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WINNIPEG MEETING REPORT.

The report of the Winnipeg Convention has now been mailed to all our members. While not so long as some previous reports it is one of the most important issued for some years, and all our members should read it carefully. It should be in the hands of every member before this and any who have not received it, or who would like an extra copy to send to some one who might be interested in forestry should notify the Secretary. Address The Secretary Canadian Forestry Association, Canadian Building, Ottawa.

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FOUNDATION WORK.

In taking stock of the forestry position it is seen that there has been a good deal of activity along certain lines with delay and hesitation along others. There is more machinery than ever before, more money being spent. The effort must now be to so balance the effort as to keep the cart behind the horse. What is needed is organization, co-ordination and the doing of first things first.

The statement was made at a recent meeting that there were thirty-six forestry schools in the United States, and that now nearly every state had its state forester. In some respects, therefore, forestry is coming on with a rush, so that there is need of directing this force into right channels. This large body of men talking about and working in forestry will awaken interest. The state foresters in their efforts to 'make good' will develop many projects that should have been

started years ago. The graduates of forest schools will open out useful work in directions that at present are not thought about. The case for forestry is so good that the more it is talked about the more progress is going to be made.

But while progress is being made on the popular side foundation work must not be overlooked. The whole art is so new on this continent that however sure conservationists are of the necessity and profit of forestry, the man in the street has yet to be convinced. People would be aghast if told by responsible men that in so many years agriculture or manufacturing would come to a stop, but the public either does not believe the forests will disappear in the periods named for different areas, or it does not realize the economic results of that disappearance.

As to how close we are to the time when our virgin forests will be depleted, while there are differences in details there is a general agreement that it will not be long. For the United States the National Conservation Commission put it at thirty years from 1907 and subsequent investigation has not materially altered their conclusion. In Canada some industries are largely existing on second growth timber, while industries in our old hardwood belt are importing five times as much hardwood as we produce. It takes from sixty to one hundred years to grow a timber tree. If our virgin timber is going to disappear in less than half a century then, even if we start reforesting now, there is going to be a gap between the old and the new. And we have not started reforesting either by natural regeneration or by planting.

But even more serious than this is the fact that the thing we say we believe we ought to do we are not undertaking as if we meant it. Everybody is agreed there should be

fire protection, that our existing supplies should be harvested without waste, and that cut over areas that are absolute forest land should be allowed to grow up again into timber, even if we do not go the length of seeding or planting.

One of the most vital things required to get efficiency in carrying out work, all agree to be necessary, is the extension of civil service reform to the outside services federal and provincial. The *Ottawa Citizen* dealing with this matter says:—

The position of the outside government servant, not appointed by the Civil Service Commission, is demoralizing and humiliating to a degree. No matter how efficient the outside government servant may be, merit is not taken into consideration when the question of promotion comes under review. The permanent officials at headquarters are not allowed to appoint, dismiss or promote an outside servant without the approval of the political hierarchy.

The newspaper is here discussing the customs service but the argument applies with even more force to the forest services because the men are miles away from the eye of superiors and from the restraining and correcting force of public notice and public opinion. Urging the extension of civil service regulations to the outside services is not as pleasant and popular work as opening forestry schools or securing the appointment of state or provincial foresters but it appears to be the most necessary work now before the Canadian Forestry Association and indeed before the Canadian people. There is no reason to doubt the intention of the Dominion Government, to extend civil service reform to the outside services but the pressure against this is tremendous on the part of party workers and it is only fair to the Government and to governments generally that the friends of forest conservation should throw their weight on the scales that the balance may be in favor of reform.

A Plan Adequate To Meet Our Needs For Timber.

Synopsis of an Address by Dr. B. E. Fernow at the Annual Meeting of the Society for the Protection of New Hampshire Forests.

Dr. Fernow began by stating that there was probably now nobody who had not grasped the idea that the fundamental object of forestry was to reproduce the forest crop which we had used, and, if possible, in better form. Looking over the United States there was little attempt at reproduction. The population was still growing, and while a reduction in consumption, from the present 250 cubic feet per capita per year to something like the consumption of European countries, was inevitable this change would not be made readily.

Dr. Fernow then quoted from the report of the National Conservation Commission to the effect that the cut was more than twice the annual growth and that there was then (1907) hardly thirty years supply in sight, so there was no time for dilly dallying.

He urged that fire protection and conservative logging would not meet the need as these were concerned with the *utilization* of the existing crop but did nothing to *insure* a new crop.

It was true that fire protection was essential to forestry as no one would invest money with a high fire hazard but fire protection had been so much improved of late years that the time was more propitious for pressing for reforestation.

Holding that, in spite of substitutes, timber would continue to be used and would continue to increase in price, and also that the natural regeneration method of timber reproduction would be found nearly as costly and far less effective than replanting he wished to go on record as holding the opinion that 'our future needs can not be satisfactorily and adequately provided for until we take recourse to planting operations on a large scale.'

Within twenty years the United States would have reached the point where virgin timber in which natural regeneration might still be practiced would be near its end. The country's needs must then be supplied chiefly from the so-called second growth and volunteer growth; and the area capable of restocking only by artificial means would have increased probably to 250,000,000 acres, over half the remaining forest soil. (Dr. Fernow estimated that in 1907 the forest area of the United States was 580 million acres). Then the people would be forced to plant whether they believed in that method or not.

It was useless to expect private enterprise to undertake this task owing to the long time element involved. The railways, needing a constant supply of ties, and paper companies, whose big plants were built with the idea of continuous forest supplies, might embark in tree planting, but Dr. Fernow was afraid that for the rest they would have to abandon the idea of individual endeavor and learn that community interests must be attended to by the community. In the end only the state and the municipality could be expected to provide for a distant future. There were foolish notions abroad as to the distance of that future and how long it took to grow a log tree. With most species in most localities nothing could be expected in less than 60 to 100 years.

