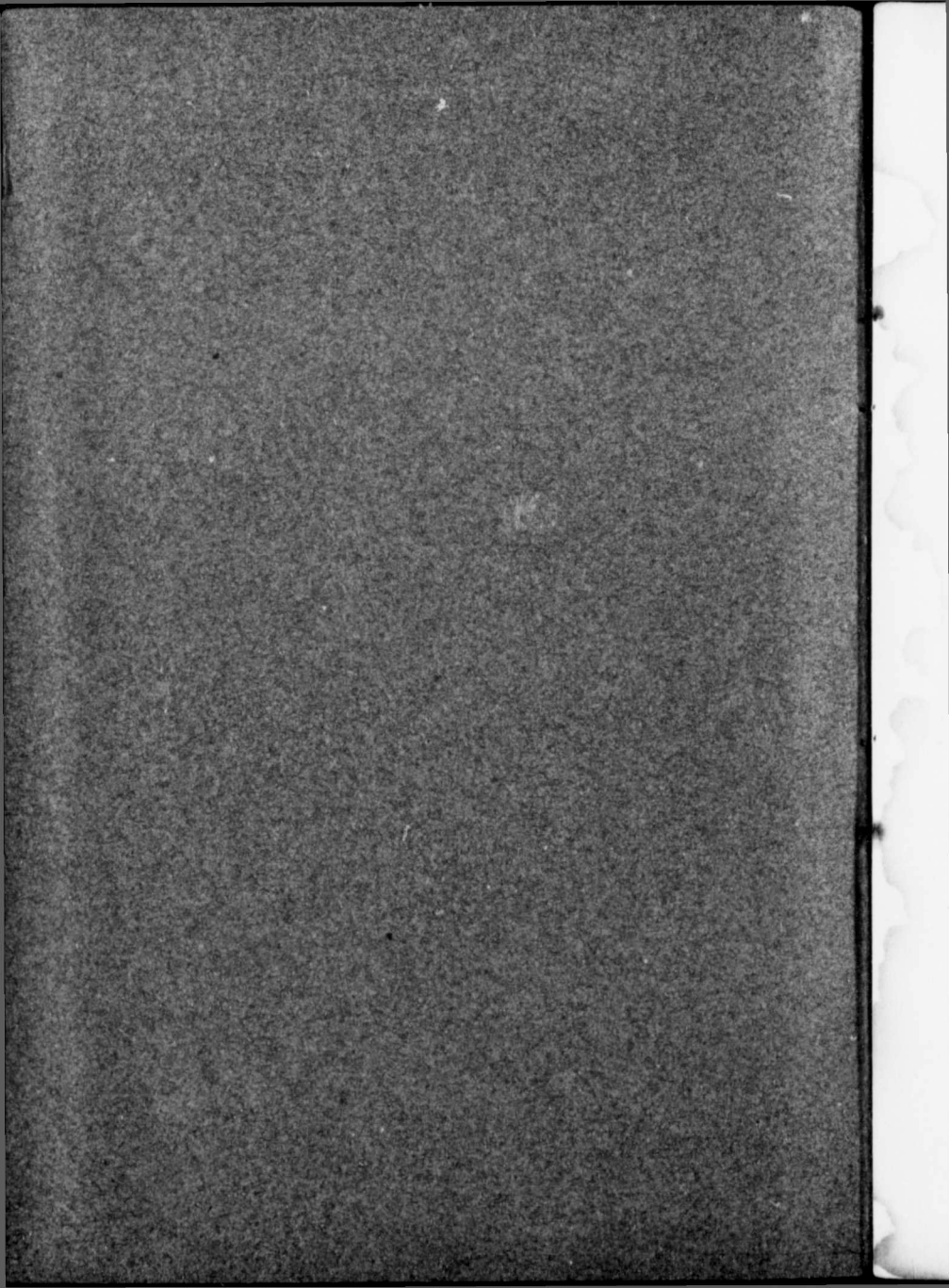


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## Inaugural Address

DELIVERED BY THE CHAIRMAN, HONOURABLE  
CLIFFORD SIFTON, BEFORE THE FIRST ANNUAL  
MEETING OF THE COMMISSION OF CONSERVATION

Reprinted from the First Annual Report of  
The Commission of Conservation, 1910.



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## INAUGURAL ADDRESS

In opening the meeting, Mr. Sifton said:—

*Your Excellency and Gentlemen:*

The occasion upon which we meet is one of very great importance. I need not say I am glad to welcome such a gathering as we have here this morning. I should, perhaps, say a word or two in regard to the preliminary arrangements for our meeting. The Commission was constituted by the Act which was passed at the last session of Parliament. There was necessarily a considerable amount of delay in the making of appointments to the Commission because communications had to be made with the gentlemen whose names were mentioned and the appointments were not completed, therefore, until late in the summer. When we returned for work in the fall, the first duty was to select a Secretary, who is the chief officer of the Commission, and whose appointment is, therefore, a most important one. After a good deal of deliberation and consideration we decided upon Mr. James White, who is now the Secretary of the Commission. I do not need to say to any of you who have had any experience of Mr. White's work that his appointment is one of the best we could possibly have made. Those of you who are not familiar with his work will become familiar with it in the future, and I have no doubt you will confirm the judgment of those of us who have been acquainted with his work in the past.

Then it was necessary to proceed with the organization of a staff. That, I may say, has been somewhat slow. The Secretary of the Commission, together with the Civil Service Commissioners, is giving his attention to the matter but the getting of the right kind of technically qualified men has not yet been successfully performed, except in the case of one member of the staff. The appointments, however, will be made in due course as soon as the proper men can be found. I may say that the Secretary of the Commission and the Civil Service Commissioners are giving their attention to the matter with the sole object of getting the men who are the best qualified for the work which we have for them to do.

Then there was the question of making the arrangements for this meeting. I had thought of calling a preliminary meeting of the Commission to arrange details of the meeting, but that, on consideration,

appeared impracticable, and so I undertook the responsibility of making the arrangements myself with the co-operation of Mr. White.

It appeared to me that it would be well at this meeting to make some remarks indicating my own ideas as to the way in which the work of the Commission should be carried on, but I need not say that, in doing so, I have no idea of trying to impose my own views upon the Commission. On the contrary, what I desire is that the members of the Commission should make use of me in the fullest possible way for the purpose of carrying out their views in regard to the great and important subject which we have to consider.

We have met to-day under the mandate of the Parliament of Canada for the purpose of inaugurating a work which is fraught with most important consequences to the people, not only of our own generation, but of the future. Parliament has deemed it wise to constitute this Commission for the purpose of promoting the conservation of our natural resources. The Bill was introduced by the Government; it passed both Houses of Parliament without a division, and may therefore be taken to represent the unanimous view of all parties in the House of Commons and the Senate.

The Commission, it is to be noted, is exceptional in its character.

First, it is not a portion of the ordinary governmental administration for which the Government is politically responsible. It is a Commission created by Parliament and entrusted with certain duties, upon the performance of which it is to report from time to time. The funds necessary for carrying on the work must, it is true, be procured by application to the Government of the day, which will introduce the necessary estimates; but, otherwise, the work is totally independent of the ordinary administration of affairs.

Second, the Commission is constituted in such a way as to secure upon its membership three members of the Federal Government and one member of the Government of each Province, insuring, therefore, the presence of a sufficient proportion of members actually engaged upon and experienced in the details of administration in the various parts of the country.

Other provisions requiring the appointment of members from the Universities, provide for the presence of a considerable proportion of men who have attained distinction in connection with our scholastic institutions. It is therefore evident that Parliament has legislated with the object of securing upon the Commission a high degree of scholarship, of scientific knowledge and of administrative experience in order to ensure the work being successfully undertaken.

Having accepted this important public trust, it becomes our duty to unite in discharging our responsibilities with whole-hearted enthusiasm and with single-minded determination to advance the public interest in every way possible within the legitimate scope of the powers conferred upon us.

The Commission is not an executive nor an administrative body. It has no executive or administrative powers. Its constitution gives it power to take into consideration every subject which may be regarded by its members as related to the conservation of natural resources, but the results of that consideration are advisory only. In a sentence, the Commission is a body constituted for the purpose of collecting exact information, deliberating upon, digesting and assimilating this information so as to render it of practical benefit to the country, and for the purpose of advising upon all questions of policy that may arise in reference to the actual administration of natural resources where the question of their effective conservation and economical use is concerned.

