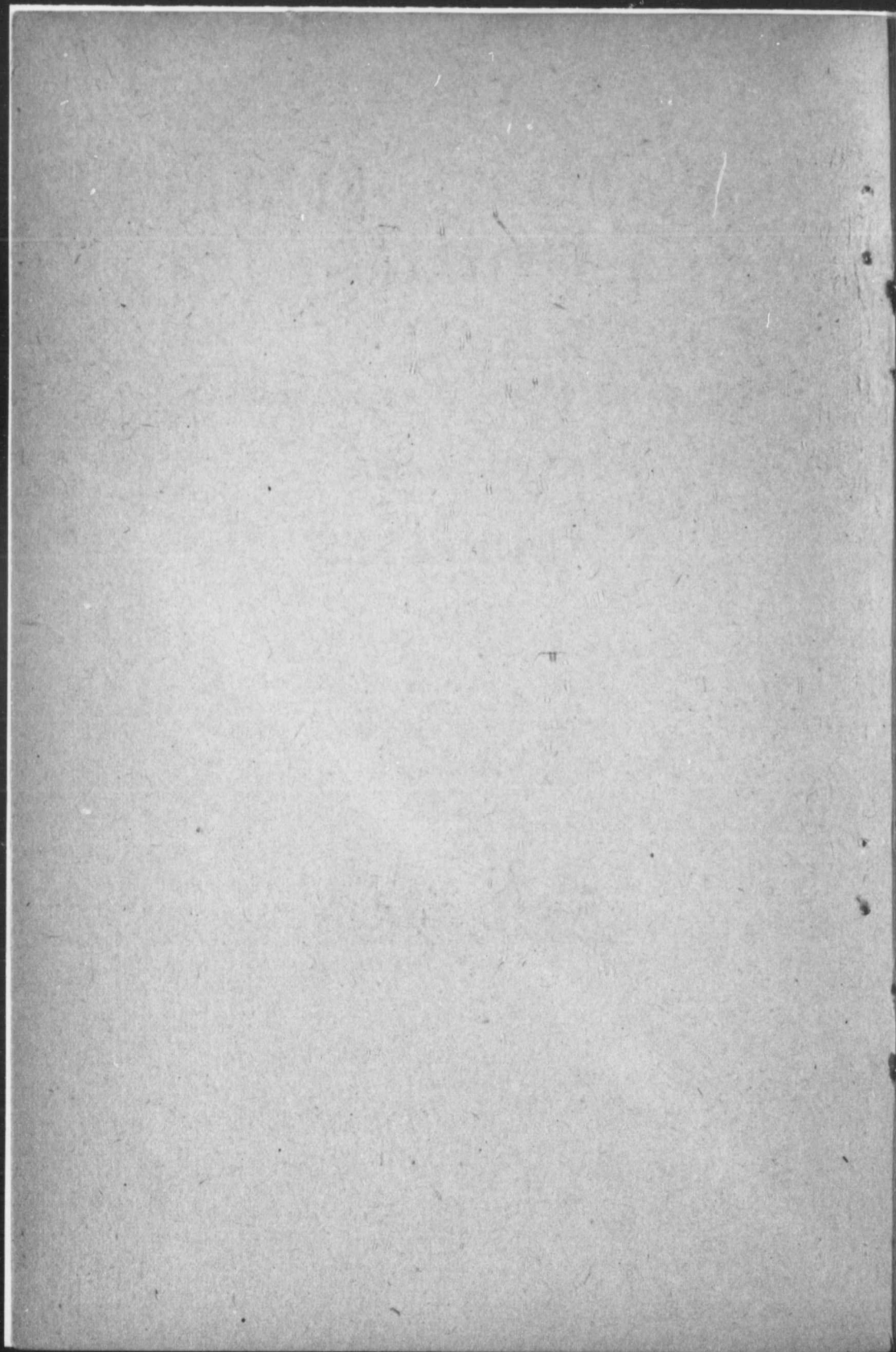


QUEBEC

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Extracts from the Proceedings of the Canadian Forestry Convention