He had no cut and dried plan for this except to set every state forester, state commission and forestry association thinking, to make them realize that their business was not only to conserve existing resources but to create new ones, and to recognize that this was a more serious matter than could be met by the distribution of a few thousand trees to private planters; that it required *systematic procedure on a large scale*.

Each state forester should make a canvass of his state to ascertain what lands could be left to private planting and what to municipal or state enterprise. He should work out a plan of state co-operation which might take the form in the case of municipalities, besides furnishing plant material and advice, of pledging the state's superior credit for raising the necessary funds by bond issues for acquiring and reforesting waste lands and in return securing supervisory power for the state. For New England municipal action was perhaps the most promising although in general direct state control might be preferable.

Dr. Fernow gave the following example to illustrate the method of procedure.

'Let us assume that a town has bought 5,000 acres of waste lands, which it could secure for say \$15,000, borrowing the money from the state at 3%; the 5,000 acres to be planted in a 25 year campaign; that is at the rate of 200 acres per year, at a cost of \$8 per acre; the annual outlay of \$1,600 to be furnished by the state from year to year, when the interest charges will be \$450 on the original investment and a series of interest payments of \$48,

increasing annually by \$48. The loans will then in the twenty-fifth year have accumulated to \$55,000 and the interest accumulations to \$26,870 or \$1,075 per year, and the highest last annual charge \$1,650, amounts not difficult to raise. After the planting is finished the annual interest charge remains stable at \$1,650. Now each year 200 acres may be thinned and every five years the thinning repeated. A net result of \$2 per acre for the first thinning (at that time wood prices will be higher) \$3 for the second, and \$3.50 for every subsequent thinning would be a reasonable assumption. In other words for the first five years after loans and planting have been completed the interest charges are met to the extent of \$400, in the second quinquennium to the extent of \$700 and in the third quinquennium a surplus begins to appear. Now arrangements for refunding the load may be made at once, or else merely interest may be continued to be paid out of returns for thinnings, the town receiving small incomes until the sixtieth year, when the first 200 acres may come to harvest yielding not less than \$120,000 (likely much more at that time) wiping out the loan and leaving a property worth several million dollars producing annual revenue.

'All that the state has done is to lend its credit, not one cent is given in charity, and the town has made no expenditure except for the care of the property.

'That these calculations are not chimerical may be learned from the experiences of France.

'Here the state reforested during the last century 200,000 acres of sand dunes at a cost of \$2,000,000. Of this 75,000 acres were sold reimbursing the total cost of the 200,000 acres and \$140,000 to boot, and leaving a property now valued at \$10,000,000.

'In the Landes the state, municipality, and private owners planted nearly 1,750,000 acres at a cost of \$10,000,000, the value of the recovered properties being now placed at \$100,000,000 based on their annual production.

'Some 200,000 acres of poor land, unhealthy useless waste, in La Sologne was planted by a private association at a cost of \$5 per acre. These lands which fifty years ago could not be sold at \$4 per acre now bring in over \$3 per acre annual revenue, being valued at \$18,000,000.

'These are actual results achieved and not fancies or forecasts.'

Dr. Fernow went on to apply this to larger areas. In New England he estimated there were five million acres immediately ready for planting. This on a twenty-five year campaign would necessitate planting 200,000 acres per year. Some planting was now being done but in the face of these figures did present work not look amateurish and inadequate?

Such an area (which was twice the forest area of Bavaria and Baden combined, producing \$10,000,000) planted with white pine at \$10 per acre and properly managed would produce annually its 2,000,000 M feet of lumber worth even at present stumpage prices \$20,000,000 and be an ample supply for any population that might then be located in New England.

Finally Dr. Fernow applied his figures to the United States and pointed out that now the federal government was giving aid to reclamation schemes, good roads, waterways, etc., it would not be out of the way to include reforestation in this list.

In 1970, by which time the most advanced of the forests planted now would begin to mature, Dr. Fernow estimated that the population of the United States would have become 225,000,000, and assuming that the per capita use of timber had decreased to that of England, 14 cubic feet per year, this would require the cut of close to 1,000,000 acres per year of first class forest growing for sixty years at the rate of four hundred feet B M per year. To keep up a continuous supply 60 million acres must be in that producing condition. The probability was that not less than 100 million acres would be required to satisfy all needs for wood materials.

Since less than \$20 per acre would be required for planting and interest account, an annual loan of \$20,000,000 for sixty years,—two dreadnoughts a year—would be ample provision. Dr. Fernow's concluding summary of his plan was as follows:

(1) Each state to ascertain its quota of planting area, classified for systematic procedure in its recovery.

(2) A co-operative financial arrangement by which municipalities may secure the credit of the state, and states the credit of the federal government for the purpose of acquiring and recovering their quota.

(3) State planting to be done on a large scale.

'If I have not developed a very definite and adequate plan to meet our need for wood and timber in the future I hope I have at least opened up a line of thought which may tend to its formulation.'

MR. MALLOCH'S POEMS.

Some requests have been made for information in regard to Douglas Malloch's new book of poems 'The Woods' which was reviewed in the September number of *The Canadian Forestry Journal*. Mr. Malloch is the Associate Editor of the *American Lumberman*, 431 South Dearborn St., Chicago, Ill. The *American Lumberman Co.* are the publishers of the book, and inquiries in regard to it may be addressed to them.

Quebec Provincial Nurseries.