The effectiveness of our work will depend upon its own merits. We can only study, investigate and advise. The Governments concerned must take the responsibility of accepting or rejecting what we recommend. So far as the work consists in collecting and digesting information, it will, in any event, be of great value. When it comes to the acceptance by Governments of specific recommendations for action, or the adoption of policies, then the strength of the advice, its effectiveness and influence, must depend upon its own inherent and obvious wisdom and the soundness of the reasons advanced in its support. Obviously, therefore, there will be no room for haphazard conclusions or careless or unscientific work. Each question dealt with must be approached with an absolutely open mind and an unyielding determination to make the investigation thorough and complete and to reach the best possible conclusions. If the work be undertaken in such a spirit, it may reasonably be hoped that it will bear important fruit. The men who are in charge of the administration of our natural resources are, we may assume, desirous of giving the best administration possible. But it is most difficult for them always to know what is best. The subjects are complicated and the information necessary to a really intelligent conclusion often widely scattered, difficult to procure, and of such a character as to require much time and long study to digest. This is peculiarly true in Canada—a country of sparse population and of immense resources yet comparatively little known. One man, in Canada, is often charged with the administration of resources so vast in extent that it is difficult for him to gain even the

most cursory knowledge of the details of his own department. The life of the political head of a Department under our system, is a strenuous and busy one. He may often recognize that there is need for progress and improvement, but it takes time to work out the lines of such progress. Further, he is often deterred by the fear of hostile criticism, to which he could only oppose his own individual opinion. His motives are criticized and the wisdom of his measures impugned. Thus the boldest administrator, sooner or later, becomes disposed to adopt the policy of *laissez faire*. Under such circumstances, competent and disinterested support in carrying out the needed measures of reform ought to be welcome, and if, by the publication of the results of the work of this Commission, a strong and intelligent public opinion has been created in support of such measures, the way is made easy for their adoption.

One further word in regard to the methods and principles of action to be adopted in carrying out our work. It is absolutely essential to make it clear that it is not the province of the Commission, and it will not be its practice, to interfere with, to hinder, or to belittle the work of any other bodies, persons, associations or institutions. Our province should be to help, not to hinder. Where any person, organization, association or institution is engaged in doing work looking to the same result as that which we are aiming at, viz., the conservation of natural resources, it is our duty to support that work by every means in our power. There is no room for jealousy, there is abundant scope for all. There should be a community of interest and a harmonious co-operation all along the line, resulting in a great and strong movement for the adoption of the most effective policies.

The history of the movement which has resulted in our meeting is comparatively brief. The President of the United States having appointed the Inland Waterways Commission of the United States, that Commission on October 3rd, 1907, addressed to the President a memorandum suggesting that the time had arrived for the adoption of a national policy of conservation and suggesting that a conference of the Governors of the States of the Union should be held at the White House to consider the question. The President acted upon the suggestion, and the Conference, duly summoned by the President, met at the White House in May, 1908. Leading publicists in the United States declared that no more important gathering had ever taken place on the continent. It comprised not only the Governors of the States, but members of the United States Cabinet, Members of Congress, Justices of the Supreme Court and many distinguished scientific men. A declaration of principles was adopted and steps taken to promote

joint action between the Federal and State Governments. Later, a National Commission was appointed, which proceeded to make perhaps the first and only attempt to formulate an inventory of the natural resources of a nation.

Following this action, President Roosevelt, recognizing that the principles of the conservation of resources have no international limitations, invited the representatives of Mexico and Canada to meet at Washington in a joint North American conference. This conference adopted a declaration of principles, copies of which have been furnished to you. Upon the receipt of the report of the Canadian delegation, our Government determined to adopt the recommendations contained in that declaration of principles, and to constitute a permanent Commission of Conservation.

In determining the lines upon which action should be taken, it was recognized that there was grave danger that the authorities of the Provinces might look with jealousy upon any Commission created by Federal legislation, and the provisions of the Act were expressly framed in such a way as to preclude the possibility of any ground for such a feeling, the representation being, in fact, such as to secure, as far as possible, the most effective representation of the views of each Province. The Commission is, in fact, probably the most truly national in its composition of any body that has ever been constituted in Canada.

If I may be permitted to make a personal reference, I desire to say that, so much impressed have I been with the importance of this consideration that I determined, when accepting the position of Chairman, to dissociate myself altogether from active participation in party political affairs, believing that the work of the Commission will occupy a great share of my time and attention, and that, by such a course, I can reasonably hope to secure the complete and hearty co-operation of all the members of the Commission.

I must admit that, although I have, during the greater portion of my life, made it my business to become acquainted, as far as possible, with the natural resources of our country, the most pronounced feeling that I have experienced in attempting to realize the scope of our work has been one of utter inability to do so. The least consideration of any class of resources impresses one painfully with the inadequacy of his intellectual equipment to grasp the significance of a subject where each minute branch is properly the work of a lifetime of expert and highly specialized research. Nevertheless, it is our duty to address ourselves to the work courageously, trusting that painstaking and systematic labour will bring satisfactory results.

Some general considerations are at once apparent from an examination of existing conditions. It is evident, for instance, that our circumstances differ materially from those of the United States in important particulars. There they have a large population, and the development of their resources has proceeded very far. In our case the facts are different. Our population is sparse, our resources only in an initial state of development. So much so is this the case, that I have heard the view expressed that what Canada wants is development and exploitation, not conservation.

This view, however, is founded upon an erroneous conception, which it must be our work to remove. If we attempt to stand in the way of development, our efforts will assuredly be of no avail either to stop development or to promote conservation. It will not, however, be hard to show that the best and most highly economic development and exploitation in the interests of the people can only take place by having regard to the principles of conservation.

It is further evident, from an examination of the publications relating to the work in the United States, that many of the lines of policy which have resulted disastrously there, have not been followed at all in Canada. As a fact, the policy followed in Canada in some cases is that which the United States are now trying to reach. A notable case of this kind is the disposition of the timber lands. In the United States the policy has been to sell the timber lands outright, which removes the land and timber from Government regulations. Forest experts deplore the fact that the great bulk of the timber in the United States is now privately owned, and that the local taxation, based upon totally uneconomic principles, is made so heavy that it becomes an incentive to the timber owner to clear off the forest and to realize on it as quickly as possible by the most destructive methods.

In Canada, on the contrary, the amount of timber land privately owned is comparatively trifling. Only, I think, in the province of Quebec is it a factor. Our Governments—Federal and Provincial—have followed the policy of leasing the right to cut timber under regulations which permit the most absolute control by the Governments concerned and preserve the right to alter the regulations from time to time. There is therefore in the state-owned timber lands of Canada—Provincial and Dominion—a free field available for the adoption of improved regulations.

Another respect in which our position differs, to our great advantage, from that of the United States is that the lands surrounding the head-waters of some of our greatest and most important water courses

are still in the ownership of our Governments, so that extensive reserves can be made with little expense to the public treasury.

As an illustration of the importance of this fact, it may be mentioned that, for the last twenty-five years, it has been recognized in the United States that forest reservations were necessary to protect the head-waters of the streams that arise in the Appalachian mountains. Thousands of newspaper and magazine articles have been written on the subject. Bills have been introduced into Congress; influential associations and deputations have implored Congress to take action; presidents have recommended it; but no action has yet been taken. So difficult is it to secure intelligent attention to a subject which involves the welfare of whole states, once the land has passed from Government control.

Where the scope is almost infinite the effort should be to choose that which is immediately practical and useful. And first of all it appears clear to me that provision should be made for making a comprehensive and accurate inventory of our natural resources, so far as our available information extends. The beginning of all proper investigations is the ascertainment of facts, and there is no country that I know of where it is more urgently necessary in the public interest that the natural resources should be tabulated and inventoried than it is in Canada. When the Commission was appointed by the Canadian Government to go to Washington last winter, we set on foot a preliminary movement to tabulate information. The results of that work are now among our records. It is, I may say, of the most fragmentary description. It was surprising to find how difficult it was to get anything like accurate information. Statistical information of the class which our census officers prepare is abundant and accurate, but it does not assume to deal with the question of natural resources. At the present moment there are but few publications of any Government in Canada which give accurate and comprehensive information upon these subjects.

The utility of such an inventory hardly needs discussion. Both for the purposes of development and of conservation it is the first essential to have an accurate and complete statement of the facts, readily available, accessible to all, and couched in language that the average reader can understand.

