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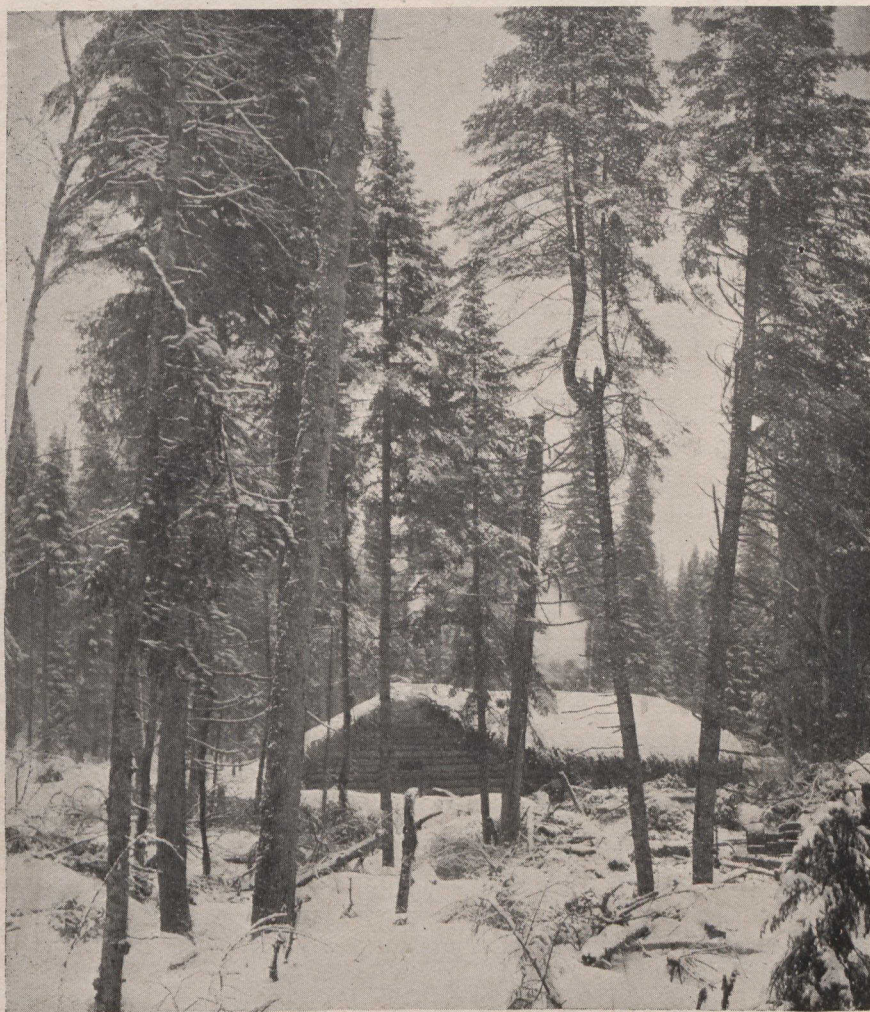
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Canadian Forestry Journal



A NEW BRUNSWICK LUMBER CAMP.

APRIL 1910

Canadian Forestry Journal

The official organ of the Canadian Forestry Association. A magazine devoted to the interests of forestry and in general to the advocacy of the wise and conservative use of the natural resources of Canada.

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Canadian Forestry Journal

VOL. VI.

APRIL, 1910.

No. 1.

THE CONSERVATION CONVENTION.

The convention for the consideration of forestry and other conservation problems, announced some time ago, is definitely announced to be held during the second week in June, at some point in the province of Quebec, probably either in the City of Quebec or in the City of Montreal. The

convention will be held in connection with the second meeting of the Commission of Conservation and a large number of those most familiar with, and interested in, the problems of Canadian forestry will be present.

THE ANNUAL BUSINESS MEETING.

The eleventh annual meeting of the Canadian Forestry Association was held on Thursday, March 10th, 1910, at the office of the Superintendent of Forestry, Ottawa. In the absence of the President, Mr. Thos. Southworth, the chair was taken by the Vice-President, Senator W. C. Edwards. Among those present were Messrs. W. Little, Westmount, and E. Stewart, Montreal, ex-presidents of the Association; Dr. B. E. Fernow, Toronto; Messrs. Ellwood Wilson, Grand Mere, Que.; G. C. Piché, Quebec; Frank Davison, Bridgewater, N.S.; Dr. Wm. Saunders, Frank Hawkins, Prof. John Macoun, J. M. Macoun, A. C. Campbell, L. H. Newman, G. S. Proctor, E. F. Drake, R. Patching, and F. W. H. Jacombe, Ottawa, and Secretary Lawler, of Toronto.

Shortly after the opening of the meeting a telephone communication was received from the President, to the effect that it would be impossible for him to be present; owing to having missed a connection on a return trip from Cobalt, he had only that morning reached Toronto. Letters expressing regret at inability to be present were also received from Messrs. H. M. Price and E. G. Joly de Lotbiniere, of Quebec; J. B. Miller and J. O. Thorn, of Toronto, and Mr. G. Y.

Chown, of Kingston. A verbal message was also conveyed from Mr. R. H. Campbell, Superintendent of Forestry.

The minutes of the last meeting and those of the conventions at Regina and Fredericton were, on motion, taken as read.

DIRECTORS' REPORT.

The Secretary then presented the annual report of the Directors. After noting the election of territorial vice-presidents, the report briefly reviewed the conventions at Regina and Fredericton. The appointment of the permanent secretary was referred to, and the work performed by him in connection with the two conventions and also in his lecture tours. The grants from the Dominion and Provincial Governments (Ontario, Quebec, New Brunswick and British Columbia) and their probable continuance were also discussed.

To the banks which have assisted in the work of the Association by making a number of their managers members of the organization (viz., the Bank of Montreal, Bank of Commerce, Molsons' Bank and the Merchants' Bank), had been added the Bank of New Brunswick; this had been effected by the Secretary during

his late visit to New Brunswick. The Bank of British North America also had encouraged its managers to become members of the Association.

The balance to the credit of the Association was \$2,561.10, the receipts during the year having been \$6,856.45 and the expenditure \$4,295.35.

The total number of members was 2,471, an increase during the year of 566; this total, however, included a number of members in arrears and a revision of the list would probably reduce the number somewhat.

The JOURNAL had appeared quarterly with an average issue of about 2,750 copies, the surplus copies having been distributed to probable members of the Association. Of the English edition of the annual report 3,000 copies had been issued, and of the French edition 2,000. In connection with the preparation and printing of the latter the thanks of the Association were due to Mr. G. C. Piché, of the Department of Lands and Forests of Quebec. The newspaper bulletins had also been continued.

The publication by the Forestry Branch of statistics of the timber production of the Dominion and the organization of the Commission of Conservation were also referred to.

On motion the report was received and adopted.

Reports were also presented by the Asst. Secretary and the Treasurer and were received and adopted.

It was decided to change the date of the annual meeting from March to February, to increase the number of directors from fifteen to twenty-one, and to make past presidents from (and including) 1909-1910 ex-officio directors.

The Secretary was instructed to get data regarding the formation of provincial branches and also regarding the publication of the JOURNAL monthly. He was also instructed to write Msgr. J. C. K. Laflamme and Mr. Hiram Robinson, expressing the sympathy of the members of the Association with them in their illness.

The following were elected a com-

mittee to study the possibility of a general log rule for the whole Dominion: Dr. Fernow, Dr. Judson Clark, Messrs. Ellwood Wilson, G. C. Piché, and Alex. MacLaurin.

The following were elected as a committee to consider the fire laws of the Dominion and the several provinces and to suggest legislation that would in their opinion more effectively prevent and control forest fires: Dr. Fernow, Mr. Southworth, Mr. W. C. J. Hall, Dr. Judson Clark, Mr. Piché, Mr. Davison and Mr. Ellwood Wilson.

Resolutions were passed expressing satisfaction at the formation of the Commission of Conservation and reaffirming the position taken last year, upon motion of Prof. W. T. MacClement, of Queen's University, and Mr. A. Bergevin, of Montreal, as to the need of text books for schools. Mr. G. Y. Chown, of Kingston, gave notice of a motion for the next annual meeting to the effect that the Association employ a technically trained forester.

The following resolutions passed at the annual convention in Fredericton were confirmed:—

“That the Canadian Forestry Association endorse the project set forth in the report of the Parliamentary Committee of the House of Commons recommending that the available forest land upon the eastern slope of the Rocky Mountains be constituted a permanent forest reserve.

“That in the opinion of the Canadian Forestry Association the governments of the Dominion and the several provinces should reserve to Canada all the waterpowers within their boundaries, especially those in waters bordering on the neighboring republic.

“That in the opinion of the Canadian Forestry Association the Dominion government should pass more stringent laws to compel railway companies to take more precautions to prevent forest fires along the lines of their railways, and also that the Intercolonial Railway and the Prince Edward Island Railway should be

placed in the same position as other railways and compelled to conform to the fire laws of the several provinces through which they pass.

"That the Canadian Forestry Association would urge upon the Dominion government and the governments of the several provinces the necessity of reserving the timber lands at the headwaters of rivers and streams so as to maintain an even flow of water.

"That the Association would recommend that the various provinces cause the existing forest reserves, and those to be created, to be of an absolutely permanent character, so far as actual forest land is concerned."

ELECTION OF OFFICERS.

The election of officers was then proceeded with and resulted as follows:—

Patron, His Excellency the Governor-General.

Honorary President, Sir Wilfrid Laurier.

President, Hon. W. C. Edwards.

Vice-President, G. Y. Chown.

Secretary, Jas. Lawler.

Asst. Secretary, F. W. H. Jacombe.

Treasurer, Miss Marion Robinson.

Directors, Wm. Little, Hiram Robinson, E. G. Joly de Lotbiniere, E. Stewart, H. M. Price, Hon. Sydney Fisher, R. H. Campbell, Mgr. J. C. K. Laflamme, W. B. Snowball, J. B. Miller, W. A. Charlton, Gordon C. Edwards, Dr. B. E. Fernow, Ellwood Wilson, R. L. Borden, Aubrey White, A. P. Stevenson, F. C. Whitman, G. C. Piché, A. McLaurin, Carl Riordon and Thos. Southworth.

THE FREDERICTON, 1910, CONVENTION.

"I have attended many conventions of the Canadian Forestry Association in the years of its existence, and I think I am safe in saying I never attended such a successful convention as this one."

In these words did Hon. Senator Edwards, the Chairman, describe the Fredericton Convention in his closing remarks to the delegates and this was the feeling of others who were in a position to speak.

When Fredericton was selected as the place for the Convention of 1910 there were many who feared a mistake had been made, and that but a poor attendance and small interest would result. But the event proved that not only did many delegates attend from different parts of Canada and the United States, but it demonstrated, particularly, how much aroused are the people of New Brunswick, for delegates came from every part of the province. Perhaps the fact that twelve million acres out of a total of somewhat more than seventeen million acres in the province are still under forest accounts

for the interest which men of all businesses and professions feel in forestry. From Nova Scotia also came a large delegation.

The time had been well chosen by the Government of New Brunswick, upon whose invitation the convention was held, as, owing to the opening of the Legislature and the holding of a series of agricultural conventions, as well as the forestry convention, Fredericton was the centre of interest for the week. The only difficulty was that of hotel accommodation, and this was gotten over by calling upon the people of the city for rooms in their residences, a call to which they generously responded.

The sessions of the convention were held in the handsome Legislative Chamber of the Provincial Parliament Buildings, Parliament being adjourned for the two days of the convention. This proved an ideal place for such a gathering. The delegates were seated on the floor of the House in which, in addition to the seats of the members, a large number of chairs had been placed, while the galleries

were occupied by visitors, among whom there was always a good sprinkling of ladies.

THE OPENING.

The convention was opened by His Honor Lieut.-Governor Tweedie, who from his intimate knowledge of forest conditions was able to direct the delegates to the chief points before them in an admirable brief address.

The chair at the opening session was occupied, in the absence of the President, Mr. Thomas Southworth,

ship C. Fred Chestnut, Mayor of Fredericton. Over one hundred and ninety delegates signed the record of attendance. The names will be found at the conclusion of this article.

Owing to the fact that the papers and discussions at the convention will appear in the annual report, which will be issued to members as soon as possible, only the briefest outline is given here.

HIS HONOR THE LIEUT.-GOVERNOR.

His Honor the Lieut.-Governor, in



The Provincial Parliament Buildings in Fredericton, N.B.

of Toronto, by Hon. W. C. H. Grimmer, Surveyor-General of New Brunswick, and Vice-President of the Association for the province. Hon. Senator Edwards, Vice-President of the Association, arrived in time for the opening of the afternoon session, when those on the platform in addition to those already named were: Hon. Clifford Sifton, Chairman of the Commission of Conservation; Hon. J. D. Hazen, Premier of New Brunswick; Hon. Clifford W. Robinson, leader of the Opposition, and his Wor-

opening the meeting and welcoming the delegates, said the interest in the forests had been aroused not a moment too soon, seeing how much depended upon them—timber, agriculture and stream flow. Because of indifference and apathy in the past great tracts worth millions to the province had been devastated by fire and improper cutting. Where permanent improvements were made it was right that posterity should help in paying for them; and conversely posterity had a right to ask that such

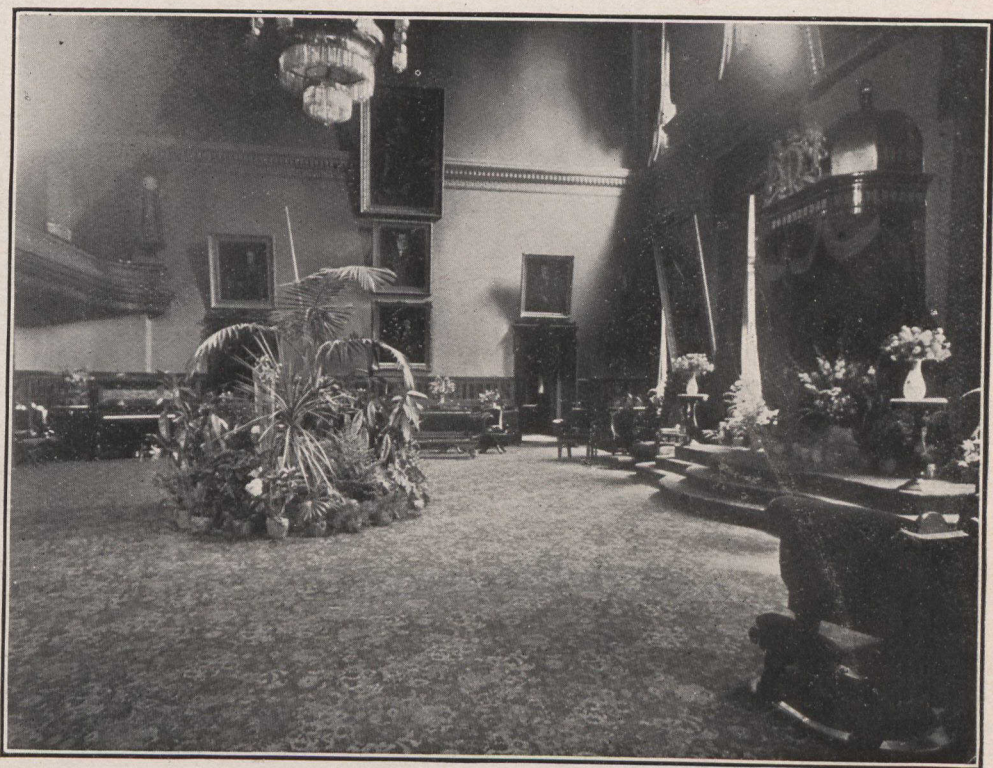
assets as these should be protected. There was a cry "Back to the Farm." That was right, but it needed to be amended to read "Back to the Farm and Protect the Forests."