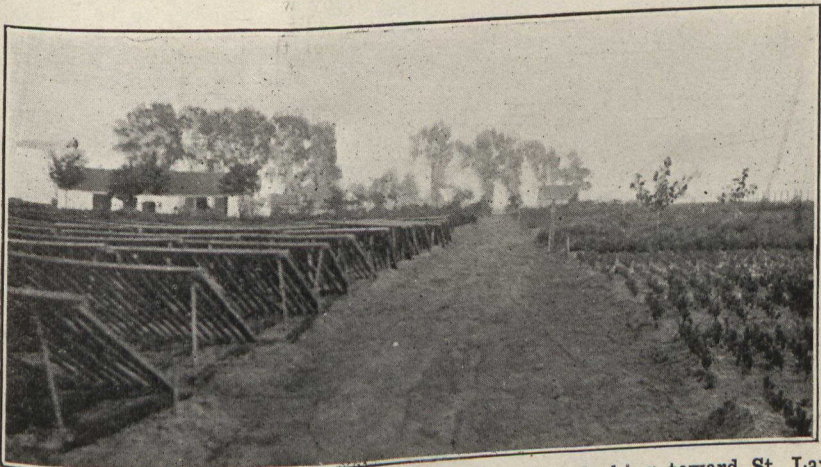
Description of the Forest Nursery Station at Berthierville.

The Secretary recently paid a visit to the Quebec Government Forest Nursery near Berthierville. This nursery, which consists of about sixty acres, is situated on the north bank of the St. Lawrence River near the town of Berthierville, and nearly opposite the city of Sorel. The site is well chosen both as to the character of the soil and for convenience in shipping the little trees by rail and water. The farm house and barns have been fitted up for the use of the resident forester, and accommodation is provided for the students who in the spring do the work of preparing the beds, sowing the seed and transplanting the seedlings into the nursery rows.

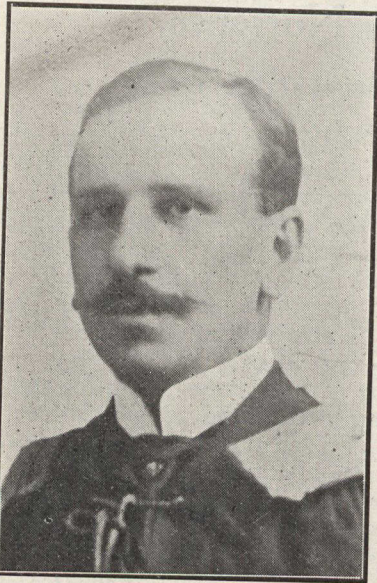
The species chiefly grown are pine and spruce. White and red pine occupy a large place, and the nursery is also making a thorough test of Scotch pine, which promises to do particularly well in the Province of Quebec. Tamarack and European larch are also grown extensively, and another conifer that promises

well is the red fir, the seed of which was brought from Idaho. Of deciduous trees, the ash, elm and maple are the chief representatives, black walnut six years from the seed is about nine feet high, and some European walnut planted two years ago is also making good growth. As an experiment there are some specimens of tulip trees or yellow poplar being grown, and while this tree has been frozen down the last two winters to about three feet above the ground, it is hoped eventually to acclimatize it.

The Secretary was shown over the nursery by Mr. G. C. Piché, Chief of the Forest Service, who pointed out that the nursery had now reached a size of five hundred beds. In these there were a few failures, but in nearly every case the reason for these was known, and as the work proceeds these can be avoided in future. The nursery has also been equipped with a water system which will materially improve the working conditions.



View in Quebec Government Nurseries Berthierville, Que., looking toward St. Lawrence River.



MR. G. C. PICHE, Chief Forester of Quebec.

From this nursery there are sent out, first the trees for the planting of the sand lands in settled districts, which is becoming an important feature of Quebec work; and also the trees furnished to farmers for the planting of their woodlots. These latter are sent out at a nominal cost, and the nursery will be enlarged as rapidly as the demand from these two sources increases.

TREES.

I think that I shall never see
A poem lovely as a tree.

A tree whose hungry mouth is prest
Against the earth's sweet flowing breast;

A tree that looks at God all day,
And lifts her leafy arms to pray;

A tree that may in summer wear
A nest of robins in her hair;

Upon whose bosom snow has lain;
Who intimately lives with rain.

Poems are made by fools like me,
But only God can make a tree.

JOYCE KILMER.

FOREST SCHOOL NOTES.

The opening of another college year finds professors and students returning to work, fresh and enthusiastic.

While definite information is not yet to hand it is expected that the number of students at the Faculty of Forestry, University of Toronto, will be about the same as last year.

The Quebec school reports a somewhat decreased number of students this year, owing to higher standard for entrance. The wisdom of so raising the standard, however, will certainly be shown in future years. Mr. G. C. Piché, the Director, writes:—

The Forest School of Quebec has reopened with a new class of nine students, of whom three are Bachelors of Arts. The direction having raised the standard of the examinations for entrance, very few candidates were able to satisfy the new requirements, hence the diminution in the number of new students; yet the number in attendance, comprising the other classes, will be about thirty-five.

Prof. R. B. Miller, of the Forestry Department, of the University of New Brunswick writes: We have about thirty-five students enrolled in forestry, viz., four Seniors, five Juniors, fifteen Sophomores, and eleven Freshmen. Out of a Freshman class of thirty-six in the University, eleven enrolled for the forestry course. The men returning from the West are full of enthusiasm and new plans to be carried out, and this promises to be a very successful year. Among the new lines which will be attempted will be a small lumbering operation on the college lands, the building of three miles of telephone line to the camp, the making of trails and roads, a continuance of the work in estimating on the college lands, with a rough working plan for the same, a topographic survey of the college grounds by the Seniors and, possibly, a new course in forest entomology given by the Provincial Entomologist. The woods are in fine condition this fall, as there has not been much rain, and until cold weather a large amount of field-work will be carried through. The cutting of cordwood and logs will allow a further chance for work in the winter months. The Seniors have been assigned the new Victoria Mills of Donald Fraser and Sons, Limited, upon which they are to make a report. This mill is equipped with a double-cutting band-saw and all the modern appliances for manufacturing lumber, lath and shingles.

Replanting in Norfolk, Ont.

The following article is abbreviated from the *London Free Press* which newspaper also kindly loaned the accompanying engravings.