Address of the President

THE RIGHT HONORABLE SIR WILFRID LAURIER

At Ottawa, January 10th, 1906

Your Excellency, Ladies and Gentlemen,—In the name of the Canadian Forestry Association, which has conceived and planned this conference, and in the name of the Canadian Parliament which has authorized and approved of it, it is my privilege and my pleasure to extend to you all a most hearty greeting. Welcome to one; welcome to all. Especially should I welcome, even after the words of His Excellency the Governor General, the representatives of the American Republic who are present with us on this occasion, and who bring to us the benefit of their knowledge and experience. Welcome also to the representatives of the provincial governments without whose aid and co-operation our efforts could never have the full fruition which we anticipate from them. Welcome also to the representatives of the great railway companies which are placed in a position to give, perhaps, more than any other class of the community, the benefit of their experience and knowledge to us. Welcome also to the representatives of the great lumbering class, who, perhaps, are more interested than any other class of the community in the maintenance, preservation and protection of the forests. Welcome to the university men whom we see before us, welcome to the traders, welcome to the sportsmen, welcome to all classes who are present, and who are ready to contribute of their time and of their money to the great object we have in view, and which is an object of primary national importance. The large attendance which I see before me, I am most gratified to say, exceeds all the expectations that we had, and this attendance, large as it is, is a manifest evidence that the Canadian people at last—at long last, realize the great importance of all problems connected with forestry.

A great deal of harm has already been done, harm, which, I am afraid, in many respects cannot be recalled, but it is not yet too late, and the harm which we know has taken place is and ought to be an incentive to us to do our best in the endeavour to check it and to give more attention to forestry problems. Our ancestors, when they

came to this continent, found it an unbroken forest from the shores of the Atlantic ocean to the Mississippi valley. It was the home of a race of hunters who derived their existence chiefly from the chase, and for whom therefore the forest was a natural element. It was the object of our ancestors to turn this land into a fit habitation for a race of agriculturists, for the man whose civilization is based primarily upon agriculture. They had to clear their homes from the forest, but instead of attacking the forest with care and tenderness they looked upon it as an enemy to be got rid of with the axe, with fire, and with every mode of destruction. History tells us, and our own experience tells us, that they went at it most mercilessly. The forest had no friends whatever, because to clear off a few acres of land they would set fire to miles upon miles of the noblest trees that ever lifted their lofty heads towards the heavens. This, at one time or other went on in every part of the continent, and even at this day it is still going on in some part of the continent. These pioneers of former days, as the pioneers of these modern days, did not realize, did not appreciate that in the economy of nature forests are just as indispensable to the civilization of man as tilled fields. They did not appreciate that even from the point of view of agriculture unless tilled fields are furnished by forests with moisture and rainfall, they decrease in their productiveness accordingly, and that the efforts of the agriculturist will suffer in proportion. We have assembled here in order to devise ways and means, if possible, first of all to check this evil and to make every class in the community realize the great importance of maintaining, preserving and protecting our forests. What I would like to call the attention of this convention to, in the first place, would be the necessity of establishing, if it has not been done, and it has not yet been done, a preserve, a large forest domain. We must know, and the experience of those nations to Which His Excellency in his address has just alluded, teaches us that there are certain portions, certain sections of the earth's surface which, in the wise economy of nature, must always be maintained as forests, and that our watersheds must be maintained as forests. All the hills, mountains and plateaus which are the sources of flowing streams or rivers, should never be allowed for any consideration whatever, to remain anything else than forests. No consideration whatever should allow these portions of the earth's surface to be denuded of their trees. We know the consequences, and therefore it is needless for me to dwell upon that feature ; it is a mere truism.

But, what I want to call your attention to is that if these portions of the earth's surface in our own country are to be maintained as forests it is essential, in my humble judgment at all events, that they should form part of the national domain, that they should belong to the state. In Canada by the state I mean the provincial governments where the management of the public lands is left to the provincial governments, and the national government where the ownership of public lands is left to the national government. If it so happens, and I am afraid it has happened, that some portions of these watersheds have been alienated from the public domain and have been transferred to private ownership, it should be the policy of the national government and it should be the policy of the provincial governments to repurchase these lands and bring them back to the public domain.