Letters of regret were read from a number of representative citizens who were unable to be present. Among these were letters from His Excellency the Governor-General; Rt. Hon. Sir Wilfrid Laurier; Mr. R. L. Borden, M.P.; Mr. Gifford Pinchot, and Dr.

and individually."

ADDRESSES OF WELCOME.

Hon. J. D. Hazen, Premier of New Brunswick, in his address of welcome, noted that, having regard to the proportionate amount of land devoted to forests, as compared with farms, no province in the Dominion was more interested in the lumber industry than New Brunswick. He called attention to the fact that when the present



The Legislative Chamber, in which the sessions of the convention were held.

B. E. Fernow. The President, Mr. Thomas Southworth, in his letter of regret, reviewed the work of the year and urged the appointment of a committee to consider the fire laws of the several provinces.

Sir Wilfrid Laurier wrote: "The forestry question is one which by associations, by meetings, by lectures and by every possible method should be presented to the ever close attention of the Canadian public, collectively

Deputy-Surveyor-General of New Brunswick, Lieut.-Col. T. G. Loggie, entered the Crown Lands office the revenue was only \$25,000 per year while to-day it was \$400,000; and there was no reason why, with proper care, the forests should not provide an increasing source of revenue for all time. The value of forests in attracting tourists was noted, as was also the fact that by the application of game laws the forests of the province

were full of moose and elk, whereas these animals were almost extinct a century ago, according to writers of that time.

Mr. Clifford W. Robinson, and Mayor Chestnut, of Fredericton, also warmly welcomed the delegates, and short addresses were delivered by representative men as follows:—

REPRESENTATIVES SPEAK.

Mr. Irvin C. Williams, Deputy Commissioner of Forestry of Pennsylvania, said that in Pennsylvania about a million acres of land were held by the state for economic and scientific forestry. To care for these lands there was an academy to educate young men, and to protect forest lands from fire a fire law was passed in 1909. This placed the matter wholly in the hands of the Department of Forestry. An outgrowth of this work was the Health Department which was caring for tuberculous patients by sending them to the mountain regions, while the people were allowed to use these reserves as health-giving camping grounds.

Hon. B. F. Pearson, of Halifax, spoke for Nova Scotia, Mr. James M. Macoun told of the work of the Geological Survey in securing information about the resources of northern Canada, and Mr. H. J. P. Good, Manager of the Dominion Exhibition, St. John, also spoke briefly.

EDUCATIONAL ASPECT OF FORESTRY.

The reading of papers was then taken up, the first being that of Dr. Cecil C. Jones, Chancellor of the University of New Brunswick, on "The Educational Aspect of Forestry." Dr. Jones held that education was necessary in order to secure the right kind of laws and regulations. As showing what other countries were doing he reviewed the work in Germany, Austria, Switzerland, France, Russia, Sweden, Italy, Great Britain, India and the United States. Canada had made a beginning in the general dissemination of knowledge through the Canadian Forestry Association,

and in the training of young men at the University of Toronto and the University of New Brunswick. She needed to develop the scientific study of forestry in institutions and in selected forest areas. Canada also needed to bring this work into the elementary schools through the enlargement of the scope of nature study. Arbor Day should be given its intended place and to this end he suggested the preparation of a small pamphlet to be sent to the teachers of primary schools.

THE COURSE IN FORESTRY.

Mr. R. B. Miller, Professor of Forestry in the University of New Brunswick, read a paper entitled "The Forestry Course in a Lumbering Region." Prof. Miller sketched the course in the Department of which he is the head, and pointed to the advantages this school had in the nearness of logging and driving operations, and in the possession by the University of land near by, suitable for forestry work by the students. The point where care must be exercised was that of dividing the work fairly between the practical and theoretical sides.

FORESTRY IN NOVA SCOTIA.

Mr. F. C. Whitman, of Annapolis Royal, N.S., President of the Lumbermen's Association of Western Nova Scotia, dealt with "Forestry in Nova Scotia." People were now beginning to realize that conservation was a commercial proposition. The solution of the forestry problem lay, he believed, in the fixing of incontrovertible values for forest land. If this were done a credit would be established that would obviate the necessity of sacrificing timber by lumbermen. He spoke of the new Fire Act worked out by the lumbermen and the government in co-operation, and he also dealt at considerable length with the reconnaissance survey of Nova Scotia timber areas now being carried on by Dr. Fernow and his assistants.

These papers were discussed at considerable length by Dr. G. U. Hay, Mr. Ellwood Wilson, Mr. W. B. Snowball, Mr. G. F. Hill, Mr. Whitman, Hon. J. D. Hazen, Hon. W. C. H. Grimmer, and Prof. Miller. Mr. Hazen dealt with the fire danger in New Brunswick, particularly in regard to the government railways. The rate of growth of trees in New Brunswick was also keenly debated.

WEDNESDAY AFTERNOON.

Senator W. C. Edwards, Vice-President, took the chair in the afternoon, and filled the post during the remainder of the convention in a way that made things go with a swing. After congratulating the people of New Brunswick upon the size and character of the gathering, he introduced Hon. Clifford Sifton, Chairman of the Commission of Conservation, who spoke on the relation of that body to the objects of the Canadian Forestry Association. The Chamber was filled, both floor and galleries, with a most attentive audience of ladies and gentlemen.

HON. CLIFFORD SIFTON.

Hon. Mr. Sifton confessed to a feeling of surprise at the large audience. He had expected to speak to fifteen or twenty gentlemen, but he did not complain. On the contrary anything of value he had to say would be more effective because of the large number present. He first showed the progress made in forestry in Canada in the last ten years. Ten years ago he, as Minister of the Interior, had had fifteen thousand dollars placed in the estimates to establish a Forestry Branch. This was opposed on both sides of the House as a fad, and he was told that there was not one competent forester in Canada to do scientific forestry work. The change since then in the interest in this subject was due in a large measure to the campaign of the Canadian Forestry Association. He went on to enumerate some of the recent progressive movements. British Columbia was

reorganizing its sale methods, the Dominion Department of the Interior had set aside a large number of timber reserves, which were being protected and developed; in Ontario there was a very complete fire system and large areas had been set apart for reserves; Quebec had reserves, a fire-ranger system and had sent men to Europe to study protection there; and New Brunswick and Nova Scotia were also moving in regard to forest protection. The Commission of Conservation would as far as possible assist and cooperate with the Canadian Forestry Association in carrying on its work to arouse interest and promote scientific forestry. The Commission could act only in an advisory capacity, and in order that its findings might have value they must be backed by public opinion, which it was the work of the Association to create. The chief danger to the forest was fire, particularly among the young growth. The danger from railways was referred to and the aims of the Commission to have government railways brought under the same laws as other railways noted. Cutting away of the the forests did affect climatic conditions and it particularly affected the flow of rivers, as seen in a striking instance in the Grand River in Ontario.

Careful calculations showed that the supply of timber in the United States would not last, at the present rate of consumption, more than thirty years; and should the United States have to look to Canada for timber our forests would last but seven years. Within the lifetime of those before him the governments would be compelled to limit the amount cut. He commended the Ontario regulations prohibiting the export of unmanufactured logs or pulpwood cut on Crown Lands, and also the proposal of Quebec to the same effect, and hoped New Brunswick would fall into line. He favored a permanent tenure to the lessees of timber limits, as opposed to short term leases. He advocated the formation of a forest



Senator W. C. Edwards, President of the Canadian Forestry Association, 1910-1911,
and Chairman of the Forestry Committee of the Canadian Commission
of Conservation. He presided over the Fredericton Convention.

reserve on the eastern slope of the Rocky Mountains and opposed the proposal to dam the St. Lawrence at the Long Sault Rapids, which was, he felt, not in the interest of Canada, and he asked the Association to oppose it also.

LUMBERING ON THE MIRAMICHI.

Mr. J. P. Burchill, M. P. P., of Nelson, N. B., whose family have been lumbering in New Brunswick for several generations, read a paper on "Lumbering on the Miramichi." He traced the history of lumbering for over a hundred years from the time of masts and squared pine timber down through the ship-building period to the present stage of deals and spool wood. Destruction by fire and cutting had greatly exceeded the natural growth, as shown by the decreased sizes of material now being taken out. He held that the export of pulpwood resulted in a heavy drain on the forest in proportion to the amount of labor employed, and contrasted with this the large amount of skilled labor required in a paper mill now operating on the Miramichi for the small quantity of timber used.

THE PULPWOOD QUESTION.

Hon. Charles E. Oak, of Bangor, Maine, and Manager of the Miramichi Lumber Company, of Chatham, discussed "The Pulpwood Question in New Brunswick" in a long paper. He said that when timber was cut for pulpwood eighty per cent. of the tree was taken out of the woods, while for lumber but from sixty to sixty-five per cent was taken out. Neither deal nor pulpwood was a finished product and there would be as much reason in prohibiting the export of the one as the other. He held that it would be impossible to force paper mills to come to New Brunswick by prohibiting the export of pulpwood, because New Brunswick lacked the waterpowers necessary to produce "ground wood." It took three hundred horse power to run one grinder producing four tons of pulp per day.

Coal cost \$4.50 laid down at Chatham and this gave a cost for coal alone of \$8.44 per ton of pulp, which was impossible with pulp selling at \$17.50 per ton.

PULPWOOD DISCUSSED.

Mr. W. B. Snowball, of Chatham, in reply, read from the statement of the International Paper Company before the United States Ways and Means Committee in the tariff enquiry. This was to the effect that that company employed, all told, over fifteen thousand persons in the mills and woods operations, that 35 per cent. of the company's wood came from Canada, and, further, that the taking off of the duty on paper or the shutting out of raw material would drive them out of business or compel them to build mills in Canada. Mr. Snowball's idea was that Canada should so handle her resources as to develop her industries and provide employment for Canadians. As to the impossibility of making pulp in New Brunswick he pointed to the mills on the Miramichi, and also to sulphite pulp mills in Ontario which were run by steam. Ground wood might be made at Grand Falls and sulphite in other parts of the province. As to the price of coal the price at Chatham was \$1.85 per ton for the kind of coal the mills used.

Senator Edwards asked Hon. Mr. Grimmer to take the chair, and then joined in the discussion. He thought it would be a mistake for Canada to prohibit the export of pulpwood. The pulp mills would come to Canada automatically, and no legislation would hasten the process.

WEDNESDAY EVENING.

On Wednesday evening a reception was tendered the delegates by His Honor Lieutenant-Governor Tweedie and Mrs. Tweedie, Hon. J. D. Hazen and Mrs. Hazen and the members of the Executive Council. The reception, which was held in the Legislative Chamber, was a most successful and delightful function. The rooms were

handsomely decorated with bunting, flowers and palms. Large numbers attended and spent a most enjoyable evening.

THURSDAY MORNING.

Proceeding on the plan of Wednesday morning there were first a number of short addresses.

Mr. W. R. Brown, Secretary of the New Hampshire Forest Commission, and Prof. E. J. Zavitz, of the Ontario Agricultural College, Guelph, brought greetings from their respective bodies.

Mr. A. B. Warburton, M.P., spoke for Prince Edward Island and made special reference to the sand dunes there in areas that he was convinced had been once covered with forest. The Government should make an experiment in reforesting them.

FORESTRY IN QUEBEC.

Mr. G. C. Piché, Chief Forest Engineer, Department of Lands and Forests, Quebec, spoke on behalf of Hon. Jules Allard, Minister of Lands and Mines, who was unable to attend. The work of supervising the cutting in Quebec which had been organized by Mr. A. Bedard and himself was being enlarged. They now supervised the operations in half the province. They had fifteen student assistants, besides rangers. While he felt more could be done by protecting the forest than by planting, still they were supplying young trees for this purpose and from the forest nurseries at Berthierville about half a million trees per year were sent out. He favored having branches of the Association in the different provinces, and a general log rule for the whole Dominion.

DOMINION FOREST RESERVES.

Mr. Abraham Knechtel, Inspector of Dominion Forest Reserves, told of the work being carried on by the Dominion Forest Service in the prairie province and in the forty-mile belt along the Canadian Pacific Railway in British Columbia, all of which comes under the control of the Do-

minion Government. The work fell into three classes: the forests, the forest reserves and tree planting. In the forests the chief work was the protection from fire and the overseeing of the work of cutting. On the reserves there was the protection from fire by patrol, by plowing and burning fire-guards, by opening up fire roads and by clearing the forest floor of debris. This latter was accomplished by allowing the settlers to take out only the "dead-and-down" wood. Young trees for planting were furnished free to the settlers, and last season about two and a half million trees were sent out. This tree planting was rapidly improving the appearance and comfort of the prairie homesteads.

The work of the session was then taken up and three papers were read on the subject of fire protection viewed from different standpoints.

FIGHTING FIRE IN QUEBEC.

Mr. W. C. J. Hall, Superintendent of the Bureau of Forestry, Quebec, held that the great duty before the people of Canada was to lessen the enormous fire loss. The first thing was to efface by literature, lectures and all other means the idea now prevalent in the popular mind that the forests must be destroyed to make room for agriculture. Next an efficient patrol must be provided. The danger points were the railway lines and the new settlements. Mr. Hall went into the subject most carefully, citing instances to illustrate his points and referring to equipment, plans, mountain look-outs, telephone service, etc., and the cost of these various aids.

NEW HAMPSHIRE'S FIRE LAW.

Mr. W. R. Brown, Secretary of the Forestry Commission of New Hampshire, told of the forest fire law passed there in 1909. This placed fire protection under the control of the Forestry Commission, which appointed a state forester, who, in turn, appointed some 230 deputies who covered the

state. These called out men when needed to fight fires, the cost being borne, one-half by the municipality and one-half by the state. A beginning had been made in regard to mountain look-out stations. The law should be improved by putting more emphasis on prevention. Plans of co-operation between the state and the timber-owners should be worked out, and the mountain look-outs should be increased and supplemented by a fire patrol.