There is perhaps no other section of country in Ontario which has gone through the successive changes that may now be traced in the lower part of Norfolk County, in the famous sand-blown lands near St. Williams. Nor, possibly, anywhere in Ontario, is there a movement that has more of interest in the results that are being produced than this joint work of reforestation and producing treelets for the whole province that is being carried on here. For the work that the Ontario Government is carrying on at its nursery stations here is of a double character, being applied not only to sand ridges of Norfolk County but made also the center from which go out all over Ontario the little trees that some day will be turned into wealth for this province.

From this Norfolk nursery station there are now being sent out each year hundreds of thousands of little treelets. These go to farmers, to municipalities and to companies owning timber lands. The City of Guelph two or three years ago set out property a few miles outside the city. It is the belief of the Guelph waterworks board that eventually they will have a steady revenue coming in from their forest area. On the property there was considerable standing timber when it was purchased. A certain amount has been cut out and sold at intervals and this will become a regular practice when the forest area has been further developed.

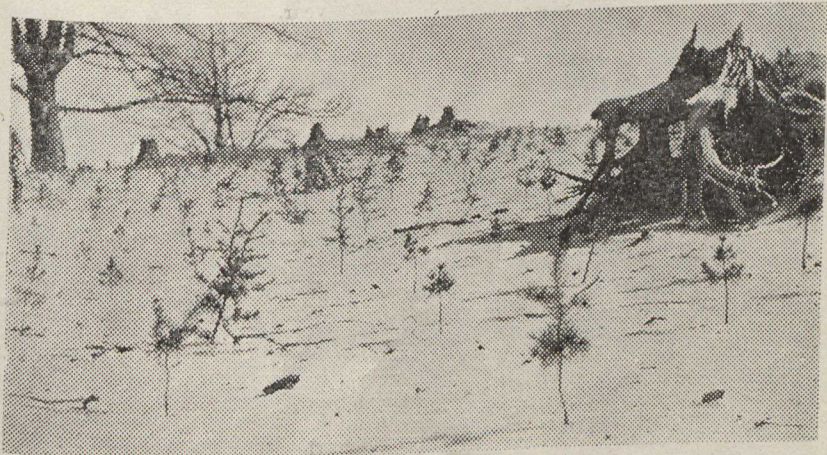
Norfolk County Changes.

Norfolk County, where the Government work is carried on, was one of the earliest settled counties of western Ontario. There were settlers in this district at the opening of last century, many of them United Empire Loyalists. The men who came in first found the whole country a forest and faced the task of clearing up their land before they could grow anything. It was a task the nature of which is hard to appreciate in these days when the older counties are so well cleared up. The farm which now forms the center of the Government's operations was settled as early as 1804, yet in 1908 it was bought by the forestry branch for \$5 an acre, and other near-by farms have been sold at a figure equally low. The reason is that in the century of its existence this farm property had undergone changes which made the price paid all that it was really worth. From forest to farm was the first transformation, then followed many years of tilling, during which its occupants 'never allowed anything in the nature of a crop to get above the ground without taking it off.' The result was inevitable. Year by year the productive power decreased; eventually there were fields that did not return sufficient to pay for the labour put upon them, then the owners and tenants moved elsewhere or took up some other work. The abandoned farm followed, saddest sight of all in this land of good farms and rich orchards and gardens.

The Sand Ridges.

Those who travelled through South Nor-

IN NORFOLK COUNTY.



This gives an idea of how the soil has disappeared since the forest was cut away and shows how young trees are again taking root.

folk 10 years ago, along the branch of the Grand Trunk Railway that runs from Simcoe to Port Rowan, saw stretches of almost absolutely barren sand ridges, stumps of trees showing up above the drift, once in a while an old shed or a wagon half buried in the sand. It was a dismal prospect after passing through the lovely farm and orchard country further north in this county. Yet it was the very prospect that one day was to attract the attention of a man who could see the possibilities of improvement.

That man came in the person of Prof. E. J. Zavitz, who had charge of the forestry work at the Ontario Agricultural College, and who was sending out from the nurseries connected with the college the little treelets that were required by the farmers of the province to restore their wood lots. He saw the possibilities of a work in Norfolk County that would restore in considerable measure the usefulness of these stretches of abandoned sand lands. When the situation was set forth to the provincial department he was authorized to move the Government's forest nurseries from Guelph to the new station at St. Williams and to begin the planting of these sandy tracts with trees suited to the locality. The idea in the minds of the officers of the department was that such a plantation would demonstrate to the farmers of Ontario how best to proceed with the reforestation of such lands elsewhere, in large or small tracts, and would also demonstrate that reforestation of considerable blocks of these lands could be profitably undertaken by municipalities or by individuals who could wait

the time required for returns. For reforestation does not give its return at once; it is a slow process to build up a forest that has disappeared.

Large Tracts Treated.

The work began with the purchase by the department of 300 acres of ridge land. This has been increased until now there is five or six times this area in process of reclamation. Seedbeds and nursery rows have been set out, and some of the worst hills those whose tops were blowing into the adjacent valleys and covering up the fairly good land there, have been planted out. These small trees, though planted in what seems a veritable sandbank, without a blade of grass to be seen for acres, have done well, and, small as they are, have held the sand from blowing. Fields fairly level and available for nursery beds have been sown to rye, cowpeas, clover, etc., and the soil enriched by turning in the crop. The results have been astonishing in many cases.

From these nursery beds hundreds of thousands of seeding trees go out to Ontario farmers and others. The demand is increasing year by year as the value of the work becomes known and the experiments which are constantly under way at the station are bringing together information that materially assists in the whole forestry movement. The trees set out in permanent location on the plantations include black locust, jackpine, Scotch pine and white and red pine, while experiments are also being conducted with ash, walnut, oak and butternut. It has been found that the black locust thrives best of all on these Norfolk sand hills, though jackpine and



Planting Seedlings in Nursery Rows.