The state of New York has inaugurated such a policy. The state of New York years ago made the mistake—I was going to say committed the folly, and perhaps that word would not be too strong—of alienating part of the watershed of the Adirondack mountains. We know the fatal consequences that have arisen from that policy in the droughts which have more than once been the bane of that beautiful state. And now, I understand, the legislature of the state of New York has passed laws authorizing the administration, as fast as possible, to re-acquire these lands and make them a part of the public domain. If, in any part of Canada, a similar mistake has been made, a policy such as that adopted by the state of New York should be adopted here, and the national or provincial government whose business it is should make it their object to bring back to the public ownership the lands that have been alienated, and make these forests a part of the national domain, as is done in Germany, France and some other countries. On this point, I am sure, we all agree.

The next consideration for which I would invite the deliberation of this convention is the reproduction of the forests. Our system of treating the forests is to lease them to the lumbermen for the purpose of taking off the merchantable timber. I do not know whether this policy is advisable or not. I believe that, on the whole, it is advisable. But no effort is made to replace the timber that is taken away from what we call the limit under that policy. In Germany and France, I understand, it is the accepted policy, a policy that has been followed for generations, when a tree is removed in any way to replace it by the planting of another tree. I am not prepared to say that such drastic conditions should be imposed upon the lumbermen—though I am not prepared to say, on the other hand, that a plan of this kind should not be taken under advice. At all events, I submit to this convention that we ought to do something more than we are doing at the present time. It is not fair to the country—it is not fair to us who are living, and still less is it fair to the generation to come after us—that we should allow the destruction of the forest to go on year by year by the cutting down of the trees and make no effort whatever to replace what is thus taken away. The trees are a crop like any other growth. True, they are a crop of slow growth, but that is the only difference between trees and any other crop. In this, as in every case, when a crop is taken off, steps should be taken to replace it at once with another. I said a moment ago that I was not prepared to say that when the lumberman, in the course of his work, takes away say, 300,000 trees in a year, he should at once plant 300,000 trees. But I do ask this convention to consider what should be done in that matter. One thing might be asked, whether of the lumbermen or of the state; that, where trees are taken away, trees should be seeded, so that we may have a crop coming on all the time. It is a fact which we face with some degree of sadness, even mourning, that Canada, in a few years will be devoid, absolutely devoid, of the beautiful pine forests which at one time were its pride. We can calculate the number of years—and the number is not very great—when there will not be another tree of the original forest to be cut upon the limits of the Canadian lumbermen. But, trees have grown and trees ought to grow again. There is an impression which I have heard expressed on more than one occasion, that it is useless to look for another crop of pine trees—that when you have removed the crop we found

here, the growth of many years, the new crop of trees will be spreading and of no merchantable value. But I am told that there is a way whereby a new crop of trees can be grown. The growth should be started as soon as the original trees have been removed from the soil. A few years ago I was discussing this subject with a lumberman of great authority, a man known to some of you, the late John Bertram, a man most eminent in his profession, and of the highest capabilities in many directions. He told me that, on his limits on Georgian bay, he had a young crop of pine which he had started a few years before. The explanation he gave me was this—and I am glad to give here the information he imparted to me, so as to gain the opinions of those who have experience in these matters—he told me that, when the crop of pine was cut off, the new crop to spring up would consist largely of poplar, and the poplars grew faster than the pine or hardwood trees. And he said : If you take care to plant pine seeds underneath these poplars, the young pines will grow up shaded by the faster-growing trees. The pines, in their efforts to reach the sunlight, will grow tall and without limbs. After a time, when they overtop the poplars, their life is assured. If this be the case, it seems to me we have here a method of reproducing our trees and of having, for all time, a constant supply. (Applause). It is a natural thought that we shall not live to see this young generation of trees at their full growth ; but, as has been stated a moment ago by His Excellency the Governor General, we must not think alone for ourselves, we must think of the prosperity of Canada in the days when all of us shall be sleeping in our graves. This is the sentiment, I am sure, that actuates this entire assembly. (Loud applause).