NEW BRUNSWICK'S EXPERIENCE.

Mr. H. W. Woods, M.P., of Welsford, N.B., divided the fire dangers into four classes; viz.: those from railways, tourists, settlers and blueberry burnings. The railways were learning that burned areas gave them no traffic and were becoming more careful. Tourists must be kept under better surveillance by the licensed guides. People must be taught how properly to cultivate the blueberry, and settlement should be concentrated along transportation lines and settlers kept out of timber districts.

All three papers contained a number of most practical suggestions for fighting fire. This led to an animated discussion as to the best times and methods for combatting a fire once it got started. Those who took part included Senator Edwards, Mr. Robt. Connelly, Mr. G. F. Hill, Mr. I. C. Williams, Mr. W. R. Brown, Mr. Whitman and Mr. Knechtel.

Mr. Williams told of the efficiency of the water pack-saddle used in Pennsylvania. This holds two fifteen-gallon kegs of water to which a pump and hose may be attached.

Mr. Knechtel said they were using water sacks in the west for men on horseback, and Mr. Brown showed the good results which followed the installation of oil-burning locomotives on railways in forest districts.

REFORESTATION IN ONTARIO.

Prof. E. J. Zavitz, B.A., M.S.F., of the Ontario Agricultural College, Guelph, dealt with "Reforestation in

Ontario." In southern Ontario less than ten per cent. of the land was in trees, and in many townships less than five per cent. To provide farmers with material to plant up their woodlots a nursery had been established and the demand was growing as rapidly as the supply. He spoke of the work in Norfolk County, where the Ontario Government had purchased one thousand acres of blow-sand land and was putting it back into forest as an example. In southern Ontario he estimated there were two hundred square miles of unproductive sand lands, about forty per cent. of which would require re-stocking. While artificial re-stocking would not receive much attention for some time to come in Canada, still on large areas where the desired variety had entirely disappeared, it would have to be done, and he gave figures to show that this would be profitable work.

THURSDAY AFTERNOON.

This paper gave rise to a discussion which lasted over into the afternoon session, and which was at times of the most spirited character. Among those who discussed the possibilities of reforestation on a commercial basis in Canada were Mr. S. L. Peters, Queenstown, N.B.; Mr. Whitman, Mr. Snowball, Mr. Knechtel, Mr. Williams and Mr. Thos. A. Peters, of Hampton, N.B. The chief discussion was upon the sowing of tree seeds instead of planting, and much information was brought out.

FORESTRY AND GAME PROTECTION.

The first paper of the afternoon was that of Mr. E. T. Carbonnel, Secretary of the Fish and Game Protective Association of Prince Edward Island, on "The Relation of Forestry to Game Protection." This paper, in the absence of the author, was read by Mr. A. B. Warburton, M.P., of Charlottetown. Mr. Carbonnel dwelt upon the commercial and health-giving value of game reserves. In Prince Edward Island the desire to get more farm land had denuded the

valleys down to the banks of the streams, with the result that the streams had largely disappeared, the fish and game had gone and the farmer had not obtained one additional foot of arable land. He advocated the retention by the Crown in all future grants of a strip fifty feet wide on each side of streams.

TAR AND TURPENTINE.

Mr. Joseph Feinbrook, of Chatham, N.B., sent a paper on "The Manufacture of Tar and Turpentine in New Brunswick." This was read by Hon. W. C. H. Grimmer, who stated that Mr. Feinbrook had begun the manufacture of these products at Chatham, on lines followed in Russia. Mr. Feinbrook referred to the growing demand for these products. He believed that production would be driven to use the stumps and tops of white pine and black spruce, of which New Brunswick was full. The by-products were pine-pitch, pine-tar, creosote, wood alcohol and charcoal. Mr. Feinbrook also gave a description of forest methods in Russia, with which country he was familiar.

CONDITIONS IN NEW BRUNSWICK.

Mr. W. H. Berry, Superintendent of Scalpers for New Brunswick, read a paper on "Conditions in New Brunswick." In reviewing the lumbering situation he said that in some localities the black spruce could be cut over every fifteen years. The regulation allowing the cutting of small sized timber in "thicket growth" was discussed and he said the Government was about to investigate the results of such thinnings. As to fire protection he advocated the prohibition of the burning of settlers' fallows, except upon obtaining permission from the district fire warden. He commended the establishment of a fire patrol by the Provincial Government, but held it should be supplemented by look-out stations on the hills. He stated that the Government of New Brunswick was about to

get an estimate of the standing timber, heath land, burnt land and waste land of all descriptions in the province.

These papers were also fully discussed by Mr. Robt. Connelly, Mr. Snowball, Mr. D. J. Buckley and others.

CONCLUSION.

The Resolutions Committee reported through Mr. Snowball. The non-contentious resolutions were first carried. These comprised the votes of thanks to His Honor Lieut.-Governor Tweedie, the Government of New Brunswick, the City of Fredericton for various kindnesses, including the free use of the Opera House, the Press, the Railways, the speakers from a distance, the Chairman and others, and the resolutions which were afterwards confirmed by the annual meeting and which will be found in the report of that gathering on another page.

The resolution regarding pulpwood was, after considerable discussion, passed in the following form:—

"That in the opinion of this Canadian Forestry Convention the time has arrived when, in the interest of the conservation of our forests, the federal and provincial governments should limit the cutting of lumber and pulpwood on Crown Lands."

There were then replies to the votes of thanks by His Honor Lieut.-Governor Tweedie, Hon. W. C. H. Grimmer, Hon. Senator Edwards, Hon. Charles E. Oak, Mr. Irvin C. Williams and Mr. W. R. Brown.

The convention closed with cheers for the King.

In the evening Mr. Abraham Knechtel, Inspector of Dominion Forest Reserves, delivered an illustrated lecture before an enthusiastic audience in the Opera House on "An Evening in the Forest." The building, which seats 850 people, was crowded, and two hundred were turned away unable to gain admittance.

THOSE PRESENT.

Dr. W. W. Andrews, Mount Allison University, Sackville, N.B.; W. L. Allain, M.P.P., Riviere des Caches, N.B.; William Anderson, Burnt Church, N.B.; John B. Alexander, Fredericton, N.B.; C. A. Alexander, Campbellton, N.B.; Henry A. Allen, Waterloo, Que.; W. E. Armstrong, Waweig, N.B.

Hon. J. P. Burchill, Nelson, N.B.; A. F. Bentley, M.P.P., St. John, N.B.; Avila Bédard, M.F., Dept. of Lands and Forests, Quebec City, P.Q.; W. R. Brown, Secretary Forest Commission of New Hampshire, Berlin, N.H.; Prof. L. W. Bailey, LL.D., Fredericton, N.B.; James P. Byrne, M.P.P., Bathurst, N.B.; H. V. B. Bridges, Principal Provincial Normal School, Fredericton, N.B.; Rev. T. Hunter Boyd, Waweig, N.B.; Judge J. H. Barry, Fredericton, N.B.; Lt.-Col. J. W. Bridges, Fredericton, N.B.; R. S. Barker, Crown Lands Dept., Fredericton, N.B.; R. R. Bradley, Forester Miramichi Lumber Co., Boiestown, N.B.; W. H. Berry, Provincial Superintendent of Scalers, Oak Bay, N.B.; O. P. Boggs, Moncton, N.B.; F. B. Black, Sackville, N.B.; Peter Z. Barrian and D. J. Buckley, Rogersville, N.B.; W. H. Baldwin, Chatham, N.B.; John Betts, Millerton, N.B.; Arthur A. Brown, Chatham, N.B.; J. P. Burchill, Jr., University of New Brunswick, Fredericton, N.B.

C. Fred. Chestnut, Mayor of Fredericton; W. S. Carter, Chief Superintendent of Education, Fredericton, N.B.; M. Cumming, Secretary for Agriculture for Nova Scotia, Truro, N.S.; Charles L. Cyr, M.P.P., St. Leonards, N.B.; A. B. Copp, M.P.P., Sackville, N.B.; Wm. Currie, M.P.P., Campbellton, N.B.; Duncan Cameron, Inspector, Royal Bank of Canada, Montreal, Que.; Rev. Father F. L. Carney, Fredericton, N.B.; Lt.-Col. H. Montgomery Campbell, Apohaqui, N.B.; Thos. H. Colter, Fredericton, N.B.; T. R. Campbell, Salisbury, N.B.; Arthur Culligan, Jacquet River, N.B.; C. W. Connell, Woodstock, N.B.; Christopher Crocker, Millerton, N.B.; Robt. Connelly, Great Salmon River, N.B.; W. L. Carr, Woodstock, N.B.; Frank Curran, and A. B. Carson, Rexton, N.B.; Standish S. Converse, Sayabec, Que.; P. Chiasson, Rogersville, N.B.

W. B. Dickson, M.P.P., Hillsboro, N.B.; Alfred Dickie and Rufus E. Dickie, Stewiacke, N.S.; Frank Day, Fredericton, N.B.; George Y. Dibble, Fredericton, N.B.

Hon. Senator W. C. Edwards, Ottawa, Chairman Forestry Committee, Commission of Conservation; James A. Estey, St. John, N.B.; C. M. Edwards, Ottawa, Ont.

Hon. J. K. Fleming, Provincial Secretary, Woodstock, N.B.; Donald Fraser, sr., Fredericton, N.B.; Samuel Freeze, Doaktown, N.B.

Hon. W. C. H. Grimmer, Surveyor-General of New Brunswick, St. Stephen, N.B.;

John B. Gregory, York and Sunbury Mills, Fredericton, N.B.; Hon. G. F. Hill, St. Stephen, N.B.; Parker Glazier, M.P.P., Fredericton, N.B.; H. J. P. Good, Manager Dominion Exhibition, St. John, N.B.; Henry Gilbert, Rothesay, N.B.; E. S. Gillmore, Fredericton, N.B.; Denis C. A. Galarneau, M.F., Forester, Louison Lumber Co., Jacquet River, N.B.; W. J. Glen, Fredericton, N.B.; G. D. Grimmer, St. Andrews, N.B.; G. Skiff Grimmer, University of New Brunswick, Fredericton, N.B.; George Green, Lakeville, N.B.

Hon. J. D. Hazen, K.C., Premier of New Brunswick, St. John, N.B.; Dr. G. U. Hay, St. John, N.B.; W. C. J. Hall, Superintendent Bureau of Forestry, Quebec City, Que.; W. Frank Hatheway, M.P.P., St. John, N.B.; T. A. Hartt, M.P.P., St. Andrews, N.B.; A. H. Hilyard, Dalhousie, N.B.; W. W. Hubbard, Dept. of Agriculture, Fredericton, N.B.; Prof. Ernest Haycock, Acadia University, Wolfville, N.S.; A. E. Hanson, Deputy Land Surveyor, Fredericton, N.B.; N. Balfour Hill, Nashwaaksis, N.B.; Carl G. Hansen, Salmonhurst, N.B.; George Hazen, jr., Fredericton, N.B.; J. A. L. Henderson, Moncton, N.B.; J. Norman Hallett, Fredericton, N.B.

J. D. Irving, Buctouche, N.B.

Dr. Cecil C. Jones, Chancellor of the University of New Brunswick, Fredericton, N.B.; George B. Jones, M.P.P., Apohaqui, N.B.; John Jamison, Clover Hill, N.B.; W. H. Jackson, Fredericton, N.B.; A. H. Jewett, Fredericton, N.B.; Wm. Jaffray, St. Mary's Ferry, N.B.; Thomas Johnstone, Red Bank, N.B.

T. B. Kidner, Supt. of Manual Training, Normal School, Fredericton, N.B.; Abraham Knechtel, Inspector of Dominion Forest Reserves, Ottawa, Ont.; Benjamin Kilburn, Kilburn P. O., N.B.; H. C. Kinghorn, University of New Brunswick, Fredericton, N.B.

Hon. David V. Landry, M.D., Commissioner for Agriculture, New Brunswick, Buctouche, N.B.; Hon. C. H. La Billois, M.P.P., Dalhousie, N.B.; Lt.-Col. T. G. Loggie, Deputy-Surveyor-General, Fredericton, N.B.; C. M. Leger, M.P.P., Memramcook, N.B.; Frank H. Low, Aylesford, N.S.; C. E. Lund, Sackville, N.B.; John S. Leighton, jr., and M. Lodge, Moncton, N.B.

Hon. H. F. McLeod, Solicitor-General of New Brunswick, Fredericton, N.B.; D. P. MacLachlan, M.P.P., Chatham, N.B.; Lt.-Col. J. B. T. Mackenzie, Chatham, N.B.; Wm. McIntosh, Curator Natural History Museum, St. John, N.B.; T. N. McGrath, Tusket, N.S.; Reid McManus, Memramcook, N.B.; W. C. McManus, Halifax, N.S.; Charles R. Macleay, Sayabec, Que.; Rev. Father H. McRory, Chatham, N.B.; Allan P. McAuley, Pioneer, N.B.; Thos. McMullen, Blaney Ridge, N.B.; W. A. McMullen, Crown Lands Dept., Frederic-

ton, N.B.; John McCohn, North East Boom, N.B.

Hon. John Morrissy, Chief Commissioner of Public Works for New Brunswick, Fredericton, N.B.; Donald Munro, M.P.P., Woodstock, N.B.; G. F. Matthew, LL.D., St. John, N.B.; James M. Macoun, Geological Survey, Ottawa, Ont.; R. B. Miller, Professor of Forestry, University of New Brunswick, Fredericton, N.B.; H. Morton Merriman, Campobello, N.B.; G. G. Murdoch, D.L.S., St. John, N.B.; John A. Morrison, Phoenix Lumber Mills, Fredericton, N.B.; Wm. Murray, Campbellton, N.B.; W. S. Montgomery, Dalhousie, N.B.; P. G. Mahoney, Melrose, N.B.; Howard G. Murchie, St. Stephen, N.B.; Warren Malone and James Malone, Stanley, N.B.; John Murphy, Ludlow, N.B.

R. Neal, Greenville, N.B.; Joseph Norrad, Boiestown, N.B.

Hon. Chas. E. Oak, Bangor, Maine, and Chatham, N.B.; John O'Brien and J. Mac. O'Brien, Nelson, N.B.; R. O'Leary, Richibucto, N.B.