Scotch pine are close seconds. The black locust has the very useful power, like clover in this respect, of enriching the soil in which it grows by the colonies of bacteria which adhere to its roots. Thus, quite outside of its use as timber, it is useful as a culture plant. The wood, though not well known in Canada, is highly valued for work requiring toughness and firmness. Insulator pegs, vehicle and railway car timbers and fence posts are uses to which it is now put.

On a recent visit to the station at St. Williams, Hon. W. H. Hearst, Minister of Lands, Forests and Mines, expressed himself as astonished and delighted with the work that was under way and the progress that was shown. He further declared that the movement would have his still warmer sympathy and support since he had seen for himself what was being done.

PROTECTION ALONG RAILWAYS.

One of the things that is demanding attention is the protection of forests along railway lines by the clearing of debris from a strip two hundred feet wide on each side of the right-of-way. Mr. Clyde Leavitt, Chief Fire Inspector for the Canadian Railway Commission writes of this subject:

'Provision should be made, by either legislative or administrative action or both, of all the Provincial Governments of Canada, for the enforced removal of inflammable debris on lands adjacent to railway rights of way. This is absolutely essential to a reasonable degree of safety from fire, of forests and other property along railway lines. The Dominion Railway Act requires that railways operating under Dominion charters shall maintain their rights of way free from dead and dry grass, weeds and other combustible matter. The Railway Commission enforces this provision. It also requires the use of the best fire-protective appliances on the engines and also that the railway companies maintain patrols and take adequate steps in reporting and extinguishing railway fires.

'Engines still throw some sparks, however, and fires along railway rights-of-way are started as well by smokers, tramps, and numerous other agencies, either careless or malicious. Unless immediately discovered and extinguished, fires starting on the right-of-way quickly spread to adjacent lands, where, in the case of forest lands, the almost universal presence of large quantities of dead, inflammable material, facilitates the rapid spread of the fire, and renders extinguishing difficult, if not impossible. This situation is especially bad in the case of the large areas of cut-over lands, which so gener-

ally parallel the railway lines in the non-agricultural sections.

'If the land or timber owners removed this material on a strip two hundred feet wide outside the right-of-way, on each side of the track, it would enormously increase the efficiency of the measures which the railway companies are required to take, and would without question decrease to a remarkable extent, the destruction from fires along railway lines. Not only would the destruction of much private property be avoided, but large quantities of young forest growth on cut-over lands would be given a chance to reach maturity, instead of being burned over periodically and so being kept in a perpetual state of unproductivity.

THE FIRE-BUG AND THE EAST WIND.

E. T. Allen, Forester, Western Forestry and Conservation Association.

'It's time to hit the trail again,'
The careless camper said,
And left his little fire ablaze
Within its leafy bed.

'I'll light another cigaret,'
The idle loafer said,
And chucked his old snipe in the brush
One end still glowing red.

'No, I'll not burn my slash this spring,'
The moss-back logger said,
'I'll trust to God and luck again;
Expense is what I dread.'

'Let's punch the screen out of the stack,'
The donkey fireman said,
And so he did, and all the sparks
Sailed blithely overhead.

'Come on, we'll dump our ashes now,'
The railroad trainmen said,
The train soon fanned them far and wide
As on its way it sped.

'Good time to fire my slashing now,'
The thrifty rancher said,
And touched it off without a thought
Of how far it might spread.

'I'll think I'll blow an hour or two,'
The restless east wind said,
Then liked it so he changed his mind
And blew a week instead.

'Millions in lives and timber lost,'
The newspapers next said.
What made those fires all start at once,
We wondered as we read.

'It wasn't us, it was that wind,'
The fools in chorus said.
So they're alive and loose this year,
—We hope the wind is dead.

DOMINION FORESTRY BRANCH.

Notes of Work and Workers.

The reconnaissance surveys are now nearly all complete and the students in charge are preparing to return to the Universities to complete their course in Forestry. The forest surveyor must be a man of parts for many unforeseen difficulties have to be met and over come in penetrating the tangled tree-growth and brulé of the muskegs and mountains of Western Canada. Mr. Doucet, in charge of a party near Smoky River, writes: 'A forester needs to be here, besides all other professional titles, a real bushman, an all-man and a jumper.' C. H. Morse, who crossed the outer mountain ranges to explore the hinter lands of the Rockies in Northern Alberta, had great difficulty with the snow in the passes, and on one occasion while returning to camp, the party was caught in a canyon by a blizzard and were forced to spend the night there; an experience one seldom gets the opportunity of repeating.

* * *

Mr. Lionel Stevenson has completed an examination and soil-analysis of the sand lands temporarily reserved on the Saskatchewan prairies by the Dominion Government, and with the exception of the area around Good Spirit Lake, has found them unsuited for agriculture. He also recommends that the strip of rough hill land bordering on the Saskatchewan River be set apart for forestry purposes, as the thin soil and porous gravel subsoil make agriculture impracticable, while if tillage is permitted, erosion will result and navigation be impeded in the river by the formation of bars and islands.

* * *

Owing to the increasing efficiency of the fire protective patrol on the timber areas of the Dominion Government in Western Canada, the fire-loss this year is probably the smallest ever recorded. It is the intention of the Forestry Branch to prepare statistics on forest fire losses in Canada in 1912.

* * *

There are now twenty-seven technically trained foresters in the permanent employ of the Dominion Forestry Branch.

* * *

The Forest Nursery Station at Indian Head has already this season distributed nearly two and three-quarter million trees to prairie farmers, making a total of twenty-three million trees distributed up to date. The demand has so increased that the Forestry Branch found it necessary to establish a branch nursery near Saskatoon which will have seedlings ready for distribution next spring.

FOREST PRODUCTS LABORATORY.

Mr. A. G. McIntyre, who is in charge of the Dominion Government Forest Products Laboratory at McGill University has been visiting the United States Forest Products Laboratory at Madison, Wisconsin. He reports a satisfactory and profitable visit. This laboratory and its subsidiary laboratories were established in 1910 at a large cost, \$100,000 having been spent on work on ground wood problems alone. The two great achievements to the credit of this institution are the adaptation of the sulphate process to the southern pines and in mechanical pulp. Mr. McIntyre is back in Canada and beginning work in his new office.