The next thing I would like the convention to consider is the protection of the forest against its many enemies. For the forest, unfortunately, has many enemies. Man is bad enough, we all agree ; but man is not so bad as the insects, and the insects are not so bad as fire. The fire is the great enemy of the forest. Nothing can be sadder for us to consider than that, during the summer months there are miles and miles of forest destroyed by fire. This goes on every year. Speaking of my own experience, it has been going on ever since I can remember. It goes on, perhaps, not to so great an extent as in former years, but there is far too much of it yet. I was talking, a few years ago, with one of the lumbermen of the city of Ottawa, and he made the statement to me that the enormous quantity of lumber taken to market out of the Ottawa valley does not represent more than ten per cent of the timber that has been destroyed by fire. If this is a true statement the fact is simply appalling. Last week, I met one of the lumber kings of the Ottawa valley, who asked me, "What are you going to do at this Forestry Convention ?" I said, "We are going to compel the lumbermen to protect the forest against fire." He replied, "Why, the lumbermen are doing more in that direction now than all the rest of the community put together." I said, "I quite believe it. But that is not saying very much for the lumbermen. Because the rest of the community does absolutely nothing to protect the forest, and the lumbermen may well be doing more without doing enough."

What measures ought to be taken to protect the forests against the raging fires that every year consume such an appalling quantity of the best timber of the country? I know that the lumbermen keep a patrol of the woods of the Ottawa valley. And

that is a great improvement. But I submit, that this is not enough. I submit that something more ought to be done, if it be only to have more patrolmen. I believe that we should have the woods patrolled as they are in Germany and France, so that, as far as possible, every incipient fire should be prevented from spreading. Moreover, we should impress every man in Canada,—the lumbermen, the sportsmen, the man out of any class—with the belief that it is a crime, an absolute crime to throw a lighted match upon the ground, to scatter the ashes of a fire, or to leave a camp fire before it is absolutely extinguished. All these things are crimes and I would go so far as to say that they should be made crimes under the law.

There is another mode of destruction to which I want to call the attention of the convention and it is the destruction by the railway locomotive. The railway locomotive is a great blessing undoubtedly, and I am not here to say anything harsh of it, but if you take the train at Halifax to go to Vancouver, in every province of the Dominion, where there is timber, in Nova Scotia, in New Brunswick, in Quebec, in Ontario, in British Columbia, you will see miles and miles and miles of what was once beautiful forest and which is now nothing but parched and blackened timber, a monument to the destructive power of the railway locomotive. I know that the railway men have done a great deal to obviate this evil. They use all possible ways of overcoming the difficulty inherent to the operation of the railway locomotive. They have put screens upon their stacks, they have devised different methods, but all these methods have been inadequate, and I do not know that in that direction they can do more than they have done, but perhaps the railways ought to be compelled in the summer season, at all events, to have extra patrolmen on their tracks so as to prevent incipient fires, to follow sparks in their progress and to extinguish them before they have caused any damage. I think that is one question that ought to be carefully considered by this convention, and I believe that if it were to do nothing more than to prevent fires by railway locomotives this convention would have done a great deal, but I think it will do more than that.

There is another subject to which I would also invite the attention of the convention. That is tree planting. It is not sufficient that we should preserve our forests where we have forests. It is not sufficient that we should plant forests also to a great extent, but we should invite people generally to give more attention to tree planting at their homes, and especially upon their farms. The Canadian government, some eight years ago, introduced into one of its departments a forestry branch. It has done a great deal of good in that respect, and I hope that Mr. Stewart, who is the administrator of this branch, will give us some information as to the work which he has done. It has done a great deal already to my certain knowledge, and to the knowledge of every one who has been in the North-west. It was my privilege last September to visit the province of Manitoba and the new provinces of Saskatchewan and Alberta. Fourteen years had elapsed since I had seen them before, and of all things which struck me in this wonderful country, the thing which perhaps gladdened my heart more than anything else, is the attention which is given to forestry. Fourteen years ago when I first visited the province of Manitoba and the Territories of Alberta and Saskatchewan, the farms were absolutely barren of trees; you could not

see a tree around them. Now, I am glad to say that around most of the farms in Manitoba and many in Saskatchewan and Alberta, you can see groves of trees. The city of Winnipeg has done marvels in the way of tree planting. The streets of Winnipeg to-day are a credit to that city, and would be a credit to even an older city than it is. But there is a great deal to be done in the east, and in that respect my own province of Quebec is perhaps the greatest sinner. My own countryman, the French-Canadian, is the man with the axe. There is no better man in that respect than he. He goes into the forest, and there is no man who can equal him in forest work, but in the meantime, he has not been as careful as he should have been in preserving the trees in his midst. I should like to impress upon every Canadian farmer the necessity of covering with trees every rocky hill and the bank of every running stream. It is very easily done. He has only to scatter the seeds on the ground, fence it and nature will do the rest. These are some of the questions which I hope will be taken into consideration by yourselves. I do not intend to limit the number of questions which shall be taken into consideration, but these are some to which, with others, I invite the serious attention of this convention. I have much pleasure in calling upon Mr. R. L. Borden, the leader of the Opposition in the House of Commons.