Wm. Power, Quebec City, P.Q.; Hon. B. F. Pearson, Halifax, N.S.; Wm. Pearce, Canadian Pacific Railway Irrigation Dept., Calgary, Alta.; G. C. Piche, M.F., Chief Forest Engineer, Dept. of Lands and Forests, Quebec, P.Q.; Geo. D. Prescott, M.P.P., Albert, N.B.; W. Gerard Power, St. Pacome, Que.; James K. Pinder, M.P.P., Pokiok, N.B.; C. Pickard, Sackville, N.B.; Saunders Price, Doaktown, N.B.; Gilbert H. Prince, Fredericton, N.B.; Thos. A. Peters, Hampton, N.B.; Geo. A. Perley, Warden of Sunbury County, N.B.; J. D. Phinney, LL.D., Fredericton, N.B.; Horace A. Porter, Secretary Canadian Club, St. John, N.B.; S. L. Peters, Queenstown, N.B.; Paul E. Porter and James E. Porter, Andover, N.B.

Hon. C. W. Robinson, M.P.P., Moncton,

N.B.; Thos. Robison, M.P.P., Harvey Station, N.B.; James Robinson, Millerton, N.B.; S. S. Ryan, Moncton, N.B.; John T. Rundle, Chatham, N.B.

Hon. Clifford Sifton, Chairman Commission of Conservation, Ottawa, Ont.; W. B. Snowball, Chatham, N.B.; Hon. F. J. Sweeney, M.P.P., Moncton, N.B.; A. R. Slipp, M.P.P., Fredericton, N.B.; Dr. A. Sormany, M.P.P., Shippegan, N.B.; John Sheridan, M.P.P., Buctouche, N.B.; A. F. Struthers, Bridgewater, N.S.; Robt. LeB. Stevens, St. John, N.B.; F. W. Sumner, Moncton, N.B.; R. P. Steeves, Sussex, N.B.; A. A. Sterling, Sheriff, Fredericton, N.B.; A. M. Sterling, Fredericton, N.B.; E. A. Stone, University of New Brunswick, Fredericton, N.B.; J. E. Stewart, Dalhousie, N.B.; Frank D. Seely, Round Hill, N.B.; G. E. Stoddard, Pioneer, N.B.; Wm. M. Sinclair, Newcastle, N.B.

His Honor L. J. Tweedie, Lieutenant-Governor of New Brunswick.

George W. Upham, Woodstock, N.B.

R. B. Van Dine, Fredericton, N.B.

Hon. A. B. Warburton, M.P., Charlottetown, P.E.I.; F. C. Whitman, President Lumbermen's Association of Western Nova Scotia, Annapolis Royal, N.S.; Irvin C. Williams, Deputy Commissioner of Forestry for Pennsylvania, Harrisburg, Pa.; Ellwood Wilson, Forester, Laurentide Paper Co., Grand Mere, Que.; H. W. Woods, M.P.P., Welsford, N.B.; F. Page Wilson, Editor Pulp and Paper Magazine of Canada, Toronto; F. E. Winslow, Fredericton, N.B.; C. Archie Williams, Fredericton, N.B.; J. A. W. Waring, C.P.R., St. John, N.B.; R. B. Wallace, Fredericton, N.B.; W. Williams, Opnabog, N.B.

John A. Young, Taymouth, N.B.

E. J. Zavitz, Professor of Forestry, Ontario Agricultural College, Guelph, Ont.

CONSTITUTION AND BY-LAWS OF THE CANADIAN FORESTRY ASSOCIATION.

I. NAME.

The name of the Association shall be:
THE CANADIAN FORESTRY ASSOCIATION.

II. OBJECT.

Its objects shall be:—

(1) To advocate and encourage judicious methods in dealing with our forests and woodlands.

(2) To awaken public interest to the sad results attending the wholesale destruction of forests (as shown by the experience of older countries) in the deterioration of the climate, diminution of fertility, drying up of rivers and streams, etc., etc.

(3) To consider and recommend the ex-

ploration, as far as practicable, of our public domain and its division into agricultural, timber and mineral lands, with a view of directing immigration and the pursuits of our pioneers into channels best suited to advance their interests and the public welfare. With this accomplished, a portion of the unappropriated lands of the country could be permanently reserved for the growth of timber.

(4) To encourage afforestation wherever advisable, and to promote forest tree-planting, especially in the treeless areas of our north-western prairies, upon farm lands where the proportion of woodland is too low, and upon highways and in the parks of our villages, towns and cities.

(5) To collect and disseminate, for the benefit of the public, reports and information bearing on the forestry problem in general, and especially with respect both to the wooded and prairie districts of Canada, and to teach the rising generation the value of the forest with a view of enlisting their efforts in its preservation.

(6) To secure such forestry legislation from time to time from the federal and provincial governments as the general interests demand, and the particular needs of the people seem to require.

III. MEMBERSHIP.

Its membership shall include all who pay an annual fee of \$1.00 or a life membership fee of \$10.00.

IV. OFFICERS.

The officers shall comprise an honorary President, a President, a Vice-President, a Secretary, an Assistant Secretary, a Treasurer, the editor of the official organ of the Association and twenty-one directors, and from (and including) the Association year 1909-10 the ex-presidents of the Association shall be members of the Board of Directors.

V. ELECTIONS.

These officers shall be elected by ballot at the annual meeting of the Association, and shall serve one year, or until their successors are elected. Vacancies occurring during the year may be filled by the Executive Committee.

VI. EXECUTIVE COMMITTEE.

The officers shall constitute an Executive Committee, and five of the same shall be a quorum, and they will appoint a Vice-President for each province and as far as possible for each provisional district of the Dominion.

VII. ANNUAL MEETING.

The annual meeting of the Association shall be held during the month of February in the City of Ottawa, upon such a date as shall be decided by the Executive Committee of the Association, a notice of one month of which shall be given to each member by the Secretary.

VIII. SPECIAL MEETINGS.

Special meetings shall be held at such times and places as the Executive may decide, a sufficient notice of which shall be sent to each member by the Secretary.

IX. AMENDMENTS.

Amendments of the Constitution can only be adopted by a two-thirds vote of the members present and entitled to vote, and at the annual meeting of the Association,

and a notice of such intended amendment shall be given with the notice calling the meeting.

BY-LAWS.

PRESIDENT.

The President shall preside at all meetings of the Association.

VICE-PRESIDENT.

In the absence of the President a Vice-President shall preside at all meetings of the Association; and in the absence of all of them a President pro tempore shall be elected by the meeting.

SECRETARY AND ASSISTANT SECRETARY.

The Secretary shall keep a record of the proceedings of the Association and of the Executive Committee and shall be custodian of all documents, books and collections ordered to be preserved.

He shall conduct the correspondence of the Association and shall keep a list of members with their residences and shall notify members of the time and place of meeting of the Association, and in his absence his duties will be discharged by the Assistant Secretary.

TREASURER.

The Treasurer shall have the custody of all moneys received, and shall deposit or invest the same in such manner as the Executive Committee shall direct, and shall not expend money except under direction or approval of the Executive Committee. The financial year of the Association shall close on December 31st of each year.

ORDER OF BUSINESS.

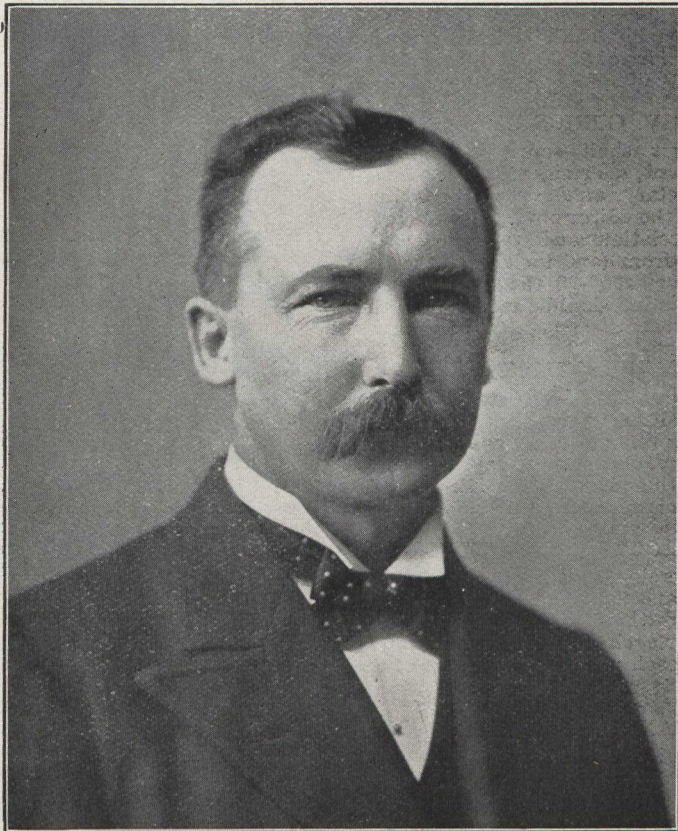
At the regular meeting of the Association the order of business shall be that proposed by the Executive Committee and announced by the Presiding Officer. In the absence of such prepared order of business, the following shall be observed:—

- (1) Calling to order.
- (2) Reading of minutes.
- (3) Reading and referring or disposing of letters, accounts, etc.
- (4) Reports of Committees.
- (5) Inquiries and notices of motion.
- (6) President's address.
- (7) Papers, addresses and discussion by members and others invited by the meeting.
- (8) Nomination and election of officers.
- (9) Unfinished and miscellaneous business.
- (10) Adjournment.

FIRST MEETING OF THE COMMISSION OF CONSERVATION.

The first annual meeting of the Commission of Conservation, which was held in Ottawa on January 18th to 21st last, marks a national movement for the conservation of this country's natural resources and is of particular interest to all those interested in the forest problems of

Tuesday, January 18th, the inaugural address was delivered by the Hon. Clifford Sifton, Chairman of the Commission. It was a most comprehensive review of Canadian conditions and a masterly statement of the problems that lay before the Commission. In his preliminary remarks Mr. Sifton



Hon. Clifford Sifton. Chairman of the Canadian Conservation Commission.

Canada. The feature of note in connection with the Commission is its representative nature. Lumbermen, engineers, university professors, financiers, political leaders and others—all found themselves uniting harmoniously for the advancement of a single patriotic cause.

HON. MR. SIFTON'S ADDRESS.

On the morning of the first day,

referred to the fact that the Commission had been unanimously constituted by Parliament and showed how, in the choice of members, every precaution had been taken to preclude provincial or sectional jealousy. The Commission earnestly desired to cooperate with all the provincial governments and with every organization that had for its object the conservation of natural resources. So im-

portant did he consider this feature that he had determined to dissociate himself from politics and devote his time entirely to the work of conservation, believing that the heartiest co-operation of all the members of the Commission could be thereby secured.

The problem of conservation was not so difficult in Canada as in the United States. For instance, the United States had pursued the policy of selling their timber lands outright, thus removing them from government regulation. This, coupled with an uneconomic method of forest taxation, had resulted in the rapid disappearance of the forests.

In Canada, however, the amount of timber land privately owned was comparatively trifling, and Canadian timber cutting regulations provided for the most absolute governmental control. In addition, large areas of land around the head waters of streams were owned by the Dominion Government and could at any time be turned into forest reserves.

After tracing the history and growth of the conservation movement in the United States as well as in Canada, Mr. Sifton proceeded to treat of the conservation of the various national resources of the country. Canada's mineral output was increasing by leaps and bounds, as was shown by the exportation of \$87,000,000 worth of mineral products in 1908, as compared with \$20,500,000 worth in 1905. Yet only the fringe of our vast mineral producing areas had been touched. A great work was to be done in instituting more economical methods of mining, especially in coal mines; while smelting processes should be improved so as to save much of the valuable mineral contents of ores which are now largely wasted. Moreover, Canada, being a young mining country, had a large number of mining accidents. The large number of fatalities was due to the carelessness of prospectors and others engaged in mining who had had little or no previous experience in work of that class.

Fisheries and public health were next dealt with. The fisheries constituted one of Canada's most valuable resources. The federal and provincial governments had departments devoted to fisheries and the Commission should give these every support in their work. The public health, in view of its fundamental relation to national efficiency, had received all too little attention from the Government. While hundreds of thousands of dollars were spent yearly in eradicating the diseases of animals, no similar effort was being made to meet the ravages of disease among human beings. The Commission, representing as it did both the federal and the provincial governments, could render invaluable aid in the fight against disease, especially against tuberculosis.

Following this, Mr. Sifton proceeded to deal with the sources and uses of the water supply. It was to be seriously questioned, he said, if the time had not arrived when all power development should be under the control of the governments concerned and subject to governmental control in the public interest. Canada with her wonderful wealth in water-powers was nevertheless behind other nations in her water-power law. Ontario, however, with its Hydro-Electric Power Commission, was keeping abreast of the most advanced thought in this line.

In forestry, Mr. Sifton stated, there had been great progress in the last few years. The growth of the Forestry Branch of the Department of the Interior and the founding of faculties of forestry in Canadian universities substantiated this. Thanks to the efforts of the Canadian Forestry Association, an enlightened public opinion had clearly grasped the necessity for the conservation of our forests and could be relied upon to support all well-considered measures having that end in view.

While the policy adopted by the Dominion Government made the timber lands leased to private indi-

viduals subject to the fullest regulation, there were, nevertheless, some generally admitted evils in the present methods of lumbering. These were (a) destruction of young growths; (b) cutting of trees not sufficiently matured, and (c) leaving inflammable refuse and debris upon the ground. The adoption of regulations for cutting, calculated to conserve and improve the merchantable timber, was important. This subject, however, was receiving more or less attention from the various authorities.

The greatest enemy of the forest was fire, and relentless war should be waged against the present destruction of forests by it. Notwithstanding all that had been said and done the destruction was widespread and constant. No measures could be regarded as too radical and no efforts too laborious to put a stop to it. It must be stopped at any cost. Fertility of soil, regularity and volume of stream flow, climatic moderation, as well as timber supply, depended upon the prevention of fire losses.

Great praise, he said, was due to the governments of Ontario and Quebec for taking up the question of protection of forests vigorously. The Ontario fire-rangng system was excellent and the Quebec system of large reserves to be systematically studied was also a progressive step. The main point to be considered in connection with both, however, was that the fire-rangng system did not sufficiently cover the forest land which has no merchantable timber upon it at present.

Two great reserves, Mr. Sifton considered, could be immediately created with substantial advantage. The first of these should embrace all the forest land on the eastern slope of the Rocky Mountains. The Dominion Government was about to bring in a bill for the purpose of making this reserve. The second should include all the provincial government land south of the Height-of-Land, extending from Sudbury to the neighborhood of Port Arthur, except such portions along

the railway as are fit for cultivation.

Apart from minerals the latter territory, he said, was fit for almost nothing except growing timber. The timber and the soil covering the rocks were rapidly being destroyed by fire, but could be preserved at small expense if the railway fires were stopped. The effectiveness of even partial protection was being demonstrated in Algonquin Park, where the government of Ontario had perhaps the greatest opportunity for practical forestry possessed by any government in the world.