AFFORESTATION IN BRITAIN.

In an article on 'Afforestation in the United Kingdom' in *Science Progress*, it is shown that only 3,071,047 acres of land in the United Kingdom are in forests or 4 per cent. of the total area, or .07 acre per capita. In only one European country is the percentage as low, namely Portugal, but the area per capita here is larger. Even Holland has 7 per cent. of her area in woodland, while France has 18 per cent., Germany 26 per cent., Russia 37 per cent., and Sweden 48 per cent. Finland leads the European nations with 63 per cent. Thus it is that practically all of the timber used in England must be imported and the imports of hewn and sawn timber in 1909 amounted to 140,000,000.

ANTICOSTI ISLAND.

Henri Menier, the French chocolate manufacturer who died recently, was chiefly known to Canadians because of his purchase of the Island of Anticosti in 1895 for \$125,000. The island which lies in the Gulf of St. Lawrence is 135 miles long and 40 miles wide. Mr. Menier spent large sums of money in developing the island and in recent years a large amount of pulpwood has been produced which has been shipped to Ontario mills.

British Columbia Forest Work.

Bird's Eye View of Conditions in the Pacific Province.

Mr. H. R. MacMillan, Chief Forester of British Columbia writes as follows:—

‘Following up your excellent system of securing information from the different forest organizations each month I am sending herewith a short synopsis of our work this last month. You will probably receive information as to different details of our work from other members of our staff, therefore, I shall only refer shortly to general policies.

‘I have just returned from a series of meetings which have been held by the Minister of Lands to discuss with the lumbermen and timber owners of the Province an equitable system which might be adopted for the increase of the rates of royalty charged on timber cut from Crown land. It is purposed to increase the rate of royalty as it is believed that the timber now being logged is worth more to the public than the 50c royalty now collected.

‘Many different systems of increasing royalty were brought forward by the lumbermen, among them being the grading of the timber and the increase of the rate on the high grades and the collection of the royalty as a percentage of the value of the timber sold. At these meetings opportunity was taken to discuss with the lumbermen the fire protection work of the Forest Branch and arrangements were made to have the timber owners of the Province appoint advisory committees who would work with the Forest Branch in improving and supervising the fire protective work.

‘The past fire season has been most successful. The Forest Branch has had at work 415 men in addition to 60 men who are employed by the railroads under the supervision of the Forest Branch. The expenditure for patrol has been over \$200,000, the highest expenses per month being about \$50,000. Arrangements were made for the employment of 100 extra men through the fire season, but owing to the weather it was not necessary to call out this emergency force. Thirty-seven boats were used by the Forest Branch in fire protection this summer.

‘Improvement work is being carried on throughout the Province and at the present moment nearly 600 miles of telephone line are under construction and 1,200 miles of trail. Most of this is being paid for from the fire protection fund; in some cases lumbermen are contributing towards the cost of work which is being carried on by the Forest Branch. The most notable fire protection improvement under

construction is the cable telephone line connected with the heavily timbered islands between Vancouver Island and the mainland north of Vancouver in which district is at present the heaviest timber cut in Canada, the output over a small area being about one billion feet per year, also a telephone line which has been constructed to a lookout point on the summit of Mount Baker near Cranbrook; this line reaches an altitude of 7,200 feet and is believed to be the highest telephone point in Canada. From its terminus may be secured a view of an area of over 2,000 square miles in the water-sheds of the Columbia, Kootenay and St. Mary rivers. A lookout will be stationed at this point throughout the fire season and will be able to send to the office of the District Forester at Cranbrook first intimation of any fires occurring in the most valuable timber holdings of the Crows Nest District.

‘A complete system of trails and lookout points connected with telephone is being completed in the irrigation districts around the Okanagan Lake; this system will be perfected this fall and should prevent any further fires in the important watersheds in this region.

‘Arrangements have recently been made whereby the Forest Branch undertakes the inspection of lands before they are open for settlement in order that timbered and non-agricultural lands may be kept in reserve for forest purposes. About a dozen parties are now in the field engaged at this work. All lapsed timber licenses and leases are examined by the Forest Branch before action is taken towards their disposition and all areas on which there is merchantable timber or which are unfit for agriculture are reserved for forest purposes. Field examinations have recently been made of the watershed of Seymour and Capilano Creeks north of Vancouver, from which Vancouver and surrounding municipalities derive their water, and recommendations have been made that the forested watersheds of these creeks be set apart as forest reserve.

‘The fire season which is now about over in the Province has resulted very favorably. There are about 1,800 miles of railroad under construction through timbered land in the Province. Construction was carried on clearing right of way and working in the timber through the summer and although a large number of fires were started they were all extinguished by forest officers before any damage resulted. The total area burned over by fires start-

ing from railroads under construction was less than three square miles, similarly fires resulting from operating railroads were kept under strict control.

There were between ten and eleven thousand permits issued to settlers for the clearing of land; in all cases the areas to be burned over were first inspected by fire wardens and no fires resulted from this cause. The sentiment in British Columbia towards the permit law is extremely favorable and this law has worked out so satisfactorily that it is to be recommended to the other provinces of the Dominion. Between 800 and 900 fires occurred during the past summer, all but 95 were extinguished by the fire wardens without any extra cost; the average cost of extinguishing the 95 for which assistance was required was less than \$50.00 per fire. This small cost of fire fighting is due to the system of patrol employed in all districts where the fire danger was great, to the use of boats on all water ways which enabled wardens to get to fires rapidly, and to the fact that the fire hazard is being constantly decreased through the cleaning up of roads, burning of slash and the making of fire breaks which is being carried on under the direction of the Forest Branch.