You have no doubt made yourselves familiar with the declaration of principles adopted by the North American Conservation Conference at Washington. Let me quote from it one paragraph which, I think, should be regarded as embodying the guiding principle of our work.

"We recognize as natural resources all materials available for the use of man as means of life and welfare, including those on the surface of the earth, like the soil and the waters; those below the surface, like the minerals; and those above the surface, like the forests. We agree that these resources should be developed, used and conserved for the future, in the interests of mankind, whose rights and duties to guard and control the natural sources of life and welfare are inherent, perpetual and indefeasible. We agree that those resources which are necessities of life should be regarded as public utilities, that their ownership entails specific duties to the public and that, as far as possible, effective measures should be adopted to guard against monopoly."

Let it be understood, that in this declaration, there was no intention of reflecting upon any government or upon any person. There is probably no government in North America and no man for any considerable time connected with administration of public affairs, as a representative or as an administrator, who has not frequently been a party to measures inconsistent with this declaration of principles. But it is only by recognizing the neglect and omissions of the past and by endeavouring to avoid them in the future, that progress can be made. The object in framing this declaration was to embody the results of experience and the highest wisdom attainable. The laws and the practice, as they exist to-day, are far from conforming to these ideal principles, but the ideal is our guiding star, and, towards its attainment, we should devote our most strenuous efforts.

The natural resources may be grouped generally under a number of headings:—The Minerals, The Fisheries, The Public Health, Inland Waters, The Land and The Forests.

**Minerals**—Up to the present moment, in the history of Canada, the sole effort has been to secure the exploitation of our mineral wealth. There is no reason why such exploitation should be discouraged; but there is every reason why intelligent consideration should be given to the more economic use and production of minerals. Improvement in methods of production may mean scores of millions added to the available mineral wealth and long continued enjoyment of the results of mineral production. Improved methods of saving and separating minerals will result in great quantities of mineral being profitably used which are now consigned to the refuse heap. The various Provinces have departments which have the care of their mining industries. The Dominion also has established a Department of Mines. The Dominion Department of Mines has lately been devoting attention to the issuing

of useful reports containing exact information upon a variety of subjects. Investigations of an important character have been undertaken. Questions relating to processes for more satisfactory and economical extraction of ore are constantly arising. There is always the difficulty, however, that the Minister or official, whether in the Province or in the Dominion, who strives to advance, is faced with the difficulty, not only of doing his ordinary and usual work, but of overcoming the natural inertia which opposes itself to progress and the adoption of new and advanced ideas. A careful survey of the work done by the various Departments of Mines will undoubtedly result in making clear the lines of practicable progress, stimulating co-operation between the different departments, strengthening the hands of those who desire to follow a progressive policy, and also, which is hardly less important, eliminating classes of work, the utility of which is not apparent.

It would be quite outside of my scope to undertake to speak at large upon the mineral resources of Canada. Let me mention a few salient facts.

1. In 1905, the mineral production of Canada was 20½ millions.  
In 1908, the mineral production of Canada was 87 millions.
2. If you look at the geological map of Canada, you will see that the development has taken place, practically, (leaving out the Yukon) only in territory lying fairly near to the southern boundary, that is, to the inhabited and settled territory.
3. Wherever prospecting has been done farther north, indications of valuable minerals have been found, and, by accident, great wealth has been uncovered in some cases.
4. Our whole country north, from Ungava to Yukon, is of a geological formation which renders it almost certain that it is rich in valuable minerals.
5. There are in the province of Ontario, large bodies of certain classes of iron ore which are, at present, useless. They can be utilized, so far as our present knowledge goes, only by the introduction of electric smelting. The water-power is abundantly available. Our Government has taken the lead of all the governments of the world in the investigation of the subject. Economic plants for electric smelting of iron ore are now being established in Norway and Sweden. We have led the way in investigations, but we are behindhand in the application of the knowledge acquired. A great industrial development lies ahead of Canada in connection with this subject. Our Government should be urged to spare no effort in its encouragement.

Waste prevails to a very large extent. Let me illustrate,—

1. In the Cobalt camp the mine owners are largely at the mercy of foreign smelters and refiners.\* Much valuable mineral is taken and not paid for or accounted for. It is lost to the owners and to this country because there is no effective method of treating these ores in Canada. Thorough investigation by experts is highly necessary. Probably the valuable mineral lost in the Cobalt camp in one year would pay for the whole investigation, and build the plant necessary to treat the ores under proper guarantees.

2. In the utilization of coal deposits, most wasteful methods are employed.† Coal difficult to mine, is not taken out and the shafts are blocked up and the deposits lost forever; so of iron. In making coke it is alleged that uneconomic methods largely prevail.

3. In British Columbia, until lately, no account was taken at all of zinc contents in the ores, and a large amount of this very valuable metal was lost. The Federal Department of Mines has investigated the subject, but further action is necessary.

4. In the Yukon, large deposits of gold-bearing gravels have been covered by tailings and rendered extremely expensive or impossible to work.

5. Upon the subject of mine accidents I speak subject to correction; but my information is that Canada makes almost the worst showing in the world. The fatality rate in coal mining in the United States and Canada appears to be steadily increasing. Increased knowledge, scientific development and modern methods are apparently not being devoted to protecting the lives of helpless employees.

In the Transvaal, with Kaffir labour, the death rate in 1906 was 5 per 1,000 employees employed underground. This was considered so great that a Royal Commission was appointed to enquire into it. In the Cobalt district in 1908, I am told the death rate was 24.8 per 1,000‡

\*The present position is that, owing to recent improvements, the provision for treatment of high-grade ores in Canada is now fairly good. The low-grade ores are still sent to foreign smelters.

† This remark does not apply to coal mining in Nova Scotia.

‡ The figures respecting Mining Accidents in the Cobalt district were based upon the Eighteenth Annual Report of the Bureau of Mines of Ontario, 1909, Volume XVIII, Part I. On page thirteen appears the following statement,—

"The number of men employed in the silver mines of Cobalt, including also those engaged in the works for the reduction of ores at Copper Cliff, Deloro and Thorold, was 2414. The amount paid out in wages, \$2,159,055.00. Of these 1089 were underground workers and 1325 aboveground."

Another portion of the Report shows that there were 27 fatalities underground in the silver mines of Cobalt.

It has since transpired that the above quoted statement is not strictly accurate, and was intended to apply to "producing" mines only. The Deputy Minister of Mines of Ontario states that the correct figures would be a little less than 12 per 1000 of those employed underground.

employees employed underground, or nearly five times as great as among the Kaffir labourers of the Transvaal.

Much of this is, no doubt, due to the fact that Canadians have not, until the last few years, been a mining people. New mining districts have been opened up in great haste. Work has often, almost of necessity, been placed in incompetent and inexperienced hands. This has been, perhaps, to some extent, inevitable in the early stages of mining development. But we do not desire that, in Canada, the rush for the wealth of the mines should be characterized by the same coarse disregard of human life that has been evident in some other countries. We have got far enough now to take stock of the position and adopt a forward policy. If a man is employed to take charge of a boiler and engine on a small steamboat, he requires to show that he has passed a rigid examination as to his qualifications. Is it not equally necessary that there should be a standard of qualification for the man who takes charge of the development of a mine, where the lives of employees are constantly at stake? While it is most undesirable that the mining industry should be too much hampered by governmental interference, public opinion would surely, in view of the above figures, support the Government in going much farther in the way of regulation and inspection.

**Fisheries**—This is one of the greatest of our national resources, the means of livelihood of a large and important branch of our population. No effort should be spared to promote its perpetuation and continuation. Ever since Confederation there has been a department especially charged with the duty of conserving the fisheries, and extensive expert investigations have repeatedly been made. A Committee on Fisheries has lately been added to the list of select standing committees of the House of Commons, and I believe that efforts are made in the selection of the members of that Committee to appoint gentlemen who are familiar with the subject. Some of the Provinces also have Departments who are charged with the care of the fisheries and pursue an active policy. It will be a matter for you to decide as to what course can best be adopted to strengthen the hands of those who are charged with the important duty of dealing with this subject.

**Public Health**—The physical strength of the people is the resource from which all others derive value. Extreme and scrupulous regard for the lives and health of the population may be taken as the best criterion of the degree of real civilization and refinement to which a country has attained. It cannot be said that it has received too much attention, though the Provinces, the Dominion, and the municipalities have health laws and health administrations all doing effective and

useful work. There are, however, many branches of the subject, general in their character, which merit attention.

