

Canadian Forestry Journal

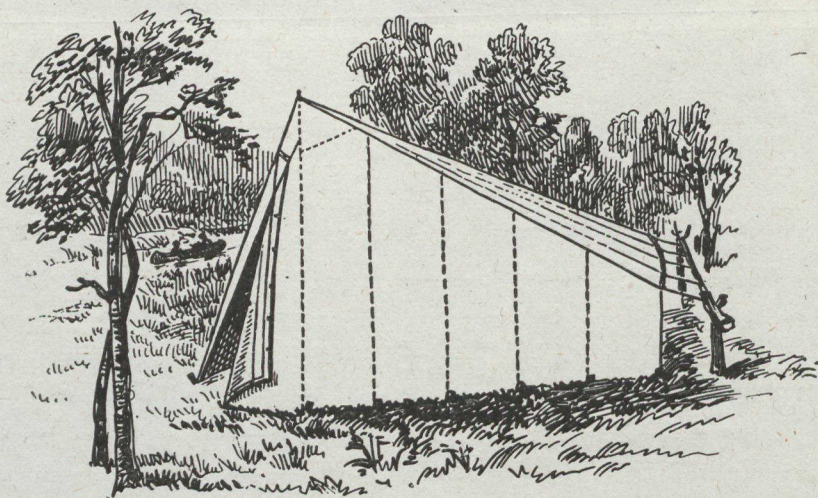
Vol. XIII.

WOODSTOCK, ONT., OCTOBER, 1917

No. 10



TENTS



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How a 'protection belt' of trees pays good profit to the fruit grower. Orchards heavy with fruit are often protected so that loss from windfalls and broken branches is greatly lessened.



The above picture shows the progress made on the pine and spruce plantations on the sand lands near Lachute. The work has been in charge of Mr. G. C. Piche, Chief of the Forest Service, Quebec, and is showing up well. The trees were transplanted from the nursery beds in 1913.

Canada's Foresters at the Battle Front

Newsy Letters Telling of War Experiences in Forest and Trench.

Lieut. Alan E. Parlow, Forest Assistant, Dominion Forest Reserves British Columbia, in writing to a friend in Canada, says:—

"The Forestry Companies seem to have greatly impressed the French with their speed and efficiency though their methods are careless when compared with French practice. The experience of our lumber men in managed forests here should make a difference to their attitude when they return to Canada."

Fire Guarding in France

Co. Q.M.S. Fred Fischer, Chief Fire Ranger, The Pas, Manitoba, (writing from the Headquarters of the Forestry Corps, France:

I may say that our district is doing fine work in the pine forests. The timber is fair average but owing to the custom of scoring the trees with long parallel cuts, the bark grows around these scars in ridges, making it necessary to take off a thick slab, which waste is however not lost as every particle of the tree is utilised even to the small limbs which are made into charcoal and the roots into fire wood. The practice of scoring the trees is to obtain the gum which is collected and after a certain process is made into resin products. This industry is of great importance in the country. You may therefore imagine that our operations are not looked upon by the natives with any degree of enthusiasm, as they depend largely on this industry for a living.

"The system of fire protection here is very good, if expensive, but the timber warrants the expenditure. The forests are generally divided into squares of about 100 acres or more by fire guards of about 200 feet wide which are cleared, ploughed and kept free from vegetation; wells are sunk at regular intervals insuring a supply

of water, which is easily obtained at an average depth of 4 to 6 feet. Permanent fire guardians are also kept on the different estates.

(Fire guards are generally much narrower and the tendency is towards decreasing their width.—Ed.

On Howitzer Duty

Capt. L. N. Seaman, Forest Products Laboratories of Canada, Department of the Interior: Since writing last I have been posted to a Howitzer Battery. We came out here over a month ago and have since been situated in a very warm corner of the line pushing over large hills towards Fritz with a long thrust, and I have good reason to believe with splendid precision and effect. It is hard work, and trying, but my knowledge of engineering has been of the greatest value to me in moving our piece.

Four-foot Beech

Pte. Frank Haworth, Forest Ranger, Clearwater Forest, (writing from France: "This is a finely wooded country—some of the finest beech I ever saw. Some of them are as large as 3½ or 4 feet on the stump. Also some very fine oak. There seems to be very little softwood. Some pine, but very small."

Lieut. L. C. Tilt, Assistant to the District Inspector of Dominion Forest Reserves in Manitoba.