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Address of Mr. R. L. Borden, M. P.

Leader of the Opposition in the House of Commons

Your Excellency, Sir Wilfrid Laurier and Gentlemen,—I welcome the opportunity of being present at this convention, and of expressing my appreciation of the importance of our forest resources. To men familiar as you are with the subject, all that I can say must seem trite and commonplace ; but I venture a few remarks merely for the purpose of indicating my interest in this great question.

Canada is remarkable not only for the extent and variety of her resources, but for the diversified nature of the country and for its remarkable beauty. In the east we have Quebec and the maritime provinces with their magnificent coast lines, their forests, their agricultural and their mineral wealth. Thence there extends inland through Quebec and through the sister province of Ontario the greatest inland waterway in the world, connecting the ocean with the broad prairies of the west. Great rivers reach down from the forests of the north. On the western coast we have another great maritime province abounding in forest and mineral wealth.

Of all our wonderful natural resources none are more important than the forests. Their conservation is undoubtedly more vital to our future than generally realized. "How foolish", says a great authority, "how foolish does man appear in destroying the mountain forests, for thereby he deprives himself of wood, water and soil at the same time."

We are apt to regard our forests as limitless and our forest wealth as unbounded ; but public attention has already been directed to certain dangers and to some of the more threatening elements of destruction and waste. Something has been done to check forest fires, yet what devastation they have wrought. Practical men tell us that twenty times as much has been sacrificed to flame as to the lumberman's axe. An illustration mentioned at the last session of the Canadian Forestry Association may be given. A settler in the province of Quebec in order to clear the ground for a five-bushel crop of potatoes started a fire that destroyed three hundred million feet of pine, which to-day would be worth \$3,500,000. Measures have been taken in many of the provinces to prevent such destruction, but those who can speak with knowledge declare that much yet remains to be done. Many of us, although not actually concerned in forestry or in the lumbering industry, have had occasion to tramp perhaps for half a day or more through forests ravaged by fire. There one can see the very abomination of desolation spoken of in Scripture. Then follows erosion of the soil consequent on the destruction of tree and plant life, and this in turn works similar havoc. The waterways cease to be highways. Rivers cease to be channels of commerce and become raging instruments of destruction.

The importance of the subject has been most forcibly expressed by Dr. Fernow, director of the New York State College of Forestry, and an eminent authority on the economics of forestry. He says :—

“While we are debating over the best methods of disposing of our wealth, we gradually lose our very capital without even realizing the fact. Whether we have a high tariff or no tariff, an income tax or head tax, direct or indirect taxation, bi-metallism or a single standard, are matters which concern, to be sure, the temporary convenience of the members of society, but this prejudicial adjustment is easily remediable. But whether fertile lands are turned into deserts, forests into waste places, brooks into torrents, rivers changed from means of power and intercourse into means of destruction and desolation—these are questions which concern the material existence itself of society, and since such change becomes often irreversible, the damage irre-mediabile, and at the same time the extent of available resources becomes smaller in proportion to population, their consideration is finally much more important than those other questions of the day.”

Let us consider for a moment the extent of our forest resources in Canada, their value from a mere monetary standpoint and the importance of their conservation. Dr. Fernow estimates that our nominal forest area comprises eight hundred million acres, but that the actual available area does not exceed four hundred million acres. To understand what this implies and what it means to us in the future let us see what has been accomplished elsewhere. In some parts of Europe the forests are under state control, that is to say, not only the ownership but the management of the forests is vested in the state authorities. I do not suggest that any such course should be adopted in Canada, but we may learn from their experience what can be accomplished by wise measures and careful management. Saxony has under state control 430,000 acres of rough mountain land—an area not larger than an average county in Canada. From this she has taken two hundred million dollars in the past fifty years. During that time the cut has been doubled and is of infinitely better quality than it was fifty years ago. Then only 17 per cent of the cut was serviceable, now 79 per cent is serviceable and the standing wood in the state forests has increased by no less than 16 per cent. The gross revenue per acre has increased from \$1.75 to \$6.67, and the net revenue per acre from 95 cents to \$4.37. Canada possesses a forest area one thousand times greater than that of Saxony. Make all reasonable allowances and then estimate what untold wealth this country possesses so long as the harvest of the forest continues.