There had been a considerable amount of attention given to the prevention of fires along the Transcontinental Railway, but the subject was one of great importance and the work should be systematically reviewed in order to make it certain that there was nothing neglected and that we should not have the same disastrous destruction of timber along the new road as had taken place in other similar cases. The really dangerous period would come when trains began to run on the line.

At the conclusion of Mr. Sifton's address, His Excellency Earl Grey expressed his unqualified approval of the Conservation movement and promised every assistance in his power to make the work of the Commission a success.

DR. FERNOW ON FORESTRY.

Dr. Fernow, Dean of the Faculty of Forestry, Toronto University, contributed an able paper on "Scientific Forestry in Europe: its Value and Applicability in Canada," in which he explained what other countries had done in the development of forestry policies, and showed what features in their experience could be profitably adapted to Canadian conditions.

Devoting his attention first to the question "Does Forestry Pay?" he related what several European countries had achieved in making forestry a profitable venture. Prussia, in 1830, a short time after the adoption of a scientific forestry policy, had pro-

duced twenty-nine cubic feet per acre per year of timber, while in 1907, when the results of the forest policy began to be fully realized, the annual production per acre was 61 cubic feet. In 1907, the gross revenue of 72 cents per acre and the net revenue of 44 cents had increased to \$4.55 and \$2.52 per acre respectively.

annually an income at least seven times the net income of Ontario from an acreage which is about half the area now under license in that province. And all this income was, so to speak, merely the interest on an investment; the capital itself, i.e., the forest, was unimpaired. A part of this increase in value was due, it is



Stand of White Pine on Sandy Land unfit for Agriculture.

The experience of Saxony had been of a similar kind. In the period from 1817 to 1826 her gross revenue from forests had been \$1.57 per acre per year and her net revenue 62 cents. In 1905 they were \$8 and \$3 respectively. Prussia, he declared, derived

true, to increase of stumpage values but the enhancement was mainly due to business-like and scientific methods of management.

France in the past sixty years had reclaimed by tree planting 2,300,000 acres of what was previously con-

sidered absolutely waste and worthless land. This had cost \$15,000,000, but the reforested area was now estimated as being worth \$135,000,000, and produced an annual crop valued at \$10,000,000.

The first essential to the inauguration of a profitable scientific forestry policy was that people should consider the forest as a field capable of producing annual crops, not as a mine which is to be worked to exhaustion. This forest crop, however, took a long time to mature and the self-interest of the individual was not far-seeing enough to wait for the returns. It was, therefore, necessary that the state or some other persistent corporation should assume the ownership and management of forest lands.

After rapidly sketching the history of forestry and showing that it was a comparatively recent science, Dr. Fernow next considered the world's supply of timber and the rate of consumption. While the wooded area of the world might be figured at over four billion acres, the really productive forest area capable of furnishing the kind of timber which plays a role in the markets of the world is probably not over half that figure. The annual consumption of wood was tolerably closely known to be in the neighbourhood of forty billion cubic feet. Taking 40 cubic feet per acre as a fair average production, it would appear that there is a large enough area available to furnish all supplies, provided it were managed for such production.

How then should we manage our forests? Four methods had been tried for securing an economic handling of forest properties for reproduction:—

1. Government ownership and management, based on the *paternal* function of government.
2. Municipal ownership and government supervision of its management, by exercise of the *fiscal* function of the state.
3. Restriction of private forest

management, by exercise of the *police* function of the state.

4. Encouragement of private forest management, by exercise of the *educational* function.

The tendency in Europe, said Dr. Fernow, was toward state ownership and control. Prussia in 1902 had set aside \$30,000,000 for the purchase of waste lands and annually spends nearly half a million dollars in reforesting these. The long waiting for the first crop from forests was a very strong argument in favor of state ownership.

In France municipal ownership and control under state guidance was much in vogue. There, too, the supervision of private forest management is much more developed than in Germany and is much more strict. Restrictive measures on private property, however, had everywhere been found difficult to enforce and were in large measure being supplanted by the greater freedom of management vested in administrative officers.

For direct application to Canadian conditions the German system was perhaps too ideal. In Sweden, however, conditions were to be found similar to those prevailing in Canada. Forest fires and the axe, as with us, had devastated large areas, while like methods of disposing of timber lands had been followed. The Swedes, after many disappointing experiments, had adopted their present system in 1905.

This system places the control of all private forests in the hands of Forest Conservation Boards. These Boards, one for each province, have surveillance of all private forests and can enforce their rulings by court proceedings. An export duty on timber and dry wood-pulp is imposed to furnish funds for carrying out the law. The management of municipal forests is placed under the state administration, the corporation paying for such service. Dr. Fernow advised that the character and actual workings of these attempts in Sweden be

submitted to a closer inspection by the Commission.

The greatest need, said Dr. Fernow, was a radical change in the attitude of people and governments and a thorough realization that the existing methods of treating timber lands are bad. After this has been accomplished the next thing to do is to acquire more knowledge regarding our forest resources. Present knowledge regarding these was largely guesswork. A more authoritative collation of known facts should be made and a cheap preliminary forest survey, such as he had made in Nova Scotia at a cost of less than 25 cents per square mile, should be made.

The experience of other nations that state ownership has invariably furnished better results, either with or without state control, should make us adhere to state ownership as a principle. If this were agreed to, it could be very easily adapted to present conditions because the Dominion or the provinces owned the bulk of our forest property. The next step would be the installation of properly manned forestry bureaus in each province to manage this property in accordance with scientific principles. "Perhaps, however," continued Dr. Fernow, "before such bureaus are established it might be advisable to appoint Royal Commissions for each province, or possibly committees of this commission similar to the Swedish Conservation Boards, to formulate plans of procedure which would remove the reform from the political arena." This would permit of an equitable adjustment of the claims of licensees who would have to be compensated for the cancellation of their licenses. Provincial control would also allow each province to adjust its laws to its own peculiar conditions. Yet even provincial legislation should be as little specific as possible, leaving the drafting of specific rules to the administration.

Dr. J. W. Robertson in an address on "The Conservation of Agricul-

tural Resources" dwelt upon the valuable heritage Canadians had in their agricultural lands and emphasized the fundamental importance of agriculture in the national economy. The fertility of the soil should be conserved by the use of fertilizers and the employment of judicious crop rotations. In this respect Canada had much to learn from European practice. He said that more careful attention should be paid to the selection of clean seed and showed how necessary it was to make the farm environment sanitary and attractive.

TUESDAY AFTERNOON'S SESSION.

In a paper on "Possible Economies in the Production of Minerals of Canada," Dr. Eugene Haanel, Director of the Mines Branch of the Department of Mines, pointed out what economies could be effected by the adoption of less wasteful methods of mining and smelting. He deprecated the practice of sending Canadian ores to foreign countries to be treated. The number of fatalities in mine accidents was too large and means should be taken to protect miners, especially with regard to the handling of explosives.

Hon. Adam Beck, Chairman of the Ontario Hydro-Electric Power Commission gave an admirable paper on "Hydro-Electric Developments in Ontario, Developed and Potential." Mr. Beck traced the history of the hydro-electric movement in Ontario and gave a detailed description of the works constructed and in process of construction. The industrial advantages that Niagara power gave to Western Ontario and the savings effected in the cost of power were clearly outlined, while the fact was demonstrated that none of the rights or property of vested interests had been usurped. The address was a very clear and comprehensive, yet compact, account of the whole hydro-electric project.

"Fish and Game in Ontario" was the subject discussed by Mr. Kelly Evans, of the Ontario Fish and Game Commission. He laid stress on the economic value of our fisheries and, by statistics, showed how the stock of fish, especially whitefish, was being depleted. The experience of Maine and Ontario showed how valuable were game fisheries. They very often brought into the country people who not only spent a good deal of money in Canada, but very often were induced to invest capital in Canadian enterprises. He advocated the levying of a tax on anglers such as Ontario had. This would aid materially in tracing home many forest fires to the guilty parties.

WEDNESDAY EVENING.

At Wednesday evening's session Mr. F. T. Congdon, M.P., of Dawson, Y.T., spoke on the preservation of fur-bearing animals in Canada. Poison and wolves, he declared, were the chief foes of wild game. More stringent laws should be passed against the use of poison, and the bounty on wolves should be increased. A considerable number of small game preserves, each devoted to the perpetuation of a particular species, should be formed to prevent the extinction of fur-bearing animals.

At the same session, Dr. P.H. Bryce, Chief Medical Inspector of the Department of the Interior, gave an address on "Measures for the Maintenance and Improvement of the Public Health," in which he devoted special attention to the milk supply and infant mortality, tuberculosis, typhoid fever and municipal water supply.

Dr. H. T. Gussow, Botanist at the Central Experimental Farm, gave a most instructive illustrated address on "Diseases of Forest Trees." In Canada the public, he said, had regarded this subject as of too little importance, considering the magnitude of the losses caused by diseases of trees. He referred to the serious inroads of the "Damping-off fungus" upon young seedling conifers, and stated that the ravages of this disease had led to the importation from foreign countries into Canada of seedlings two or more years of age. Unfortunately this practice brought serious results; for it was found that a large shipment of white pine seedlings from Europe in 1909 was infected with white pine rust, the disease not being discovered till the young trees had been planted. Dr. Gussow then proceeded to give a thorough description of the disease known as "Larch canker," which is affecting considerable areas of tamarack in Canada. He described the symptoms and progress of, and the remedies for, the more important fungus diseases and concluded with the statement that one of the most important steps the Commission could take was the institution of some method of inspection for forest reserves.

"Insects Destructive to Canadian Forests" was the subject of an illustrated address by Dr. C. Gordon Hewitt, Entomologist, Central Experimental Farm. Dr. Hewitt stated that the damage done to trees by insects was much greater than was supposed, the insects often co-operating with forest fires to destroy our timber resources. Since the forests of Canada were composed chiefly of coniferous trees, the speaker dealt mainly with insects preying upon these. At the present time, the Larch Sawfly, he stated, was the most widely spread forest insect in Canada, and was proving very destructive to the tamarack in Eastern Canada as far west as Winnipeg. Insect-eating birds should be

given every possible protection since they were an important means of keeping this insect under control. The Spruce Budworm had wrought havoc with the spruce in Eastern Canada and in Vancouver Island, while the Brown-tail Moth, which had been imported in foreign nursery stock, would prove very disastrous were it allowed to get into the fruit growing districts. To prevent its further introduction the Government was inspecting all imported nursery stock, but too great care could not be exercised in this regard.

COMMITTEES APPOINTED.

Mr. Chas. R. Coutlee, Engineer in charge of the Georgian Bay Canal Survey, on Thursday morning in an address on the "Water Wealth of Canada, with special reference to the Ottawa River Basin," gave an exhaustive and systematic survey of the water resources of Canada and predicted that the Ottawa valley would become the power heart of the continent.

The Commission then proceeded to organize committees to deal with the several branches of natural resources. The committees are as follows:—

COMMITTEES OF THE COMMISSION OF CONSERVATION.

Committee on Fisheries, Game and Fur-bearing Animals—

Hon. F. L. Haszard, Chairman; Hon. Hugh Armstrong, Hon. Frank Cochrane, Hon. Price Ellison, Hon. W. C. H. Grimmer, Hon. A. K. Maclean, Dr. Howard Murray.

Committee on Lands—

Dr. J. W. Robertson, Chairman; Dr. Geo. Bryce, Hon. Sydney Fisher, Hon. Benj. Rogers, Dr. W. J. Rutherford, and the ex-officio Members of the Commission who represent the various provinces.

Committee on Minerals—

Dr. H. S. Béland, Chairman; Mr. John Hendry, Dr. Howard Murray, Hon. W. Templeman, and the ex-officio Members of the Commission who represent the various provinces.

Committee on Press and Co-Operating Organizations—

Mr. J. F. Mackay, Chairman; Hon. Jules Allard, Dr. Geo. Bryce, Dr. Howard Murray, Dr. H. M. Tory.

Committee on Public Health—

Mr. E. B. Osler, Chairman; Dr. H. S. Béland, Hon. J. A. Calder, Hon. Sydney Fisher, Sir Sandford Fleming, Dr. Cecil C. Jones.

Committee on Waters and Water Powers—

Mr. F. D. Monk, Chairman; Hon. Jules Allard, Hon. Frank Cochrane, Hon. Price Ellison, Hon. W. C. H. Grimmer, Mr. C. A. McCool.

Committee on Forests—

Senator W. C. Edwards, Chairman; Mr. Frank Davison, Dr. B. E. Fernow, Mr. John Hendry, Mgr. J. C. K. Laflamme, Hon. Frank Oliver, Mr. W. B. Snowball, and the ex-officio Members of the Commission who represent the various provinces.

REPORTS OF COMMITTEES.

The Committee on Fisheries, Game and Fur-bearing Animals desired to postpone the submission of a report until further time was available for a more complete investigation than was then possible.

The Committee on Lands, in their report, proposed to collect information relative to occupied and unoccupied lands with respect to the character of soils, the crops best suited to each kind of soil and the decrease of soil fertility. The supply and availability of natural fertilizers will be investigated and information will be collected regarding water supply for domestic and irrigation purposes. The Committee also proposes to arrange for a series of meetings in each province for the purpose of disseminating information and arousing interest in the conservation of agricultural resources.

The Committee on Minerals reported that it deemed it advisable to obtain a compilation of statistics relative to the known mineral resources of Canada. It recommended that legislation be passed compelling mining companies to furnish the Government with statistics of their annual output and the estimated value thereof.

The Committee on Press and Co-Operating Organizations have the direction of the publicity work of the Commission and their policy is, therefore, of peculiar importance. Their report intimated that the results of the work of the other committees would be effectively placed before the public as they came to hand. Reports of the proceedings of the first annual meeting of the Commission will be issued to the extent of 12,500 copies. They recommended that periodical bulletins containing short pithy paragraphs on the work of the Commission be issued to the press and expressed their intention of holding public meetings in the various leading centres of the provinces to promote the work of Conservation.

The Public Health Committee will employ an expert to collect data respecting measures taken elsewhere to protect the public health as regards the pollution of streams by sewage and the contamination of water supply and to enquire into the most effective measures to prevent the spread of typhoid, tuberculosis and other contagious diseases.

The Committee on Waters and Water-Powers, in their report, declared their in-

tention of making a complete inventory of Canadian water-powers, developed and potential, together with an investigation of the rates charged for existing power. They would also co-operate with the Committee on Public Health in securing data regarding water supply and stream pollution. They placed themselves on record as being opposed to the granting of unconditional titles to water-powers and maintained that every water-power lease should be conditional on development within a specified time, that there should be public control of rates and that water-powers should be rented for a rental fee subject to revision.

REPORT OF THE COMMITTEE ON FORESTS.