The Dominion spends hundreds of thousands of dollars in eradicating the diseases of animals, and the work, it is pleasing to know, is being done with thoroughness. But no similar effort is made by Province or Dominion to meet the ravages of diseases among human beings, such, e.g., as tuberculosis. Lately this subject was brought before the House of Commons by Mr. George H. Perley, M.P., and an illuminating debate followed. It is probable that Parliament would readily consent to the necessary appropriation for undertaking to deal with the evil. This, however, is one of the subjects upon which Federal and Provincial jurisdictions overlap, and in which any effective action will require to be carefully worked out and agreed to between all the Governments concerned. A sub-committee from this Commission, representing as it does, all the Governments, might well be able to work out an acceptable and useful plan which would receive general assent.

Other questions, such as the pollution of waters and streams, demand attention. There is a Bill at present before the Senate, dealing with this question, to which, it is understood, some of the municipalities affected to object. A study of the question will, no doubt, reveal the best method of dealing with it so as to obviate disputes and accomplish the desired results.

**Waters**—Rainfall and snowfall are the sole sources of our supply of fresh water. It is the universally essential natural resource. It is as essential to life as the heat of the sun.

Canada is exceptionally favoured in that there is no part of its great area which, under natural conditions, is entirely arid. It will be our own fault if it becomes so, as it will, in some portions, unless preventive measures are taken in time.

Of the total supply of fresh water which descends in the form of rain and snow, perhaps one-half is evaporated, about one-third finds its way to the sea, and the remainder, about one-sixth, is used.

Waters are useful for:—

1. Human and animal use to sustain life.
2. For vegetable use to sustain vegetation and render agriculture possible.
3. For navigation.
4. For power.
5. Under modern systems of sanitation, we make use of water for flushing sewers, carrying away and destroying the most valuable of fertilizers, and at the same time polluting the water into which it

is carried. This may be characterized rather as a monumental misuse than as a use of water.

The practical utility of water for domestic purposes is measured by its purity. When polluted, it becomes the worst of all sources of disease. In our present state of civilization it would be thought that, at least, we would be careful to provide pure water. Such is not the case. In this city at the present time, families who are especially careful are buying water for drinking purposes, while Montreal is struggling with a serious outbreak of fever, probably the result of the use of impure water.

The utility of the streams for the purposes of power and navigation is measured by the volume at the low-water stage. At the high-water stage, the excessive flow is wasted, and, not only so, but it always does serious damage. The damage is not, as popularly supposed, measured by the destruction of houses, buildings, fences and other visible property. The more serious damage is by the erosion of soil and consequent loss of fertility.

Most of the rainfall and snowfall which does not evaporate or run to the sea remains in the soil. This water is essential to the production of vegetation. Without it, crops become an impossibility. When the supply is lowered beyond the necessities of the crops the fertility and productive power are lowered. It is popularly supposed that nature regulates this. So it does, but under the influence of conditions created by man, and, where evil conditions are allowed to arise, the necessary supply of ground-water diminishes. It is, for instance, a known fact that, in certain upland parts of the eastern United States the average level of the ground-water, that is, the water held in the soil, has fallen by from 10 to 40 feet, while springs and wells have permanently failed. In these districts thousands of abandoned farms are to be found.

While the stock of water from rain and snow cannot be increased, the quantity available for use can be greatly augmented:

1. By methods of agricultural treatment which diminish the runoff and hold the proper quantity for absorption by the soil.

2. By catchment areas which prevent the spring freshets, obviating the destructive force which results in erosion, and making use of the water stored to supplement the flow in seasons of low water. Works of this character are now being constructed on the upper reaches of the Ottawa, and similar works will undoubtedly be required in many sections of the country. These works are essential to securing the full and proper use of our natural advantages in water supply. It is not

an academic question, nor one to be relegated to the distant future. A little investigation will show that a surprisingly large and increasing number of our streams do great damage by spring freshets, and are rendered of little service for power purposes by the meagreness of the flow in low water.

3. By preserving forest growth which furnishes the best possible reservoir.

Recognition of the above facts, and action upon them, to be useful, should be brought about without undue delay. Enormous development will take place in Canada during the next few years. It should proceed on lines that will conserve, improve and increase the water supply, rather than diminish it.

One of the greatest industrial developments of our time consists in the utilization of water by means of electrically transmitted power. The flowing waters of Canada are, at the moment, apart from the soil, our greatest and most valuable undeveloped natural resource. They are more valuable than all our minerals, because, properly conserved, they will never be exhausted; on the contrary, they can be increased. In great areas of our country they are capable, when fully developed, of supplying our entire urban population with light, heat and power, operating our tramways and railways, and abolishing the present methods with their extravagance, waste and discomfort. The time when this dream will be realized need not be, and probably is not, far distant.

What are to be the conditions under which this development will take place? Is this great national boon to be handled in such a way that the people shall forever continue to pay tribute and interest upon the continually growing unearned increment of value, or is the development to take place under conditions that will ensure due economy, full utilization, reasonable rates and a participation by the people in the profits?

The subject is comparatively new in Canada. Few vested rights exist. The field is, therefore, comparatively an open one for intelligent legislative effort. The old common law of England, the principles of which, in the main, regulate the rights to waters, is largely inapplicable to modern conditions under which water and its uses have become of prime importance. The subject requires to be dealt with by legislation in a fundamental fashion.

In California, where the use of water is a necessity of agriculture, a great body of water-right law has been built up. The people found it necessary to deal with the subject in the public interest, and they have done so. In Canada, the time has arrived when the subject

should be considered, and when the rights of the public to water and the use of it should be defined.

I know of only two instances in Canada where this subject has been approached and dealt with in a progressive spirit. The first is the case of the provinces of Alberta and Saskatchewan, in which, by the Federal North West Irrigation Act, passed before the provinces were formed, the waters are vested in the Crown and can only be taken and used for irrigation under license.

The second illustration is found in the province of Ontario, the Government of which Province has the credit of being the first to inaugurate a really progressive policy in regard to water-powers. I understand that conditions are inserted in the leases of water by that Province, protecting the interests of the public. Further, a policy has been adopted, under the operation of the Hydro-Electric Power Commission, of giving the people the greatest possible benefit from the possession of water resources. I am glad to say that, during the session of this Commission, we shall have an authoritative statement from a member of the Ontario Government as to the exact scope of the policy.

For myself, I am free to say that I think the necessities of the case demand further and more radical action. It is open to serious question if the time has not arrived when all water-power development should be under the control of the Governments concerned, requiring a license for development, and subject to general laws making regulations in the public interest, and taking a share of the profits for the public treasury with power, in the future, to readjust tolls.

Let me give you a striking illustration of what is ahead of us if this is not done. It is not in the densely settled east, but in the West where one would think that such a state of affairs had hardly, as yet, sufficient time to develop.

"The Central Colorado Power Company now claims as its "market an area from Grand Junction on the west, to fifty miles "east of Denver and 100 miles north and south of this line—an "area of 50,000 square miles, a commonwealth in itself.

"In this area this Company, holding the best powers, with "sufficient power already in process of development to supply the "demand for years, and, with its command of the market referred "to, controls the territory for the present, but also for the future "development as well, since there will be no possibility of equality "of competition for future competitors, either in meeting the cost "of producing power or in obtaining equal marketing facilities."

*Boston (Mass.) Traveller*

A present necessity in this connection is an agreement between Federal and Provincial Governments as to the limits of their respective jurisdictions. Such an agreement should be easily arrived at, and it would be more seemly and more in the public interest that it should come about by an amicable agreement than be reached through prolonged and expensive litigation, which may result in a determination founded upon technical principles of law remote from any consideration of public convenience and interest.

The water-powers of Canada are extensive and widely distributed. The reports of the Hydro-Electric Power Commission, so far as they have gone, deal satisfactorily with Ontario; but anything like an accurate estimate for the whole country has never been made. The best information at present available, points to the following figures as approximately correct:—

	POSSIBLE H. P.	DEVELOPED H. P.
Yukon .....	470,000	3,000
British Columbia .....	2,065,500	73,100
*Alberta .....	1,144,000	1,333
*Saskatchewan .....	500,000	..
Manitoba .....	504,000	18,000
North West Territories ....	600,000	none
Ontario .....	4,308,479	331,157
Quebec (exclusive of Ungava) .....	6,900,000	about 75,000
New Brunswick .....	150,000	no records available
Nova Scotia .....	54,300	13,300
Total .....	16,696,279	514,890

At 22 tons of coal per horse-power per annum (24 hours) the total possible horse-power is equivalent to 367,318,118 tons of coal per annum. The horse-power actually developed—514,890—used to the full extent, will displace 11,327,580 tons of coal per annum. The development in Ontario alone, utilized to the full extent, will displace no less than 7,285,454 tons of coal annually.