What can we do in Canada to conserve our forests? The capitalist desires immediate profit, while the public interest requires that our forest area should be exploited not only with a view to the important consideration of profit but with due regard to continuity and to the preservation of these great natural resources. The forests if judiciously managed may bear a crop once in fifteen or even in ten years. If destroyed the crop cannot be renewed in less than a century. The object to be attained is continuity and conservation of the forests which are to be regarded as capital upon which individual enterprise shall not be allowed unduly to trench. We must of course have regard also to the necessity for a certain immediate profit to the capitalist who has invested his money and who has a right to carry on his operations as well as to the requirements of legitimate and bona fide settlement. How shall all

these objects be obtained? The state can assist by aiding education in forestry as well as by direct control exercised through state regulation.

Along these lines the Canadian Forestry Association is working. Along these lines it is entitled to and should receive the assistance of our parliament and legislatures. I have very great pleasure in assuring you that not only do I take a deep interest in the subject but that I shall be prepared to support any reasonable measures within the limits of federal authority which may be devised for aiding in a work of such vital national importance.

Address on Forestry Education

By *Mgr J. C. K. Laflamme, University of Laval*

Having to speak about forestry education, I will keep myself within limits as narrow as possible, and touch only the general notions which every one should have, the uneducated as well as the educated people.

To the "Canadian Forestry Association" belongs the honour of having first brought about a serious consideration of scientific and economic forestry in Canada. From the first moment of its existence, its zeal has never lessened, and at present its influence has reached even the highest spheres of official power. The proof of this lies in the fact that the present reunion has been called by Right Hon. Sir Wilfrid Laurier, Prime Minister of Canada. "Canada", he says in his splendid letter to the public "possesses virgin forests which in extent yield to no other country in the world, and European experts think that her woods will enable her, in the future, to rank first among the great wood suppliers of the world." It is to study these resources and, at the same time, the perpetuation of them, that we see gathered here to-day the representatives of our industry, of our ruling classes, of the universities and colleges; in a word, all those who, for any reason, are interested in the question of forestry.

I am very glad to say, first of all, that the forestry question has already interested in a large degree some of our local governments. Ontario took the lead in establishing, inasmuch as circumstances permitted, a forestry service, well organized indeed, and highly appreciated by all those who know it; and it is a pleasure for me to add that Quebec has also taken an active part in this movement.

Last autumn, in response to the wise suggestion of Hon. A. Turgeon, Minister of Crown Lands, our government sent two young French-Canadians to the Yale Forestry School. When they have obtained their diplomas, these young men will go abroad to study on the spot the forestry methods as used in France, Germany, Sweden, etc., and on their return they will be, not only competent judges on all forestry matters, but moreover the pioneers in the teaching of forestry. With time, and very soon, we will have a well organized and complete provincial forestry school, attending firstly to our own local forestry problems, which differ more or less from those of any other country.

We ought, therefore, to praise heartily this wise and far-seeing measure of our local government. For many years we have awaited it, desired it, and the honour of having decreed it will fall to our present ministers. From these facts we may conclude that the opinion of our rulers, either at Ottawa or in the provinces, is won over to the great cause of our forests.

But we should go further, and develop this same turn of mind among all our fellow citizens, educated or not. We should reach the people as a whole, in order to bring home to every one of them sane ideas and to interest them in the forestry question. After that has been done, our rulers, being always sure of the approval of public

opinion, could act more energetically and more quickly, without being troubled by the meddling of the ignorant or interested parties.