The report of the Committee on Forests referred to the rapid destruction of Canadian forests by fire and by reckless cutting. In view of the approaching scarcity of timber and the close relation of wooded areas to water supply and regulation of stream flow, the Committee recommended that a progressive and scientific forestry campaign be entered upon.

Having regard to what other countries, notably France and Germany, had done in this line of work, they considered that our forests could be conserved and perpetuated and our denuded lands reforested, provided that every province co-operated heartily with the Dominion government.

"The three great requisites," says the report "are the prevention, in so far as such can be accomplished, of forest fires, systematic cutting on the part of lumbermen, under well devised and strictly enforced regulations, and reforestation of the burned-over areas unsuited for agricultural purposes.

"With the view of bringing about the much desired results, your Committee begs to suggest that the first steps to be taken are, to ascertain, as nearly as can be done, the quantity of each kind of standing timber in the various provinces and in the unorganized territory, a reasonable estimate of the annual growth of each, and the amount annually cut for domestic use and exportation; and, with the view of endeavoring to bring about uniformity of operation in so far as conditions will permit, to procure all available statutes and regulations governing the cutting of timber and the prevention of forest fires in the various provinces and territories; also to take the best means possible to ascertain the systems adopted in France, Germany and other countries for the preservation and perpetuation of their forests and for reforesting areas denuded of forest, in order that your Committee may be placed in the best possible position to recommend the most desirable means of conserving to Canada and its future use one of its most valuable assets."

After the report of the Committee on Forests was read a lengthy discussion followed. Rev. Dr. George Bryce noted that a matter of very great importance to the prairie province, viz., that of tree planting on lands that had never had trees upon them, was omitted from the report. Senator Edwards, however, assured him that this had been a mere oversight and that the matter would not escape the attention of the Committee.

Hon. Sydney Fisher considered that by far the most urgent question was to secure an inventory of our present forest wealth and thought it would be well to discuss that subject. Senator Edwards agreed with Hon. Mr. Fisher as to the importance of the subject, but said that, as the taking of an inventory involved the question of ways and means, the Committee thought it could best be settled by themselves at a later date when more time was at their disposal.

Mr. John Hendry, of Vancouver, said that British Columbia had a certain amount of information regarding her extensive forest resources and that a Royal Commission was at present investigating the subject. The Commission, he thought, could get a great deal of information from the provincial government.

As regards New Brunswick, Mr. W. B. Snowball said that that province had a fairly accurate knowledge of what timber there was on Crown Lands, but that it would be very much more difficult to secure information concerning the timber on the extensive areas there which were owned by railways and private individuals. He heartily favored the making of a cursory forest survey and thought it would be wise to recommend that the Dominion Government give some aid to the provinces for making such surveys.

The question of forest fires was a very live one and called forth a long and spirited discussion.

Mr. W. B. Snowball stated that the Intercolonial railway ran through some of the most valuable timber lands of New Brunswick, and that the Commission should take a strong position in favour of having that railway placed under the provincial laws respecting fire guardianship. The Commission of Conservation should see that the Intercolonial Railway Commission co-operated with the Crown Lands Department of the Province in assisting to watch fires and in clearing all inflammable material from the right of way.

Hon. W. C. H. Grimmer, Surveyor-General of New Brunswick, said that the suggestion for the electrification of the National Transcontinental Railway through Quebec and New Brunswick was one of the utmost importance to the preservation of the standing timber ad-

jacent to the railway line. He commended the Dominion Government and the Commissioners of the National Transcontinental Railway for their efforts to prevent fires during the period of construction of the road by means of a fire ranging system. With a single exception all serious fires had been prevented.

"I do feel," said Mr. Grimmer, "that we in New Brunswick have a grievance so far as the Intercolonial railway is concerned." Hundreds and hundreds of miles of fire-devastated timber lands, he continued, were to be seen along its line. Last summer he had asked the Intercolonial Commission for free transportation for some of the chief fire-rangers, but was refused. The Intercolonial should be made to clear up its right of way, and sportsmen and anglers should have impressed upon their minds the danger of leaving camp-fires unextinguished.

Dr. B. E. Fernow thought that the matter of forest fires was one that could be taken in hand by the Commission without further planning. He suggested that the Committee on Forests be instructed to furnish an extensive report on the methods of fighting forest fires. He favored the organization of provincial committees to superintend the taking of an inventory of forest resources.

Mr. A. S. Goodeve, who is a member of the British Columbia Royal Commission on Forestry, stated that they had found little trouble in effectively guarding against fires set by sportsmen. Warnings printed on linen cloth had been posted up along all the trails, while settlers were not allowed to set out a fire in a timber district without first getting a permit from the fire warden. A very large proportion of fires, he said, was started by railways. The grades in the timber district of British Columbia were difficult, and the consequence was that the engine crews very frequently disregarded the rules laid down by the Railway Commission regarding the use of fire screens. The clearing of the right of way had been largely successful in British Columbia. Mr. Goodeve considered that the two most practical suggestions that had been made were those respecting the clearing of inflammable debris from the right of way and the holding of the railways directly responsible for fires set by them.

Hon. Mr. Sifton maintained that the destruction of forests by fire was a question affecting every province as well as the Dominion as a whole. "We ought to have," he said, "a distinct, clear and definite resolution on the subject which would authorize the Chairmen of the Committees, along with myself, to make the strongest representations on the subject to the Government. . . . I have never been able to work out the principle upon which we permit railways to go through the country

spreading destruction. We do not allow anyone else to do that, and why we should permit the railways to do so I cannot understand. For my part, I would be prepared to support the strongest possible resolution urging on the Government to make the laws such that the railways shall be primarily responsible. As to the Inter-colonial Railway, my own opinion is that it should be in the same position as any private corporation."

As the result of this discussion upon the subject the following resolutions relative to forest fires set by railways were passed by the Commission:—

"That it is important that steps be taken at once by this Commission to protect the forests from fire, especially along the line of railways; and

"That, in particular, legislation be recommended by this Commission to bring the Dominion Government railways under the Fire Laws of the several provinces through which they pass; and

"That government railways should also be made liable for damages done by fire originating from their engines; and

"That the burden of disproof should be on the railways; and also

"That the legislation provide for the transportation by all railways of the chief district fire rangers and fire wardens free of charge, when on their way to investigate or fight fires along their line of railway."

COMMISSION RE-ASSEMBLES IN JUNE.

The Commission will hold its next meeting during the second week in June at some place in the province of Quebec. The members departed from the initial meeting feeling that a good deal had been accomplished. Men interested in the same problems and engaged in the same kind of work from all parts of the country had been enabled to meet together and get acquainted with each other and with each other's work. Their work, it was felt, now had a principle of unity and co-ordination running through it. Ideas had been clarified, knowledge had been gained and additional confidence in themselves and in the success of their efforts had been acquired. Useful and practical legislation will undoubtedly follow as the result of the conclusions reached at this first meeting, while at it the foundation has been laid for more numerous and more extensive accomplishments at subsequent meetings.

BRITISH COLUMBIA TIMBER COMMISSION REPORTS.

The Royal Commission appointed by the government of British Columbia to investigate the timber and forestry questions of the province presented an interim report to the provincial legislature on January 25th last, recommending that timber licenses be renewable from year to year as long as merchantable timber remains on the property. After the preamble the report recalls the promise given at the preceding session of the legislature to deal with the question by amendments to the existing law, and goes on to recommend that "the proposed amendments be so framed as to provide that the special timber licenses, other than those provided for in sub-section 2 of section 57 of the Land Act, be renewable from year to year as long as there is on the land included in such license merchantable timber in sufficient quantity to make it commercially valuable (proof of which might be required by the chief commissioner), but that renewal shall be subject to the payment of such rental or license fee and such tax or royalty and to such terms, conditions, regulations and restrictions as may be fixed or imposed by any statute or order-in-council in force at the time renewal is made; that power should be provided or reserved for the chief commissioner or government where, after inspection, it is found that the land is fit for tillage and settlement and required for

that purpose that he or they may require the license to remove the timber from such land within a fixed time, at the end of which period the land shall be opened for settlement on such terms as the government may see fit." Legislation has been introduced in the legislature to give effect to the recommendations of the commission.

EXPORT OF PULP FROM N. B. The following resolution was unanimously passed by the Legislature of the Province of New Brunswick on March 17th: "Resolved, that, in order that the advantages of our natural resources may to a greater extent be secured to people of our country and the public domain be preserved, all pulpwood and wood for pulp making purposes cut on Crown lands in New Brunswick should be manufactured within the province." The resolution is but a prelude to the enactment of legislation or other action leading to the prohibition of export of pulpwood from New Brunswick, so far as this lies within the jurisdiction of the provincial authorities.

The revenue of the Lands and Forests Department of the Quebec provincial government during the year 1909 was \$906,360.

THE NEW U.S. FORESTER.



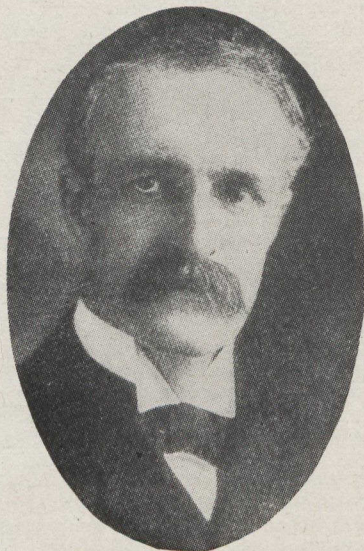
Henry S. Graves, Forester of the United States.
(Director Yale Forest School 1900-Jan. 1910.)

Many of the readers of the CANADIAN FORESTRY JOURNAL have followed with interest the "Pinchot-Ballinger" controversy, one episode of which has been the resignation of Mr. Gifford Pinchot as Forester of the United States.

Mr. Pinchot had been Forester of the United States since 1898, when he succeeded Dr. Fernow on the latter's resignation to take charge of the New York State College of Forestry. The expansion of the Forest Service under his direction and the leading part he has taken in the Conservation movement are too well-known to require more than passing notice here.

Henry S. Graves, who has been ap-

pointed Mr. Pinchot's successor, has long been his close friend and associate in forestry work. The two friends collaborated in writing "The Adirondack Spruce." In 1898 Mr. Graves became Mr. Pinchot's assistant in the (then) Division of Forestry, but resigned in 1900 to take the directorship of the Yale Forest School, which, under his direction, had become the foremost school of forestry in America. This post he held until promoted to his present position. Ever alert, approachable, enthusiastic and endlessly energetic, the new forester will, it is safe to say, prove a vigorous and sagacious administrator of the great forest asset of the United States and a worthy successor of worthy predecessors in his high office. The JOURNAL congratulates him on the promotion and wishes him the highest success in his new sphere of work.



Gifford Pinchot, Chairman of the Conservation Commission of the United States; Forester of the United States, 1898-1910.

CANADIAN The annual meeting of the LUMBERMEN'S Canadian Lumbermen's Association was held in Ottawa on February 1st last. A number of important reports were presented and many questions of moment to the trade came up. In the evening the annual banquet of the Association was held at the Russell House. About sixty guests were present, and among the speakers were Hon. Clifford Sifton, Chair-

man of the Commission of Conservation, Mr. Thos. Southworth, President of the Canadian Forestry Association, and others. The officers of the Association for 1910-1911 are as follows: President, J. B. Miller, of Toronto; Vice-Presidents, J. C. Browne, of Ottawa, John Hendry, of Vancouver, B.C., D. C. Cameron, of Winnipeg, Man., and Alex. McLaurin, of Montreal, Que.; Secretary, Frank Hawkins, of Ottawa; Treasurer, R. G. Cameron, of Ottawa.

NOUVELLES TENDANCES ET MÉTHODES D'AMÉNAGEMENT

(TRAVAIL PRÉSENTÉ AU CONGRÈS INTERNATIONAL D'AGRICULTURE A VIENNE, EN 1907, SECTION DE LA SYLVICULTURE.)

Par M. de Gail, Conservateur des Eaux et Forêts à Epinal, France.

MÉTHODE DES AFFECTATIONS.

Pendant la dernière moitié du siècle dernier, la plupart des aménagements de futaie, la presque totalité en France, ont été établis en vue de l'application de la méthode dite "du Réensemencement naturel et des éclaircies."

A cet effet, la révolution était divisée en un certain nombre de périodes, généralement d'égale durée, fréquemment 4 ou 5. A chacune de ces périodes correspondait, sur le terrain, une affectation.

Pendant chacune des périodes, l'affectation correspondante devait être régénérée, et les autres devaient être parcourues par des coupes d'amélioration.

Le volume à prendre, chaque année, en coupe de régénération, formait la possibilité principale et était le quotient du volume existant dans l'affectation en tour, accroissement compris, par le nombre d'années formant la période.

Quant aux coupes d'amélioration, elles devaient être assises par contenance, à intervalles réguliers; le volume à réaliser à leur passage restait indéterminé.

Il importe d'ajouter que les affectations étaient généralement constituées d'un seul tenant, dût-on y comprendre des peuplements d'âges souvent disparates.

Ce système d'aménagement, encore employé fréquemment, présente un caractère attrayant, à raison de sa simplicité, mais il a aussi ses inconvénients, dont les principaux sont les suivants:

1° Diviser une forêt en quatre ou cinq affectations d'un seul tenant, cela est très-beau sur le plan; mais encore faut-il que les peuplements s'y prêtent, qu'ils ne soient pas d'âges trop différents, comme cela arrive souvent.

Est-il bien utile d'ailleurs d'avoir

ainsi cent ou deux cents hectares de peuplements du même âge, d'un seul tenant? On peut en douter; car s'il survient une catastrophe telle qu'un cyclone, une invasion d'insectes, toute une classe d'âge disparaît, et toute l'économie de l'aménagement est détruite.

2° Régénérer un quart par exemple de la forêt pendant le quart de la révolution, et ne faire que des coupes d'amélioration sur les trois autres quarts, cela va très-bien quand les peuplements s'y prêtent. Mais combien de fois arrive-t-il que l'affectation en tour renferme des bois trop jeunes, que l'on est obligé d'enlever tout de même, tandis que les autres affectations contiennent un grand nombre d'arbres mûrs, surannés, qu'il serait utile de réaliser, mais qu'on est amené à laisser sur pied tout de même? Dans les deux cas, on consent des sacrifices pour arriver à régulariser les peuplements.

3° On admet que les affectations sont constituées de telle manière que la possibilité des coupes principales à asseoir dans chacune d'elles, pendant la période correspondante, restera toujours sensiblement la même.

Peut-on en être certain? et en admettant que l'aménagiste ait pu assurer ce résultat par de savantes combinaisons, ces combinaisons ne peuvent-elles être détruites tout d'un coup par des réalisations forcées et imprévues, les dégâts d'un ouragan, le dépérissement prématuré etc.?