Let me call your most particular attention to the fact that water-power at the present time, in the infancy of its development, furnishes the equivalent of nearly the entire quantity of coal consumed in Ontario.

\* Unfortunately, in Saskatchewan and Alberta, most of these powers are somewhat far removed from the settled portions of the Provinces.

Ontario, it is to be noted, imports its coal from the United States. Last year the quantity imported was:

Bituminous.....	6,635,388 tons
Anthracite .....	2,035,117 tons
Total.....	8,670,505 tons

This includes the quantity brought in through Port Arthur and Fort William for western use. The supply of coal in the United States is being used up with tremendous rapidity, and though, in our generation, there is no possibility of exhaustion, there is not only the possibility, but the certainty, that increasing scarcity and expense in production will greatly enhance the cost to our consumers within a very few years.

Upon the subject of water-power development, we, in Canada, are distinctly behind the times. It may be surprising to some, as it was to me, to find that little Switzerland to-day leads the world in the development of water-powers, both in regard to advanced legislation on the subject, and also, though, perhaps not so decidedly, in regard to the economical and successful development and use of power. In an interesting and able publication by Mr. Charles Mitchell, C.E., of Toronto, containing an account of his study of European installations, I find the following:—

“In that branch of engineering science devoted to the development of hydraulic works and equipment for the generation of power, European engineers undoubtedly lead.”

And again, he says that:—

“Viewed from the hydro-electric standpoint of engineering, Switzerland undoubtedly has led all other countries, and it is there the engineer must go, even to-day, to obtain ideas as far ahead of American as are the European fashions.”

If this is the verdict of the engineer, the verdict of the lawyer must be equally decisive in favor of the pre-eminence of Switzerland. Her people found themselves, like Ontario, paying enormous tribute to foreign countries for coal; they found that their water-powers were hampered in their development and in danger of being monopolized by defective laws. They went to the root of the matter; had it fully and carefully investigated by a commission of jurists and experts, and submitted a constitutional amendment which was ratified by referendum, and thus placed the law upon a workable and satisfactory basis.

This constitutional amendment gave the Federal Congress greater powers, but I do not suggest that here it is necessary that greater powers be given to our Federal Government—that is not what, in our case, is required. What we require is that we should proceed in the same businesslike and systematic way as Switzerland has done, and secure a clear and definite agreement, settling doubtful points and leaving the way open for systematic and progressive legislation, under which all development will be properly regulated in the interests of the people. If anyone doubts the necessity of such an arrangement, let him consider the position which we find existing to-day, under which the holders of a Dominion charter are claiming the right to exploit a stream in defiance of the Government of the Province, and municipalities have already been involved in litigation on the subject.

**Forests**—When the Federal Government established a small Forestry Branch a few years ago, it is said that there was not employed, at that time, in the Dominion of Canada a single educated forester. Since that time there has been progress. A number of skilled foresters are in the employ of the various Governments, and much careful and conscientious work is being done. Chairs of Forestry have been established, and many young men are qualifying themselves for scientific forestry. The Canadian Forestry Association, formed a few years ago, is constantly labouring to arouse public interest in the subject. Yet it must be said that, in regard to this, the greatest and most available field for the conservation of an important natural resource, the work is only beginning.

The outstanding and important fact is that, in the last ten years, enlightened public opinion has clearly grasped the necessity for the conservation of the forests, and we can rely upon such public opinion being unanimous in support of all well-considered measures having that end in view. Frequent public discussions during the last few years have rendered the main facts to be considered fairly familiar. I shall not burden my remarks with statistics upon the subject of our supply of merchantable timber. The figures obtainable at the present time are far from accurate or reliable. It is certain, however, that the quantity of merchantable timber in Canada, outside of British Columbia, is much less than was popularly supposed up to a short time ago. It will be one of our first duties to thoroughly sift and supplement the presently available statistics and prepare a full and reliable statement.

A few facts stand out very clearly:—

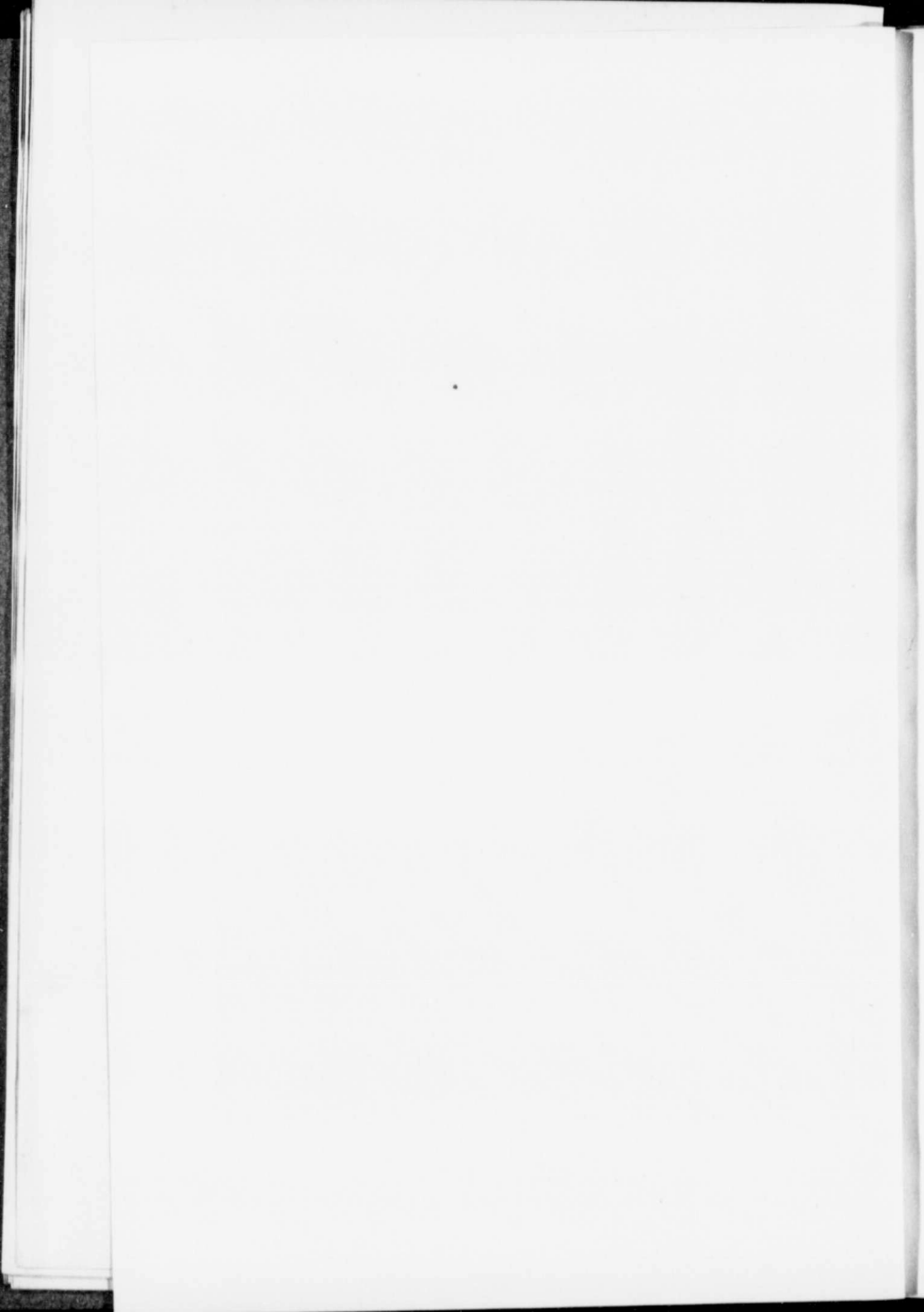
(1) Under the policy adopted by our Governments—Provincial and Dominion—the timber lands leased to operators are still subject