How shall we reach this end, and teach our people the rudiments of silviculture? Will it be, for instance, by introducing some knowledge of forestry in the curriculum of our elementary schools, and by forcing the little Canadians to discuss economical questions of forestry? To this question I answer emphatically, no. Let the teaching in these schools consist of reading, writing, counting, a little of local history and geography and the principles of religion, and it will cover all that can be reasonably expected. At the most, I would advise that the teacher, from time to time, during little outings in the neighbouring woods, should give to his pupils sound and general data on forestry matters; what has been called, *Leçons de choses*. Any more than this would be out of the way and would lead to a piteous failure.

In the high schools and academies, normal schools and colleges, I would go a step farther. It is there, indeed, that the teachers are made; it is from there that come those who will constitute the ruling classes. Consequently it is only right that these students should know well the importance of the forestry question. Therefore I would advise some kind of forestry training, but on the express condition that it be organized with much tact and judgment; for our aim cannot be to make professional foresters out of those pupils, but rather to teach them general principles, so that, when leaving the college, they carry home with them the conviction that we Canadians have a forestry question to be solved, and that if we wish to solve it without compromising the future, we should look for this solution to come from competent persons following closely scientific data and principles.

It is again along these lines that I would like to see the clergy, the professional men, the manufacturers, the lumbermen, contribute to spread sound ideas in forestry matters among the people with whom they live. This personal action would require very little effort, and could often be realized simply by a good advice, given in due time, or a simple remark made *en passant*.

This is one way of understanding the manner in which we should get a popular and practical forestry education; but there is another means which cannot be neglected: it is reading newspapers, reviews, books, etc.

The people read more than ever; therefore let us distribute, on all sides, tracts concerning our forests—but on one condition, that these papers be well done. In preparing them, the authors will leave out all pretention to exhibit a great science, and adopt, as much as possible, the *point de vue* in talking to their future readers. Moreover, they should treat only essentially practical points.

In the United States the Federal government sends free of charge, at the request of interested parties, expert foresters who furnish all the information wanted on the manner of treating wood lots, according to the use which the proprietor wishes to make of them. Why should not our governments do likewise? Why should we not have something to say to the proprietors about the general and particular care of their forests? For instance, why should not the colonist be advised never to lay bare the surface of steep slopes, whether for fear of disastrous landslides or of denuding what the centuries to come might be unable to recover with a valuable crop of wood?

Why should they not be cautioned particularly and forcibly against the dangers of forest fires, and made to understand the *à propos* of the official regulations which relate to them? Why should it not be emphasized to them that the colonist is wrong when he persists in tilling a barren and gritty land? Why should he not be made to understand that this poor land, from which a few passable harvests may possibly be reaped as long as its humus and the ashes have not been exhausted, will soon be unable to repay the toil which would have to be expended upon it; that he better choose another lot of good, deep soil, and leave the poor one covered up with its perpetual panoply of valuable timber.

These are some of the points which I should like to see treated in popular tracts, to be distributed everywhere among the population of farmers and colonists. I do not mean, as I said before, complete didactic dissertations; God forbid! The people could not read them. A few pages would suffice, provided they be stirring, impregnated with the good common sense which appeals to every one and always produces its effect.

All these publications should be written in French and English. When the forest is at stake, the province of Quebec plays a very important part, and, whether we will it or not, the English papers would not now and will never be properly understood by the French population of Québec farmers; no more, I suppose, than the French publications would now or ever will be understood by the English speaking farmers of Ontario. I am glad to mention in connection with that that Hon. A. Turgeon has ordered to be prepared in French an opuscle on the general principles of the science of forestry, which is to be distributed throughout the province of Quebec. For the same purpose I would like our association to publish in the two official languages of the Dominion, and by thousands, all its reports, in order that a large number of readers may profit by them.

At the risk of abusing your patience, I shall indicate another way of instructing the people on forestry matters: I mean the example. Here, I speak especially of the enlightened class. They should take great care of their forests, if they have any, and even try plantations, if they can afford it. However, it can be said that these plantations are hardly practicable in our Quebec province. We must, first of all, preserve what we have, improve it if possible, and then our duty will have been fulfilled. Nevertheless there are instances when planting may be the only means of utilizing certain bare surfaces or of preventing real calamities. On this very point, the last number of the *Canadian Forestry Journal*, from a report of Dr. J. Fletcher gives an interesting account of attempts made on the sandy hills of Argenteuil, near Lachute. These experiments date back from 1898 and before, and the owners of these hills are already quite satisfied with the results obtained.