4° Il n'y a pas lieu sans doute de chercher à faire produire chaque année à une forêt un volume rigoureusement constant; mais encore est-il bon qu'il n'y ait pas de différences trop grandes dans le rendement, d'une année à une autre. Or il peut arriver qu'il se produise, surtout en montagne, des réalisations énormes de produits accidentels; si ces réalisations ont lieu

dans l'affectation, en tour de régénération, les coupes principales sont réduites d'autant et au besoin supprimées; si elles se produisent au contraire en dehors de cette affectation, elles viennent s'ajouter aux coupes prévues, sans que celles-ci soient réduites, et on arrive à exploiter alors tout d'un coup des volumes énormes, au préjudice de l'avenir.

PRECOMPTAGE.

Frappés des inconvénients qui viennent d'être exposés, certains aménagistes ont introduit, en 1878, un correctif à la méthode; ce correctif est le précomptage.

Précompter, c'est réduire la possibilité principale calculée d'après le volume existant dans l'affectation en tour de régénération, d'une quantité égale à une partie déterminée du volume réalisé dans les affectations hors tour.

Les auteurs de cette mesure admettaient bien que, dans les affectations hors tour, on pût réaliser des produits dits intermédiaires, sans que le rendement d'avenir en fût affecté, mais à condition que ces produits fussent réellement intermédiaires, c'est-à-dire, qu'ils fissent bien partie, par leurs dimensions, des peuplements que ces affectations devaient renfermer normalement; ils considéraient au contraire comme abusif d'enlever, sans compensation, des arbres dont la disparition pouvait occasionner un appauvrissement de l'affectation dans laquelle ils se trouvaient.

C'est ainsi que la dimension de l'arbre exploitable étant par exemple de 55 *cm* de diamètre, on a été conduit souvent à prescrire de précompter sur la possibilité le volume des arbres de 40 *cm* de diamètre et audessus, qui viendraient à être réalisés dans les affectations hors tour. Parfois, on précomptait à partir de 35 *cm* ou même de 30 *cm*. D'autres fois, on ne précomptait que les produits accidentels, et non ceux provenant des coupes d'amélioration.

Il y avait en réalité beaucoup d'arbitraire dans ces prescriptions.

En somme, le précomptage n'était qu'un palliatif, destiné à égaliser les produits d'une année à l'autre, et aussi à maintenir jusqu'à un certain point le rapport soutenu, au passage d'une période à la suivante.

Il eut du succès, surtout dans les forêts de montagne; à vrai dire, il avait été surtout inventé pour ces dernières.

Il eut cependant aussi ses détracteurs; et ceux-ci étaient précisément les fervents de la méthode "du réensemencement naturel et des éclaircies."

Ils faisaient remarquer que l'effet du précomptage étant de remplacer tout volume de gros bois réalisé dans les affectations hors tour, par un volume égal à déduire de celui destiné à être réalisée dans l'affectation en tour, cette dernière ne serait pas entièrement régénérée à l'expiration de la période, et qu'on détruirait ainsi la belle ordonnance de l'aménagement.

A cette objection, on répondait qu'il n'y avait pas d'inconvénient à ce qu'il restât, en fin de période, dans l'affectation, un certain volume disponible que l'on pouvait former des bois les plus jeunes, choisis parmi ceux dont la réalisation eût précisément entraîné les plus grands sacrifices.

INVENTAIRE TOTAL.

L'idée du précomptage portait en elle-même le germe d'une évolution qui ne tarda pas à se produire.

Tout en s'occupant plus spécialement de la régénération de l'affectation en tour, on s'habitua peu à peu considérer comme faisant partie de la possibilité les bois exploitables de la série entière, et à faire rentrer dans la possibilité principale même les produits réalisés au passage des coupes d'amélioration.

D'autre part, pour savoir au juste à quoi pouvait aboutir le précomptage de certaines catégories de bois, il était utile de connaître le volume de ces bois.

C'est ainsi que, lors des aménagements, au lieu de compter seulement les arbres existant dans l'affectation à

régénérer, on a été amené à faire l'inventaire du volume existant dans la série entière.

Il serait trop long et trop difficile de calculer les volumes des bois de dimensions inférieures; on ne compte donc que les bois audessus d'un certain diamètre, qui est généralement celui que peuvent atteindre les arbres parvenus au tiers de la révolution; ce diamètre est très-souvent celui de 20 *cm*.

Les arbres de dimensions supérieures sont inventoriés et cubés par catégories de diamètre, de 5 *cm* en 5 *cm*, et divisés ensuite en deux catégories, comprenant les bois moyens et les vieux bois.

Les bois moyens sont ceux dont l'âge est compris entre le tiers et les deux tiers de la durée de la révolution; les vieux bois sont ceux dont l'âge est supérieur aux deux tiers de la révolution.

L'âge des bois est arbitré d'après leur dimensions, ce qui suppose la proportionalité de l'âge au diamètre.

Il est facile de se rendre compte qu'avec cette classification, et en admettant que la série soit normalement composée, c'est-à-dire que les arbres de tous âges y occupent la même surface, le volume des bois moyens doit être à celui des vieux bois dans la proportion de 3 à 5.

De toute manière et indépendamment des déductions que l'on peut en tirer pour l'aménagement, l'inventaire total est toujours une excellente chose, parce qu'il donne une expression exacte de la richesse de la forêt, et fournit des points de comparaison utilisables dans l'avenir.

On peut remarquer que si l'on se trouvait en présence d'une série divisée en trois affectations normalement composées, les volumes des trois catégories de bois dont il est question correspondraient exactement aux volumes existants dans ces affectations; que si l'on se trouve, au contraire, en présence d'une série à peuplements irréguliers, les volumes des trois catégories représentent encore, pour ainsi dire, les éléments

épars que l'on peut considérer par la pensée, comme formant, par leur réunion, les trois affectations.

POSSIBILITE DEDUITE DE L'INVENTAIRE TOTAL.

Comment déduire la possibilité d'une forêt de l'inventaire total du matériel établi de la manière qui vient d'être indiquée? Le procédé le plus en usage est le suivant.

Les vieux bois devant être réalisés pendant le premier tiers de la révolution, on prend leur volume, on y ajoute un accroissement estimé d'une manière modérée, et on divise le total par le tiers de la durée de la révolution; on obtient ainsi le volume des vieux bois à enlever chaque année; on admet en outre que, parmi les bois moyens, on aura à réaliser la moitié de l'accroissement, l'autre moitié devant rester incorporée au peuplement.

On ajoute donc au volume des vieux bois à enlever annuellement, la moitié de l'accroissement des bois moyens, et on obtient ainsi l'expression de la possibilité totale.

Ce procédé, qui paraît mathématique au premier abord, laisse encore beaucoup à l'appréciation.

Il y a d'abord la durée de la révolution, que l'on peut allonger ou diminuer, puis il y a l'accroissement, tant des vieux bois que des bois moyens, qui peut être évalué différemment; enfin il y a la partie de l'accroissement des bois moyens destinée à être réalisée; elle a été évaluée ici à moitié, mais on peut l'estimer aussi bien au tiers ou au quart dans certains cas.

Un autre procédé consiste à prendre pour l'expression de la possibilité, le quotient du volume total existant dans la forêt par la moitié de la durée de la révolution; il faut pour cela connaître le volume total, et, comme dans l'inventaire, on ne comprend pas les bois de petites dimensions, il faut évaluer ces derniers à vue.

Pour que la formule employée fût exacte, il faudrait en outre que, pendant toute la durée de la révolu-

tion considérée, la production continuât à rester la même.

Quand on est habitué aux forêts d'une région, il est presque aussi exact de prendre simplement comme expression de la possibilité un tant pour cent du volume inventorié.

Les trois procédés peuvent être employés concurremment; il est bon de comparer les résultats fournis par chacun d'eux, et de tenir compte également de l'état de la forêt, et du rendement qu'elle a donné par le passé.

On arrive ainsi à une appréciation assez juste de la possibilité.

Le chiffre adopté sera aisément rectifié lors de la révision de l'aménagement, quand un nouveau comptage permettra d'établir la comparai-

son entre les volumes existant au début, et à l'expiration de l'espace de temps considéré.

Un des principaux avantages de l'établissement de la possibilité d'après l'inventaire total, est même de permettre des comparaisons et des rectifications de ce genre.

Il y a lieu de remarquer d'ailleurs que cette manière de procéder est indépendante du mode de traitement appliqué à la forêt, et que d'autre part, la possibilité ainsi déterminée tend à se confondre avec le rendement et la production annuelle de la forêt; car la différence entre ces trois quantités résultant de la réalisation de quelques jeunes bois, non inventoriés, ne peut jamais être considérable.

(A suivre.)

IRRIGATION AND IRRIGATION DEVELOPMENT IN CANADA.

BY J. S. DENNIS.

(Read before the 17th National Irrigation Congress at Spokane, Wash., U.S., August, 1909).

The principle of irrigation as a means of insuring crop production is confined in Canada to the southwestern portion of the province of Saskatchewan and the southern portions of the provinces of Alberta and British Columbia. In the first two provinces irrigated land is used chiefly for the production of grain, fodder and food crops; but in British Columbia the areas are utilized for the growth of fruit. Irrigation in all these provinces is a matter of comparatively recent history, and, in fact, may be said to be the result of the past twenty years. As in the states of the Union, the first efforts towards irrigation were made by ranchers to provide water for small areas in the bottoms for the growth of fodder, or by some enterprising new settler to utilize some abandoned mining ditch to provide water for growth of crops on the area he had been brave enough to take up in what had previously been looked upon as only a mining or lumbering district.

The use of water through irrigation has now, however, extended beyond the experimental stage and has made wonderful strides during the past ten years in reclaiming large areas. In south-eastern Saskatchewan the systems, though numerous, are small and are largely confined to the areas on the north and south slopes of the Cypress Hills, and the introduction of

systems for the reclamation of large areas in that district is limited by the insufficiency of the water supply.

In British Columbia, which is a mountainous country, the water supply is bountiful, but the areas suitable for irrigation are available only in the valleys and are small in extent; and although the systems now in operation or under construction comprise many hundreds in number, the total area of irrigated land is not more than three hundred thousand acres.

SOUTHERN ALBERTA'S IRRIGABLE AREA.

It is in the great plains region of southern Alberta that the great Canadian irrigation projects are situated and there the principle of irrigation has been extended until to-day we have some 150 irrigation systems completed or under construction capable of supplying water for the irrigation of 1,750,000 acres. Several of these are of such magnitude and present such unique features in their development as to warrant special mention in a paper presented to this the most important of the world's irrigation conventions.

Southern Alberta comprises a great open plateau extending from the Rocky Mountains eastward for two hundred miles, and the portion within which irrigation is practised extends northerly from the international boundary for another two hundred

miles. This portion of the province has many fine rivers, like the St. Mary's, the Belly, the Kootenay, the Old Man, and High River, together with many smaller streams, all heading in the mountain range to the west and providing a bountiful supply of water from the melting snow or summer precipitation on that vast watershed.

The introduction of irrigation in this region began about fifteen years ago through the efforts of the ranchmen to improve the production of fodder on bottom lands by the construction of small and inexpensive ditches to divert water; and

other systems to irrigate areas from ten to fifty thousand acres were undertaken, and the Southern Alberta Land Company are now constructing a system diverting water from the Bow River for the irrigation of three hundred and fifty thousand acres.

THE C.P.R. IRRIGATION PROJECT.

The great impetus, however, was given to the irrigation development in Southern Alberta by the decision of the Canadian Pacific Railway Company in 1903 to undertake the reclamation of a vast tract of land comprising three million acres, situated



Headgates of the C.P.R. Irrigation Canal, Calgary, Alta.

although southern Alberta is not an arid country in the sense that nothing can be raised without irrigation, the success attending the artificial watering of land in the valleys justified the expenditure of the larger sums necessary to divert water to the bench or higher lands where larger areas could be reclaimed.

The first of these large projects to be undertaken was that of the Alberta Railway & Irrigation Company which undertook the construction of a canal system some ten years ago for the diversion of water from the St. Mary's River for the irrigation of some 250,000 acres in the vicinity of the city [of Lethbridge. Subsequently many

along the main railway line to the east of the city of Calgary. This block of land had come to the company as part of their land grant subsidy, but under arrangement with the Government has been granted in a solid block, instead of in alternate sections, so as to render the irrigation project possible; and after a large amount of preliminary surveying had been done by both the Government and the company the actual construction of the canals was commenced in 1904 and has progressed steadily ever since.

The area embraced in the Canadian Pacific Railway Company's "Irrigation Block," as it is commonly called, is bounded

on the west by the Bow River, on the east by the line between ranges 10 and 11 west of the 4th meridian, on the south by the Bow River and on the north by the Red Deer River and the north boundary of township 28. It has a length from east to west of 150 miles and an average width from north to south of 40 miles, and its magnitude may be illustrated by stating that it is larger than the states of Connecticut and Rhode Island combined, twice as large as the province of Prince Edward Island in Canada, one eighth the size of England and Wales, about the same size as the Hawaii Islands, and twice the size of Porto Rico. The area of land to be put under irrigation in the block is four times as large as the irrigated area of the state of Utah, about equal to the total irrigated area of the state of Colorado, and nearly one-seventh of the total irrigated area of the United States.

The block is an open prairie plateau, with a general elevation at its western boundary of 3,400 feet above sea level, and slopes rapidly to the eastward until an elevation of 2,500 feet is reached at the eastern boundary. The surface throughout is more or less rolling until the eastern section is reached, where large areas of almost level plains are found. The soil is good, with a heavy black loam and clay sub-soil in the western portion, and a lighter sandy loam with good sub-soil in the more easterly portions.

The portion of Southern Alberta within which this vast block of land is situated is not, as has already been said, arid in the sense that nothing can be raised without irrigation. The average rainfall for a series of years has been about fifteen inches, but this moisture is not always available when most needed by the growing crops; and it is recognized that without irrigation certain crops cannot be raised, and that in any year the certainty of crop production is assured by having water available to irrigate when necessary.

In developing this irrigation project the block was divided into three sections, eastern, central and western, containing about 1,000,000 acres each, and the construction of canals and incidental colonization is being carried on along the lines of development of the sections separately, beginning with the western.

The general engineering surveys so far completed indicate that of the total area about 1,200,000 acres can be irrigated, of which 350,000 acres are situated in the western section. The water for the irrigation of land within this block is diverted from the Bow River at two main points, the most westerly being situated about two miles below the city of Calgary and the most easterly about fifty miles east of that city. In the western section the construction of canals and ditches is well advanced

towards completion. At the close of the year 1908 some 1,150 miles of canals and ditches were completed, and during the present year 500 miles of additional canals and ditches will be constructed, giving a total of 1,650 miles of waterway within that section of the block for the irrigation of the 350,000 acres of land mentioned in the western section.