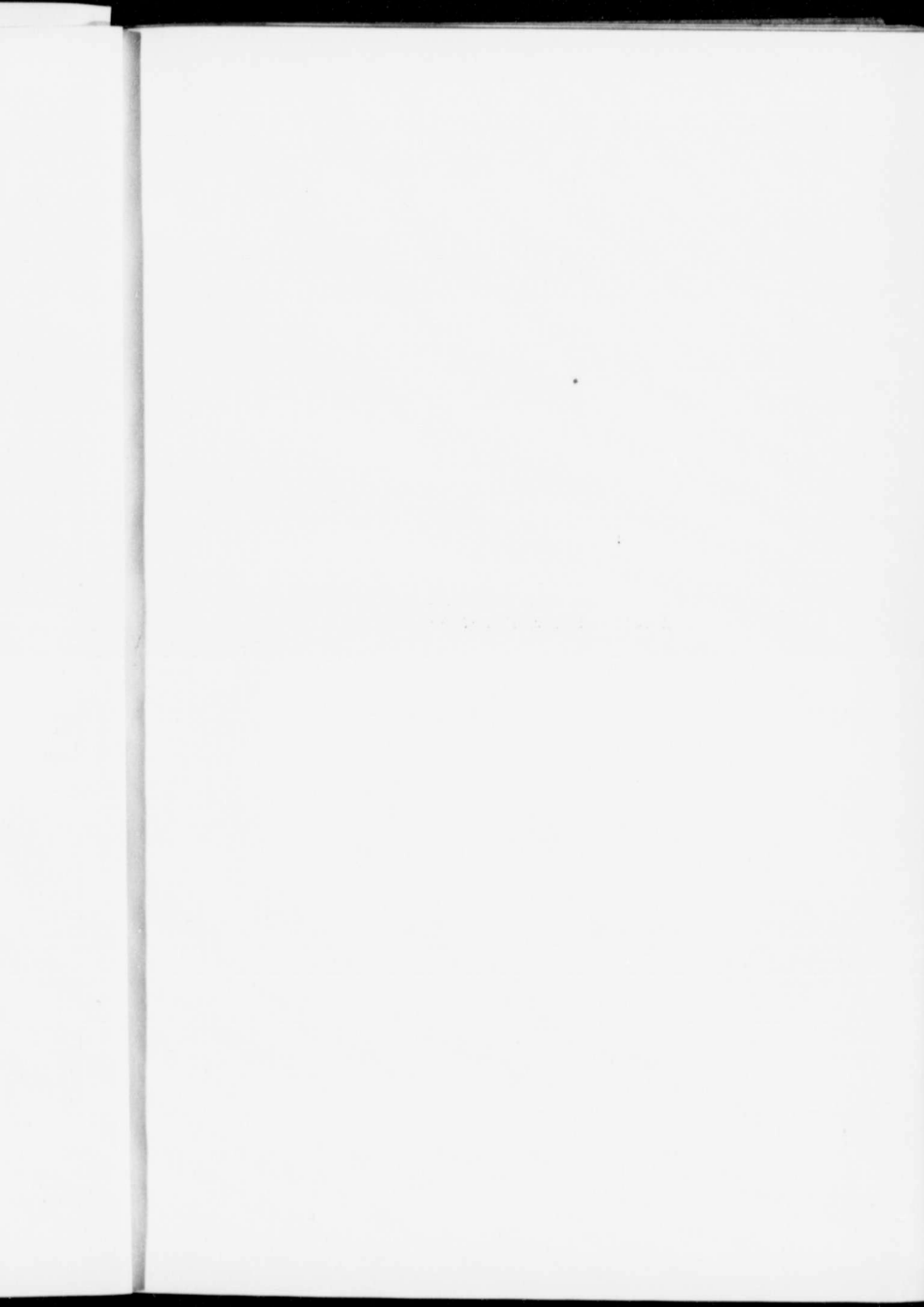


One of the best homesteads in the Crowsnest Valley. Little of the land is fit for agriculture, being too rough and stony.



Land originally forested, but burned over and washed until the stony subsoil is exposed. This particular location has been homesteaded.







Pine reproduction on land burned over fourteen years ago.



Douglas Fir, which has defied fire, growing on the lower terraces.





Young Spruce seedlings coming up under Jack-pine.

to the fullest regulation by the Governments concerned. The field is open, therefore, for improvement in regulations.

The generally admitted evils in the present methods of lumbering are:—

- (a) Destruction of young growths.
- (b) Cutting of trees not sufficiently matured.
- (c) Leaving of inflammable refuse and débris upon the ground.

(2) The great foe of the forest is fire. A good deal has been done in the way of fire protection, but much more requires to be done. Notwithstanding everything that has been said and written on the subject, and the measures of prevention taken, it remains a fact that the devastation of forests by fire is going on at a rate that is simply appalling when one considers the ultimate and not far distant result. It is doubtful if one person in ten thousand realizes the actual meaning of even the partial and fragmentary information which we have on this subject. I commend to the attention of the members of this Commission a careful perusal of a little book issued by Mr. J. F. Whitson, O.L.S., of the Ontario Department of Lands, Forests and Mines, 1908, in which the subject is ably dealt with.

Tree planting in the west is important; the renewing of the white pine forests is important; the pulp-wood question is important; many other phases of the question are important, but the all-essential thing in regard to the question of forests is to get the community wakened up to the idea that an absolutely new departure must be made and at any cost the destruction of forests by fire must be stopped.

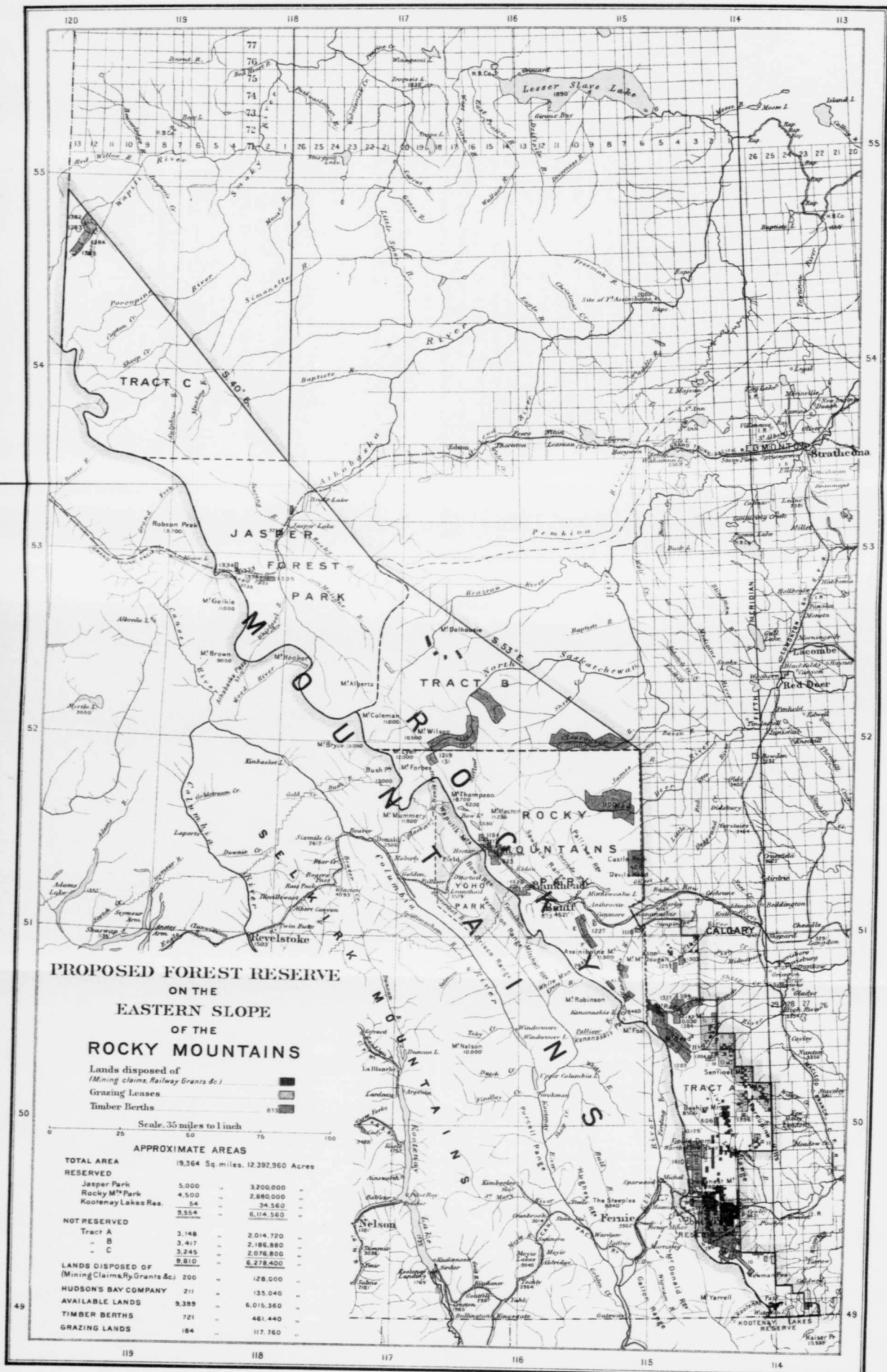
On a certain night during the past summer, I was in a log mining camp in one of the northern mining districts. The men in charge of that camp were up all night watching and fighting fires to prevent the destruction of the camp. On three sides as far as could be seen the fire was raging in a country covered with forest. It destroyed not only the timber, but the young growth and the covering of moss and forest mould, which is the only thing that sustains vegetable life on those hills. In that district the soil covering is very thin, and, once the fire goes through, there is nothing left but the barren rocks interspersed with lakes. For such destruction there is absolutely no excuse, and the most drastic enforcement of the law should be had to prevent it. A few striking examples will quickly disseminate the knowledge that no mercy will be shown to those who violate the law in this respect, and the fires started by careless prospectors and miners will cease. A sure reward in public recognition and gratitude awaits the man who will initiate such action.