The Forest Branch still continues to receive applications for the purchase of small areas of timber; eight parties are now in the field cruising timber for sale. During the past two or three months the dullness of the lumber business has interfered with logging on several of the timber sales and has made it advisable to delay the completion of pending timber sales if the timber is to be sold for its possible market value. The largest transaction now pending is the sale of 500 million feet of timber chiefly hemlock to the British Columbia Sulphite and Fibre Company for the manufacture of chemical pulp, the cutting period on this sale will be between twenty and thirty years and the officers of the Forest Branch are finding it difficult to devise a system of revising the stumpage price periodically in order to protect the Government interests and to be fair to the Company. A very careful examination is being made of the tracts to be cut over in order to render possible the framing of regulations which will protect and encourage the reproduction of the forest. This sale when completed will embody practically all forest regulations and should be of interest in Eastern Canada where sales of pulp timber to companies are frequently taking place.

The Government has recently inaugurated a new policy of handling grazing on public lands by the permit system, the administration of grazing on all unalienated public lands in the Province has been placed in the hands of the Forest Branch.

There are large areas in different portions of the Province where there are almost unlimited possibilities for summer grazing and some possibilities for winter stock in the open. An investigation is now being made of this by the Forest Branch and reports will soon be issued.

Dr. H. N. Whitford has recently arrived in Victoria and will co-operate with the Forest Branch in completing a reconnaissance of the Forest reserves of the Province.

J. M. Swaine, Assistant Dominion Entomologist, has in co-operation with the Forest Branch examined the chief lumbering regions of the Province in order to obtain if possible information of any damage by forest insects. This investigation has resulted in the discovery of serious damage by bark beetles in yellow pine but up to date no other timber of commercial importance has been found to be affected.

All logging operations in British Columbia are carried on under authority from the Forest Branch and in order that forest officers may keep in sufficiently close touch with the work in the different operations, prevent trespass, undue waste and illegal handling of timber, instructions have recently been issued to have all logging operations inspected at least once in three months and reported to the Chief Forester.

THE DANGEROUS CIGARET.

A leading Ottawa lumberman, whose firm has suffered rather heavily from fire in the past season, in speaking to *The Canadian Forestry Journal* called attention to a new danger which threatens not only the timber owner but also the owner of property in towns and cities. This danger is the great increase of the cigaret habit. Our railways are now practically wholly constructed by foreign laborers who are inveterate cigaret users. The cigaret requires much more constant lighting than the old fashioned pipe, and the burning matches are thrown carelessly down wherever the man happens to be with the result that fires get into the slash and from that into the green timber along the line of the railway. An even greater danger arises from the fact that when the man is through with the cigaret he throws the glowing stub down with equal carelessness, and fires start as a result. In towns and cities cigaret smokers throw burning stubs down gratings, over fences or into boxes or barrels. Inflammable material is likely to lie in such places and thus our fire losses in towns as well as in the forest rise to a proportion that is nothing short of criminal.

Reserve Regulations Revised.

More Adequate Provision for Grazing and Fire-Protection.

The new Regulations for Dominion Forest Reserves, which became law in August, 1913, are in some respects much superior to the old regulations of 1906. These latter made no adequate provision for grazing, in fact, it was prohibited except by special permit from the Director of Forestry, and could only be obtained by an actual settler in the vicinity of a Forest Reserve in Manitoba, Saskatchewan or Alberta, and then only for fifty head of cattle. But the new Regulations are framed to encourage grazing rather than discourage it, for, not only settlers, but also ranchers and non-resident land-owners, can now obtain permits from the local forest officer to graze cattle to the full extent of the range capacity of such Reserves, as determined by the Director. The number of head which each cattle-owner is allowed to pasture is determined by the number of applicants for permits and the range capacity of the Reserve, the minimum number being fixed by a 'grazing unit' based on the number of cattle which can be carried through the winter by a homestead or small ranch. The minimum dues for cattle and horses shall be five cents per head per month and the maximum shall be ten cents per head per month, the dues for sheep being one-fourth of those for cattle. As many applications have already been received for grazing

permits, it is likely that the revenues of the Dominion forest reserves will be substantially augmented by this new law.

Quite as important from the standpoint of the forester are the improvements in the regulations regarding fire-protection on Dominion Forest Reserves. Previous laws provided for the maintenance of plowed fire-guards and the clearing of rights-of-way within Reserves, and also for the maintenance of fire-rangers by the railways during the construction of the same, but in the case of railways not subject to the control of the Board of Railway Commissioners, no regulations had been made previous to those of 1913, for the maintenance of fire-patrols by railways in actual operation within Reserves.

These new regulations also requires that all timber-cutting upon the Reserves shall be done under the control of the forest-officers, permittees and existing licensees being required to dispose of tops, of branches and other debris, to prevent, as far as possible, the danger from fires. Lopping of branches and piling of brush is already required of all settlers and others cutting small lots by permit. Whether licensees lumbering large areas within the Reserves, can be induced to take similar precautions against fire is conjectural.—G. E. B.

United States National Conservation Congress.

Washington, Nov. 18-20, 1913.

The Fifth National Conservation Congress has been called to meet in Washington, D.C., Nov. 18-20, 1913. While the Congress will take up the whole subject of conservation, special attention is to be given this year to the subject of forestry. It has been decided that at least two full sessions of the Congress will be devoted to forestry matters. Special committees have been at work since the last Congress under the direction of the Forestry Committee, of which Chief Forester Henry S. Graves is the Chairman, investigating subjects of importance to foresters and lumbermen, and these committees are to make their report at the meeting. The President of the United States is expected to address

the Congress. Members of the Cabinet, Senators and Representatives, the Chiefs of the government bureaus and the representatives of practically every State, will be heard. There will be a number of important social functions, including a reception by the President of the United States. The headquarters will be the New Willard Hotel, Washington, in the assembly halls of which most of the sessions will be held. The President of the Congress is Mr. Chas. Lathrop Pack and the Secretary Mr. Thos. R. Shipp, New Willard Hotel, Washington, D. C., from whom information in regard to railway rates, registration, membership, etc., may be obtained.