Besides this example of Lachute, here is another more conclusive.

The priests of St. Sulpice are the owners of large properties at Oka, on the Lac-des-deux-Montagnes. Near the Indian village were vast surfaces of quicksand completely arid. These sandy hills were a growing menace to the neighbourhood. The sand was invading very rapidly under the double impulse of the summer winds

and the rush of water in the spring. The village was in danger, and it became urgent to take means of saving it from the threatening invasion.

M. l'abbé J. D. Lefebvre, curé of Oka, took the matter in hand. He is nothing of a professional forester; however, under the circumstances he proved himself to be one, and a good one too. With the permission of his superiors, he undertook to plant trees on these moving sands. I cite here the words in which he explained to me what he did :—

“The trees planted are pines, white spruces, cedars and hemlocks. The majority are pines and spruces. The reason for this is that the saplings of these trees are more common. Out of the 66,000 trees planted, about 8,000 have perished. I replaced them later on. The trees which are the most exposed to the wind do not grow so well as the others; and, in order to shelter them from the winds I have planted them in groups; the others were planted in rows.

To fix the sand, I had sown about 100 bags of poor grain which the farmers gave me after the sifting; then I had spread chaff of oats, barley, buckwheat, etc., to cover the ground. The success of the plants appeared to me to be assured after one year. The little trees were planted at a distance of only three feet apart, to prevent the sand from piling up. It seems to me that the distance ought to be from ten to twelve feet in a soil where there would not be the inconvenience of sand. Later, it will be necessary to space them by removing one of every three. The size of the plants was on the average about three feet. Their present dimension is from twelve to twenty feet. The planting was done in October and November of 1886, 1887 and 1888, and a few thousand more in 1895 to replace those which had perished. This time of the year was chosen in order that the young plants might have more moisture; the autumn rains and afterwards the melting of the snow. I thought that these little trees would be already strong enough and better protected against the great heat of the summer and the effect of the sun on the burning sand.

The total cost of these plantations was about two thousand dollars. I did not buy the plants as we could get them a few acres from the place of planting. Later, I had some trimming done, the work costing about four hundred and fifty dollars. Forty-eight acres were covered by these plantations.”

This is what the Sulpicians did at Oka. Perhaps the official foresters will find in these notes some details to criticise from a technical point of view. But this would not make the result any way different. The sand dunes of Oka are fixed, and the now growing forest, perhaps still a little crowded, will be worth much more in a few years than was laid out upon it.

While listening last fall to the account which my excellent friend was giving me of his experience in planting, I asked him if it would not be *à propos* to try the same experiment on some of our arid farms, which give no crops whatever and upon which one can see the sand drifting in summer like the snow in winter. Such a work is not beyond the means of an enterprising government. And at the end of fifty or eighty years, these lands would represent a value much greater than the initial expense, even if we take into account a reasonable interest on the capital.

Should we conclude from this that replanting has to be greatly encouraged in the province of Quebec? I do not think so. Let the government, some wealthy communities and even private companies try these experiments, it is all very well. But that private individuals try the same thing without very special reasons, for the sole purpose of acquiring a forest for exploitation, we are of opinion would be a very hazardous enterprise.

As a general conclusion to be drawn from these too long considerations, we can say that it is of the utmost interest for all Canadians to acquire sound ideas of the forests, of their value, of the part they play in the general economy of public wealth, and, consequently, of the jealous care with which it is expedient to preserve and improve them. All this I should call, a national forestry education.

We are already on the right path; we have done something, but there is still much more to be done. One duty is to hasten now and not wait until our forests have been destroyed or seriously harmed. It is far better to spend now judiciously a few thousand dollars each year, in order to save our capital, than to be obliged to spend a few more later, if it became a necessity of repairing losses, sometimes irreparable.

France and Germany would not be obliged to spend millions in reforesting their mountains and dunes if they had preserved the forests which sheltered them in former years, and which a short-sighted policy, coupled with favouritism, allowed to be destroyed at the end of the eighteenth century.

We should have well equipped technical schools; but at the same time we must awake the public spirit. This will prove a powerful lever to help us to attain surely the end towards which we are all aiming, the preservation and increase in value of our forests, this all-important national wealth.