(3) While the conservation of our actual supply of merchantable timber is important, yet of equally great importance is the treatment of the land, properly described as forest land, upon which there is at present no merchantable timber standing. These lands are many times larger in extent than those occupied by merchantable timber. They are, at present, excepting a few districts like the Algonquin Park, very largely neglected. The presence of a forest growth upon these lands is an absolute essential to the continued prosperity of the country. They conserve and regulate the water supply of our rivers. Without them we shall have, as they now have in many parts of the United States, destructive floods in the spring, followed by low and contaminated water all summer.

Without the protection of the forest growth and vegetable covering upon the soil the regular and even flow of our rivers will be forever a thing of the past. This is not a problem of the far distant future; it is a problem of the present. We have already reached the beginning of the results of deforestation promiscuously carried on. Within a few years we have seen on the St. Lawrence, Niagara, and Ottawa, extremes of high and low water of which we should take notice. The Federal Government is even now constructing extensive conservation works at the head-waters of the Ottawa. Artificial works, however, can only supplement, never supply, the place of nature in the regulation of stream flow.

There are some practical steps which can be taken at once, and which are of the utmost immediate importance. At the last session of Parliament the select standing Committee on Forests and Waterways investigated the question of the flow of water from the east slope of the Rocky mountains through the plains of Alberta and Saskatchewan. It was shown in evidence before the Committee that, to preserve the water-supply of those Provinces, it was necessary to prevent the destruction of the timber upon the east slope of the mountains. It was shown that the destruction of the timber meant the disappearance of the regular water-supply of those Provinces, the agricultural production of which is the pride and the hope of Canada. It was further shown that by proper steps, not only can the present available supply of water be conserved, but that it can be greatly increased. Accordingly, the Committee recommended that practically the whole of the forest lands of the east slope of the mountains, which are still under the control of the Government, be formed into a permanent forest reserve, be placed in charge of a competent warden with a sufficient staff of assistants, and that it be governed by careful and stringent regulations.





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Within the last few days I have been informed that the Government has decided to act upon the report of the Committee, and that a Bill for the purpose is now in course of preparation by the Minister of the Interior.

In the northern district of Ontario there is need of action. Of late years, the Governments of Ontario and Quebec have set apart large forest reserves. I am not fully conversant with the policy pursued by Quebec, but I understand that the Government of that Province has lately initiated an advanced policy on the subject, and has been conducting expert investigations into the question of preserving the source of supply of head-waters. We shall have a discussion of that subject from one of our members who is thoroughly competent to speak upon it. The Government of Ontario is pursuing a progressive and praiseworthy policy, having for its object the conservation of its valuable merchantable timber. The principal obstacle in the way of carrying out this policy is destruction wrought by fire. The enactment of more stringent laws on this subject should be considered.

But there is a field for work in the northern districts of Ontario in relation to the territory which does not bear high grade merchantable timber. Consider the position of the vast region stretching from Sudbury to Port Arthur and lying to the south of the height-of-land. A comparatively small part of this great tract bears merchantable timber. A further very small fraction is fit for cultivation. As to all the rest, apart from minerals, the only use to which it can be put is the growth of timber. So far as can be ascertained, prior to 1850, this tract was probably covered with timber, most of it of merchantable value. Fires, sometimes running for hundreds of miles, have travelled over it.

I quote from the above-mentioned pamphlet of Mr. Whitson.

"To-day you will scarcely find a township in the white and  
"red pine country that has not been burned, or partly burnt over,  
"and, in many instances the fire has swept over them several times.

"The fire of 1871 started almost at every point of the compass  
"along the north shore from French River to Kaministiquia on  
"Lake Superior.

"This fire swept with fierce energy over an area of more than  
"2,000 square miles, leaving blackened and giant pines to be a  
"reminder for more than half a century of the immense destruc-  
"tion there and then caused, converting a virgin forest into a barren  
"and desolate wilderness."

He refers you to a fire of 1855,

"which burnt easterly to the shores of Lake Timiskaming, up the Montreal River to its source, and westerly along the height-of-land for over 200 miles, to near Michipicoten." Two thousand square miles were devastated. I give these brief quotations as a slight indication of what has taken place.

Particularly since railway construction began, the greater portion of this tract has been, and is being, repeatedly burned over. If you look through the car windows as you travel through it, you will see stretches of bare and rocky hillside followed by *brulés*, followed again by tracts upon which extensive young forests of jack-pine rise to the height of ten, fifteen and twenty feet. But over this country fires are repeatedly passing, and the territory is quickly and surely getting to the point when every vestige of forest will be gone. Following this comes the stage in which, robbed of the protection of the trees, the vegetable mould and moss, which is the only covering of the rocks, dries out and becomes inflammable. Then it burns. It is happening every year. I could show you places which, within thirty years, were covered with forest, where the successive steps have taken place, and nothing remains but the bare rocks. There is nothing more absolutely certain in nature than that, unless steps are taken to protect it, the whole territory mentioned, with the exception of the few and small tracts fit for agriculture, and occupied as such, and small settlements along the railway, will be completely denuded, not only of trees, but of the soil, within the lifetime of men now living. No one can tell the physical effect on climate of such a catastrophe, but, apart from that, the mind shrinks from the very idea of such a rocky waste in the heart of the country.

My information is to the effect that the fires are almost wholly caused by railway locomotives. Fires occurring from any other causes can be pretty effectually prevented by stringent laws and effective enforcement by the Province, but Dominion railways must be dealt with by Federal legislation. The laws of Canada relating to fires caused by railway engines certainly require amendment. Upon what principle do we permit railways to spread abroad destruction of public and private property? The time may have been when the necessities of transportation and the comparative poverty of the railway companies made it impracticable to enforce stringent laws, but that time has surely passed, and I have no doubt the great companies will themselves readily realize their duty in this respect.

This question of prevention of fires arising from railways is a very large and difficult subject, but we must be prepared to face large and

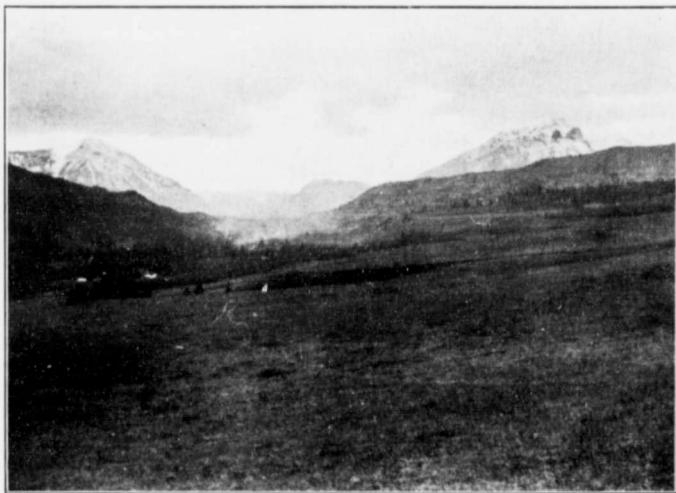
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Crowsnest Valley from Coleman to McLaren's Mill. The meadow land is fit for agriculture, if drained; the terraces on the left are fit only for growing timber.