With the Forest Engineers.

(Contributed by the Canadian Society of Forest Engineers.)

In Northern British Columbia.

H. S. Irwin, District Forester at Prince Rupert, writes:—

'For the last seven months I have been stationed in Prince Rupert, and have been attempting to cover a district over three hundred miles in length with several thousand miles of shore line, by means of a "dinky" motor-boat. There are innumerable small logging outfits scattered along the coast, and this, with the fire patrol, keeps us pretty busy.'

H. C. Kinghorn writes as follows from Hazelton:—

'At present I am holding down the position of Forest Assistant in the Hazelton Forest District,—which takes in all the central part of northern British Columbia. I arrived here the latter part of May, 1913, having been transferred from Fort George, where I spent the previous nine months on reconnaissance and general timber-administration work. Our chief work here so far has been forest fire-protection, — and thanks to the weather conditions and the good generalship of the District Forester, Mr. R. E. Allen, lately District Fire Warden of Revelstoke, the season has been very successful from that standpoint, as fires have been very few and occasioned little expense. We are now working on permanent improvements for a better system of fire-protection, and plan for the construction of several short trails, a telephone line and several cabins for our guards' permanent head-quarters, and for a place in which to keep our fire-fighting equipment. This district is not over-stocked at present with merchantable timber, on account of forest fires having swept over a large area of it, but many places, especially the watersheds are still covered with a good growth of young trees. If our forestry principles are carried out this will be protected for the future welfare of the country. This is an immense country, most of which is still undeveloped, and its real value is still unknown.'

In the Rockies.

W. N. Millar, District Inspector of Dominion Forest Reserves for Alberta, sends a brief note suggestive of the strenuous life of the West. He writes, under date of August 28th, as follows:—'I am at the same old thing—three weeks in the mountains on bacon and beans, and one week of double time in the office, trying to

avert the wrath to come. I leave for my final long field trip of this season in a few days, and will be out for six or seven weeks on the Bow, Clearwater and Brazeau, if three high passes I must cross don't snow up before I get to them. The season has been fairly successful so far. Practically no fires as yet, but very dry weather for the past two weeks, which I am now beginning to get anxious about; it is bound to break in the next two weeks with the annual September big snow, but there may be trouble in the meantime.'

Southern British Columbia.

From Cranbrook, B. C., G. H. Prince writes:—

'In June, 1912 I was assigned to special examination work in the interior of the province, working at Creston, Waldo, Cranbrook and Aspen Grove. In December, 1912, I was appointed Forest Assistant in the Cranbrook District, working with J. D. Gilmour, District Forester. During last winter I examined over one hundred logging operations, travelling a great deal on snowshoes, and enjoyed the work very much. The greater part of this season has been spent in land and timber examinations, trail, telephone and lookout construction, besides a small amount of office work.

I have found the work very interesting and very full of good experience which should prove of great value to me in the future.'

R. H. Campbell, Director of Forestry, recently returned to Ottawa after a trip of inspection in the Western provinces, occupying nearly three months.

A. H. D. Ross, of the Faculty of Forestry, University of Toronto, paid a short visit to Ottawa recently on his return from his summer's work as Consulting Forester of the Canadian Pacific Railway's Department of Natural Resources, most of his time being spent in Calgary. On his return he spent a short time at the United States Forest Service Forest Products Laboratory at Madison, Wis., where research work of much interest is being carried on.

R. B. Miller, professor of forestry at the University of New Brunswick, paid a short visit to Ottawa recently after his season's work with a number of his students in the woods in the Maritime Provinces.

QUEBEC FOREST SERVICE NOTES.

Most of the forest engineers in the employ of the Department are now returning from their field explorations.

Mr. B. Guérin, F.E., has completed the examination of seven townships, making a complete inspection of all the lots which have been sold or patented, and classifying the lands still vacant. This is the first time that the Department of Lands and Forests has inspected the patented lots, as well as those still unpatented, in the endeavor to ascertain with more exactness what is the movement of colonization and the need of more lands to be occupied.

Mr. Geo. Boisvert, F.E., after visiting several townships in the counties of Montmagny and L'Islet, is now completing the exploration of a portion of the upper basin of the River St. John, in the county of Kamouraska, in order to determine the forest value of these tracts and what sections of them should be set aside for colonization purposes. He reports very good forests and a small area of arable land which will allow of the creation of a new parish.

Mr. L. J. D. Marquis, F.E., has spent the summer making an inventory of the basin of the Assemetquagan river, covering over three hundred square miles. Though some sections are burned, the rest consists of a good stand of spruce and

balsam fir of very good size. Mr. Marquis has also done good work in the control of operations of local saw-mill owners and wood-buyers.

Mr. Ernest Menard, F.E., has just arrived from his exploration of the upper basin of the Peribonka, where he has found some good forest land, very suitable for pulp and paper mills.

Mr. Laliberté, F.E., who is working in the upper basin of the Mistassini, which is next to Peribonka, on the northern shore of Lake St. John, will not return till the end of next month. He sends word that the work is going on well and all the members of his party are in good health.

Mr. H. Kieffer, F.E., has completed the inspection of Rolland township, on the Rouge river, and of Robertson township, on the Lièvre river, which were requested by settlers.

Mr. Henri Roy, F.E., after making a brief reconnaissance of the forest conditions in the townships of Remigny, Montreuil, Villars, Beauneville, Caire and Bellecombe, has sent back part of his party and is now on his way to Lake Victoria, whence he will return by the beginning of November.

Messrs. Sicard & Lavoie, Forest Engineers, after having inspected the forest conditions of the upper basins of the Harricanaw and Bell rivers, are now making a preliminary survey of the Megiskan river.

All these data will be tabulated and some of the reports will eventually be published in bulletin form.

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