The engineering surveys indicate that about the same amount of canals and ditches will be required in each of the other sections; and the completed scheme will, therefore, comprise the construction by the company of some 5,000 miles of waterway at a total estimated cost of \$9,000,000.

In designing and constructing this project the company has departed from the usual practice on this continent of building only the main and secondary canals to deliver water to the area to be irrigated as a whole, and then leaving it to the purchasers of the land to get together and build the distributing ditches to supply water for the irrigation of the individual farms. In this undertaking not only the main and secondary canals are built, but also the vast system of distributing ditches so as to provide for the delivery of the water at some point on each quarter section of land offered for sale.

The land is sold from maps which enable the purchaser to see exactly where the water is to be delivered on the boundary of his quarter-section, and these maps also show from actual contour surveys the area which is irrigable on each 160 acres. This feature of the undertaking has necessarily added immensely to the engineering work but it overcomes any future difficulty as to areas that are irrigable or questions in connection with the delivery of water to the individual purchasers.

The irrigation project of the Canadian Pacific Railway Company from the standpoint of area included in the block, area to be actually irrigated and mileage of canals and ditches constructed, may, I think, be spoken of as "America's Greatest Individual Irrigation Project." It was undertaken by the railway company with the object of transforming a vast area, then unsettled and non-traffic-producing, into a closely settled and prosperous farming community with the attendant heavy traffic that always results from such districts.

CANADA'S IRRIGATION LAW.

In Canada we are, of course, confronted in our irrigation development by many of the problems which have been so ably discussed at the meetings of the National Irrigation Congress, and we recognize the great work which has been done by the Congress in arriving at a solution of these difficulties. Fortunately, however, we

have not been hampered by the serious drawback of litigation regarding water rights which has been the cause of so much trouble in most of the irrigated states south of the boundary.

We recognize that the permanency of title to water to be used in irrigation should be the first consideration to the purchaser of an irrigated farm. Fortunately our law relative thereto, which I might point out to you has on two separate occasions by resolution of this Congress been affirmed to be the best law extant, has been so framed as to overcome the many difficulties met with by the irrigated states south of the boundary. Its operation will be readily understood from the statement that, while our law has been in force for some fifteen years, and all our irrigation development has been carried on under its provisions, we have not up to date had one lawsuit relative to water rights.

The Canadian law relative to the use of water for irrigation differs from the American law in that it vests all water in the Crown, and only by making proper application for it and obtaining authority direct from the Government can this water be diverted from any source. The law also prevents the over-recording of streams, which has been such a marked source of trouble and litigation in the irrigated states to the south. In Canada the Government keeps a debit and credit account for each stream, the credit being the amount of water shown to be available by the Government gaugings and the debit the records granted from time to time by the Government against such supply. When these balance, no more records are granted and, as heavy penalties are provided for the diversion of water without authority, there is no possibility of over-recording streams or building canals and ditches for which there is no water available.

Under the provisions of our Canadian law the purchaser of an irrigated farm gets practically the same title, direct from the Crown, for the water he is to use that he gets for his land, and there is no chance of his being called upon to take any legal proceedings to protect his title as is often the case elsewhere.

The law is also strong in that the duty of water, or the amount of water to be supplied for irrigating a given area, and the irrigating season during which water is to be used, are both fixed by the law; and nothing is left to the whim or judgment of the company or individual selling water as to the amount of water to be supplied or the period of such supply.

Our irrigation development in Canada is, of course, a matter of comparatively recent years as compared with the development which has been the result of so many years' effort in the states south of the international

boundary, but in dealing with this problem we are endeavoring to handle it along the lines of the greatest benefit to the greatest number, and with the special object of creating in those provinces above mentioned permanent and prosperous homes where the introduction of the principles for which this Congress stands will result in a marked movement from the overcrowded centres back to the land.

We recognize, and I am pleased to have this opportunity of expressing to this Congress, our great debt for the vast amount of information which we have been able to obtain from the discussion before this Congress and from the different publications of the states within which irrigation is practised. In attempting to arrive at the desired end in western Canada and on behalf of the Company which I represent and of my fellow Canadian delegates I desire to express our keen appreciation of the great work which this Congress is doing in connection with the development of western America on a homemaking basis; and would say that as far as in our power lies we will appreciate the opportunity at any time of doing any thing we can to assist and advance the great work which this Congress has in hand, and which, in my opinion, is to day the most important work in connection with the development of western America that is being undertaken by any body of men.

The Congress may be interested in knowing that we are trying to follow in your footsteps by holding annual meetings for the discussion of problems connected with irrigation and have organized the Western Canada Irrigation Association which closed its third annual meeting at Lethbridge last week. We feel that only by getting together from time to time can we hope to deal intelligently with the many questions connected with this great movement, and if we in Canada can accomplish a small measure of the success which this National Irrigation Congress has reached in aiding the homeseeker to attain that home on a basis of permanency and future happiness, we will owe the National American Congress a further great debt for having marked the way in which we, like you, can benefit our fellow men and assist in building up on the western portion of this continent a happy, contented and prosperous home-loving people.

Some interesting developments in forestry in Ontario—among them the planting of the waterworks catchment area by the City of Guelph Water Commissioners and further progress in the Northumberland-Durham scheme for planting of waste lands in these counties—are held over for treatment in the next issue.

THE SECRETARY'S TRIP IN NEW BRUNSWICK.

On February 2nd the secretary left for Fredericton and began the making of arrangements for the annual convention. As soon as a number of details had been settled at Fredericton he left on a trip to various provincial centres. In all he held six lectures as follows: At Woodstock in the north-west, at St. John in the south, at Sackville and Moncton in the east and at Chatham and Campbellton on the North Shore. At Woodstock the lecture was held under the auspices of the Canadian Club, with Rev. George Ireland, the vice-president of the Club, in the chair. At St. John and at Moncton the meetings were also under Canadian Club auspices. At the former the president, Mr. M. E. Agar, occupied the chair, and at the latter the president, Mr. R. A. Borden, presided. At Chatham the meeting was held in the commodious new hall of the Natural History Society, Mr. J. L. Stewart presiding. The success of the meeting was largely due to the work of Dr. Baxter, the secretary of the society, and Mr. W. B. Snowball, a director and ex-president of the Canadian Forestry Association. At Sackville the Board of Trade arranged the meeting and Dr. W. W. Andrews, of Mount Allison University, introduced the lecturer. At Campbellton, also, the Board of Trade arranged the meeting in the Opera House and His Worship Mayor Murray made a very appreciative introductory address.

Good audiences attended all these meetings, and they doubtless had much effect in securing the large and enthusiastic attendance which characterized the Fredericton meeting.

The secretary then returned to Fredericton and made the final arrangements for the convention and the meetings connected therewith. In these he was greatly assisted by Hon. W. C. H. Grimmer, Surveyor-General; Lieut.-Col. T. G. Loggie, Deputy Surveyor-General; Mr. R. S. Barker, Secretary to His Honor the Lieut.-Governor; Dr. C. C. Jones, Chancellor of the University of New Brunswick; Mr. H. V. B. Bridges, Principal of the Provincial Normal School, and Mr. R. B. Miller, Professor of Forestry, University of New Brunswick.

Owing to the fact that about two hundred people were turned away from the illustrated lecture in the Civic Opera House by Mr. A. Knechtel, Inspector of Dominion Forest Reserves, the secretary agreed to give his lecture in the same place on the Monday evening following the convention. The Opera House was again filled with a very appreciative audience. Mr. T. B. Kidner, Superintendent of Manual Training for the Province, was the very efficient chairman of the evening.

After a few days spent in closing up matters at Fredericton the Secretary went to St. John and gave as much time as possible to seeing prominent citizens and interesting them in the work, until it was necessary for him to return to Ottawa for the annual business meeting. In this he received the cordial assistance of Mr. A. M. Bouillon, District Engineer G. T. P., Dr. G. U. Hay and Mr. Wm. McIntosh, Curator of the Natural History Museum. Everywhere the secretary was cordially received and great interest was manifested in the work of the Association.

NOTES.

The "Log Picking Association" has for its object the gathering of logs lost in the Georgian Bay. At its annual meeting in Toronto recently it was reported that \$53,000 worth of such logs had been saved during the past three years.

LECTURES BY MR. A. KNECHTEL, Inspector of Dominion Forest Reserves, spent the greater part of the month of March in a lecture tour of Western Ontario. Among the places visited were Toronto, Hamilton, Guelph, Stratford, Collingwood, Brussels, Ripley, Woodstock and Ingersoll. The tour was under the direction of the Forestry Branch of the Department of the Interior. Mr. Knechtel has also lectured during the winter in Ottawa (several lectures), Hull, Brockville, Newboro and Perth, in Ontario, and at Fredericton, N.B., during the convention there.

FORESTRY ENGINEER, French Swiss, 26 years of age, having the diploma of the Federal Polytechnic School in Zurich, late pupil of the School of Forestry in Munich, 2 years' practice, knowing French, German and English, seeks good and permanent situation either as manager of a wooded estate or as working manager or technical expert, in a timber business or other similar post. Copies of testimonials and diplomas if desired. Please Address N 15270 L. Haasenstein & Vogler, Lausanne, Switzerland.

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Photo by A. Mitchell, 1908

Interior View of old Tree Claim Plantation near Morden, Man.

(See article on "Some Manitoba Tree Claims" in Dec., 1909, Journal.)

NOTES.

CANADA'S FOREST PRODUCTS. The latest bulletin of the Forestry Branch, Department of the Interior, is entitled "Forest Products of Canada, 1908." It was compiled by Messrs. H. R. MacMillan and G. A. Gutches, and is No. 8 of the series. The production of lumber, lath, shingles, cross-ties, poles and pulpwood is given for the whole Dominion and also separately for the provinces; the amount and value of each species of trees are also given. Lack of space forbids longer mention of it at present. Copies can be obtained free on application to R. H. Campbell, Superintendent of Forestry, Ottawa, and may be had either in French or in English.

CONSERVATION COMMISSION ACTIVE. The activities of the Commission of Conservation, under the able guidance of its chairman, Hon. Clifford Sifton, have been very much in evidence of late, especially in regard to proposed legislation in regard to waterpowers. In the opposition to the Long Sault and Fort Frances power schemes the hand of the commission has been evident, and a study is now being made of forest fires especially along the National Transcontinental Railway in Ontario.

DOMINION FOREST SERVICE. During the coming season the Forestry Branch of the Department of the Interior will have six survey parties in the field, each to consist of a forester-in-charge, three assistant foresters and a cook. Of these parties two will be in the railway belt in British Columbia, two on the eastern slope of the Rockies, and two on the route of the Hudson Bay Railway. The work of tree distribution from the Forest Nursery at Indian Head will be continued as in former years. The number of fire rangers will be considerably increased.

QUEBEC FORESTRY SCHOOL. Special mention was made in the Speech from the Throne recently delivered at the opening of the Legislature of the Province of Quebec of the foundation of a school of forestry in the province. Legislation will be introduced at the present session to give effect to this. A number of young men now in the service of the provincial department of lands and forests will enter the school at its opening, after some months spent in practical work in connection with the department.

ONTARIO'S FOREST REVENUE. Ontario's total revenue from Woods and Forests during the ten months ending October 31st, 1909, was \$885,892.44, made up as follows: Bonus, \$285,571.41; Timber Dues, \$529,422.50; Ground Rent, \$68,528.53; Transfer Fees, \$2,370.00. The revenue from timber dues is for ten months only, and, as many of the accounts did not fall due until December 1st, are small as compared with some other years.

In the Mississaga forest reserve, Ontario, the timber damaged by fires in 1909 is put down as seventy-five million feet. The fire which injured the reserve came up from licensed lands to the south, and it was found impossible to ascertain the cause of the fire or fix the responsibility for it. Small quantities of red and white pine, both Crown and private property, on the Timagami reserve were also damaged.

Senator Davis, of Prince Albert, has introduced into the Senate a bill to amend the Dominion Lands Act, with the object of enabling a homesteader to fulfil part of his homestead duties by the planting of trees. The bill proposes that, within certain areas which may be judged by the Governor-General-in-Council to be suitable for tree culture, if any entrant on applying for a patent can prove that there are on his homestead one thousand healthy trees, planted by him, of not less than one inch in diameter, this shall be taken as equivalent to half the amount of cultivation usually exacted.

BROWN TAIL MOTH. Inspection of all imported nursery stock, in order to prevent the spread of the Brown Tail Moth, is being continued this year under direction of the Division of Entomology of the Central Experimental Farm, Ottawa. Last year over a million and a half imported seedling plants were examined and 196 nests were found. This year, as last year, all the nests have been found in imported French nursery stock. In Canada, so far, the pest has not spread beyond Nova Scotia. An account of the insect is given in the last report of the Experimental Farms.

Dr. J. F. Clark's many friends will be interested to know that he has entered business on his own account in Vancouver, under the style of J. F. Clark & Co.



O. A. C. [Students working in Ontario Government plantations, Norfolk Co.]

The Ontario Agricultural College

GUELPH, CANADA

Offers an excellent preparatory course for students intending to graduate in Forestry. In addition to the various subjects taught, many of which are prescribed by the Faculty of Forestry at Toronto University, students have the privilege each year of securing five months' field instruction and practical experience in the annual operations on the Government Nursery located in Norfolk County, Ont.

The tuition fee to residents of the province of Ontario is \$20.00 per year during the First and Second years. During the Third and Fourth years, \$50.00 per year.

Board may be secured in the Boys' Residence at \$3.50 per week. For complete information address,

G. C. CREELMAN, B.S.A., M.S.,
President.

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For further information address—

REGISTRAR,
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or

B. E. FERNOW, LL.D., DEAN,
Faculty of Forestry, University of Toronto,
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University Calendar furnished on application.

C. C. JONES, Chancellor.

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NEW HAVEN, CONNECTICUT, U.S.A.

A two years' course in forestry is offered, leading to the degree of Master of Forestry. Graduates of collegiate institutions of high standing are admitted upon certificate. The school year begins in 1909, July 6th. The first term is conducted in the field at Milford, Pennsylvania.

For further information address

HENRY. S. GRAVES, DIRECTOR.

NEW HAVEN, CONNECTICUT.

THE objects of THE CANADIAN FORESTRY ASSOCIATION are:

The preservation of the forests for their influence on climate, fertility and water supply; the exploration of the public domain and the preservation for timber production of lands unsuited for agriculture; the promotion of judicious methods in dealing with forests and woodlands; re-afforestation where advisable; tree planting on the plains and on streets and highways; the collection and dissemination of information bearing on the forestry problem in general.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is \$1.00 and the Life Membership fee \$10.00.

Application for membership should be addressed to the Secretary.

JAMES LAWLER,

11 Queen's Park, Toronto Ont.