Burned valley of Oldman river, showing forest replaced by an unproductive sod.

difficult subjects if we desire to accomplish important results. Throughout the whole of the district which I have mentioned the land immediately adjoining the railway track is covered with inflammable material, which, in dry weather, will generate fire from the smallest spark. As conditions exist, frequent fires are inevitable. The condition is one for which a remedy ought to be insisted upon.

With proper protection from railway fires, the Government of Ontario could make a reserve of the whole district, and place it in charge of a warden and staff who would protect it from fire at a comparatively slight cost, and arrest the course of destruction which is going on. Given the slightest chance, the land will reforest itself. Even now there are extensive growths of young trees along the railway line, but unfortunately, under existing conditions, they are doomed to destruction. Planting might be easily and economically carried on to a considerable extent, but, without that, throughout the greater extent of the territory, reforestation will be effected by nature.

Here is the greatest opportunity that any Government ever had to conduct an extensive operation in forestry—at trifling expense and with certainty of valuable returns. The territory would be a mine of wealth.

Railway ties are every year becoming more scarce and difficult to obtain. I am told they are now worth from fifty to sixty cents per tie. Great quantities of ties are required now and the demand is steadily growing. In the United States, an important railway company has actually bought land and commenced to plant trees in order to supply ties for the future. The cut-over and burned-over Crown lands of Ontario and Quebec would, in time to come, if properly protected and fostered, supply ties for the whole of Canada from the New Brunswick line to Regina, and the Governments of these provinces would draw revenues from them which would be counted in millions.

The trouble with us in Canada is that our country is so great we are apt to overlook its possibilities. Especially are we prone to neglect what does not produce present results. It is no doubt true that present and pressing problems demand incessant attention. Nevertheless, we must look also to the future. The man who takes up this subject, grapples with it and fights it to a successful conclusion will write his name very clearly and distinctly in the history of the country.

Then there is the great northern region of Quebec and Ontario, and that portion of New Brunswick through which the National Transcontinental railway is being constructed. The House of Commons'

Committee on Forests and Waterways made a partial investigation into the question of prevention of fires in these districts at the last session of Parliament, the record of which will be available as a basis for further work. It appears that the Transcontinental Commissioners have been giving attention to the subject in conjunction with the Provincial Governments, with, so far as is known, fairly satisfactory results. I understand also that the Government of Quebec has recently had the matter under serious consideration. The investigation to which I referred was necessarily somewhat cursory, and the matter should be systematically and thoroughly gone into in order to make it absolutely certain that the same unfortunate results which have followed railway building in other forest districts will not follow there also.

In referring to this matter I speak with perfect frankness. As between Governments and political parties and public men, if there has been neglect we have all been to blame. What is required now is direct and cordial co-operation between Dominion and Provincial authorities.

**Lands**—Agriculture is the foundation of all real and enduring progress on the part of Canada. It is one of the striking facts of the present social condition in the United States and in Canada that, with a few exceptions, those men who, by reason of strength of character and intellectual pre-eminence, take the lead in public affairs, in professional life and in scholarship are, as a rule, removed not more than one or, at most, two generations from ancestors who tilled the soil.

The possession of a preponderating rural population having the virtues and strength of character bred only among those who follow agricultural life, is the only sure guarantee of our national future. The possession of such a population depends upon the maintenance of the fertility of the soil.

The idea that such fertility will endure without the most anxious and strenuous care is contradicted by the well-known facts of history. The countries from which Xerxes led his hosts to the attack of Greece were highly populous. Persia, Babylonia, Palestine and surrounding countries were the homes of dense populations of many millions, and all our information about them leads to the conclusion that the inhabitants lived in a high degree of comfort. To-day these countries are comparative deserts. Egypt, the ancient store-house of the world, became largely barren, and remained so for centuries, with its rural population sunk in wretchedness and poverty, until British engineering skill and administrative ability gave it a new lease of life. Spain, under the Saracens, is declared by high authority to have been more

highly developed agriculturally than any country of modern Europe up to twenty-five years ago. Peru and Mexico were agriculturally in a better condition, with more enlightened laws relating to agriculture before the days of Pizarro and Cortez, than they are now, though Mexico, under the present administration, is making wonderful progress. Coming closer home, there are thousands of farms in the New England states which are practically abandoned through depleted fertility of soil.

We have no great reason to be proud of our treatment of the soil in modern countries. We have never approached the economic wisdom of the biblical law which governed the Jews in their treatment of the land. Not long since I read that, in the time of the Incas, the breeding of the birds which produced guano, off the coast of South America, was strictly protected by law, while modern civilization has permitted the supply of this most valuable fertilizer to be seriously diminished by ruthless exploitation.

On the whole, the most successful efforts to preserve the fertility of their soils under the pressure of a great population have been made by China and Japan, countries which we are disposed to think can teach us nothing, but have everything to learn from us. As a matter of fact, China and Japan alone go the whole possible length in avoiding the waste of fertilizers and restoring to the soil everything that is taken from it. Speaking generally, and leaving Japan out of consideration in the words of a recent authority, "wherever in this world there is "a large population dependent for its livelihood upon soil which has "been cultivated for upwards of two centuries, there is extreme and "depressing poverty."

We are, in the practice of our best agriculturists, more fully abreast of the most advanced nations in agriculture than we are in the treatment of any other branch of natural resources, but our advanced agriculturists are far too few in number. The development of scientific agriculture is now being promoted among us by a large number of institutions supported by public and private funds. Experimental farms and agricultural colleges are rendering services of the highest value. The application of agricultural chemistry affords a vast field for constructive effort. In connection with these institutions such men as Dr. J. W. Robertson and Dr. W. Saunders, Director of Experimental Farms, have done a work the importance of which it is impossible to over-estimate.

Is there, therefore, nothing for us to do in this department? On the contrary, speak for a few minutes with any minister administering

such institutions, and, if his heart is in his work, he will tell you that there are whole fields of labour, of valuable research and investigation, which he is unable to attack for lack of men and means.

We are fortunate in having among our membership men eminently qualified to direct our deliberations upon this subject, and under their advice it will, no doubt, be possible to do much valuable work.

Let me conclude by calling your attention to the unique position occupied by Canada at the present period of its history. For many years, the progress of the country was comparatively slow. A combination of circumstances was responsible for that fact. Sparse population, great natural obstacles to transportation, peculiarities of geography, our proximity to the more wealthy and attractive United States—all combined to retard progress. It has taken the toil of generations to attain the present position. Now our time has come. Population is flowing in; development of resources is proceeding rapidly; trade is growing. In all human probability a period of great expansion and prolonged prosperity lies before us.

It is as certain as that day follows night, that this condition will bring a large influx of capital, particularly from the country to the south. This capital will come with the object of acquiring whatever revenue-producing assets Canada possesses. It will not come for philanthropic purposes. It will come to acquire and to monopolize. It will come with a volume and a power that no single individual or corporation can resist. I could, if I chose, give you some very striking illustrations of how this movement has already begun, but that is not necessary. It does not take a very profound observer to see that, within ten years, United States capital will be on the spot to acquire nearly every one of our great natural sources of wealth, except our farm lands and fisheries, which, in the nature of things, cannot be monopolized, though they may be heavily tolled by monopolists.

If, then, we are desirous that Canada shall remain Canadian, a good place for Canadians to live in, and a good place for our children to make their homes, it is in the highest degree important that we should endeavour to promote such improvements in the organic laws of the country as will prevent the monopolization of the sources of wealth, and, at least, ensure to the people their full share of the wealth which is produced therefrom. We have the experience of other countries to draw from, and it will be our own fault if we do not profit by it.

This Commission can exert a powerful influence in the right direction. It can strengthen the hands of all who are desirous of following

progressive policies. It can help to render the labour of investigations in the various branches of scientific thought available for the service of the country. It can be the vehicle by which enlightened and educated men can bring an influence directly to bear on the administration of affairs. In a word, it can, if it will, be the embodiment of public spirit and advanced thought.

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