An Oak 6 Feet Diameter

I was down to see an extra fine stand of oak recently in the Forest of Compiègne which runs about 50 M. ft. B.M. per acre. This is used as a park now and they are only cutting the trees that blow down. There are numerous oak there 30 inches, and 90 feet high. There is one they have named the Oak of the Allies. It is over 6 feet in diameter

and 110 feet high and is certainly a fine tree.

A Tree Growing Proposition

Pte. P. Mars, Fire Ranger in Coast District, Dominion Forestry Branch, British Columbia, (writing from France:

"The Germans destroyed all the timber in the part of the country where I have been lately, although I have seen some nice hardwood groves where they were unable to reach. They certainly have the method of destruction down fine. Allowing for them being as good at building up as knocking down it will take them some time to make this country what it was before they came into it, but I think they will get the chance to start on it pretty soon. Some job for them to put two hundred year old oaks back in three years."

Lewis in Air Flight

Lieut. R. G. Lewis, Head Office, Forestry Branch, Ottawa, (writing from France:

"I had my first flight in a machine yesterday when a French officer was kind enough to take me up for a quarter-hour flight. We circled around our own camp here and dropped a message in a metal tube. This fell in a field near camp and was brought in by one of the men who first took it for a bomb and then came in breathless with the letter which I enclosed thinking it was a warning of an air raid. I enjoyed the experience very much."

The Beauty of England

Gunner Jas. R. Dickson, Head Office, Forestry Branch, Ottawa:

"The beauty of England at this time of year is amazing and these quaint old towns along the channel are particularly charming. Hythe, for instance, with its picturesque, ivy-covered stone structures peeping out everywhere from amid the dense dark-green foliage of oaks and elms, and their porticos aglow with a wealth of Rambler roses, is a picture to be long remembered."

Shavings at \$5 per Load

Lieut. W. J. Boyd, Head Office, Forestry Branch, Ottawa:

"Just the other day I bought two small wagon loads of ordinary shavings to use as standings in our stables and these English people had the cheek to charge a pound sterling per load. They could be had at any mill in Canada for carting them away."

A New Objection to Logging

Captain W. L. Scandrett, Forest Supervisor, Dominion Forest Reserves in British Columbia, (written from Narborough, England:

"I see by the bulletin that the Americans are handling the problem of war forestry in their usual thorough manner. They seem to require a great deal of timber over here (France) and both we and the Huns have already wiped out a great many of the little forests which were scattered about France. In parenthesis I might say that this has worried the airmen more than a little as we use forests for landmarks to a great extent, distinguishing them by their shape. It is a bit disconcerting when one's landmarks disappear or develop characteristics different from those shown on the map."

"The timber question is quite acute in England and sawn lumber worth its weight in gold."

"I am sure you will be glad to know that I am free of war dangers for some time to come (I hope) having been transferred to England "for a rest." I had just been under eleven months of active service with the Royal Flying Corps in France and was quite satisfied to take a turn of duty at home. They gave me ten days' leave, part of which I spent in the Cumberland Lake district, after which I was posted to the above place as an instructor. I have six machines, some of which will go, and my job is to give the final instructions to pupils before they graduate as pilots. I haven't a great deal of flying to do and have an assistant to help me so you may see I am pretty comfortable."

Indian Ranger at the Front

Private Matthew Nackaway, In-

dian Fire Ranger, Dominion Forest Service, Northern Manitoba:

"I wonder how Norway House forests are now. I never see water—it's all plains and lovely trees all around. And lots of steam engines. And we are building dug-outs. I guess I'll stay in dug-outs after I get back. And we are having a good time under the ground. I was wounded on the back with the shrapnel—just a slight one and only had to stay in the hospital for four days, but it doesn't hurt me at all.

"There's a lot of French girls here but I don't know what they are saying, but they keep on talking."

No Kickers at The Front

Major W. A. Lyndon, Forest Ranger on the Crowsnest Forest Reserve, Alberta:

"I spent five weeks in the Vimy Ridge district in front of Lens where we had some very hot work. So far I have been very lucky not yet receiving a wound but have had the unpleasantness of facing the gas. Our boys at the front are in great spirits always ready for a raid on the Bosch. They are always successful. If the young men could see the jolly spirits our boys at the front are in they would not need conscription in Canada. The kickers are the ones that stay at the base and in England and are afraid to face the music. Those are the ones that do the kicking."

Campaigning in Egypt

Captain E. W. Conant, Forest Ranger, Nicola Forest Reserve, British Columbia, (writing from Egypt:

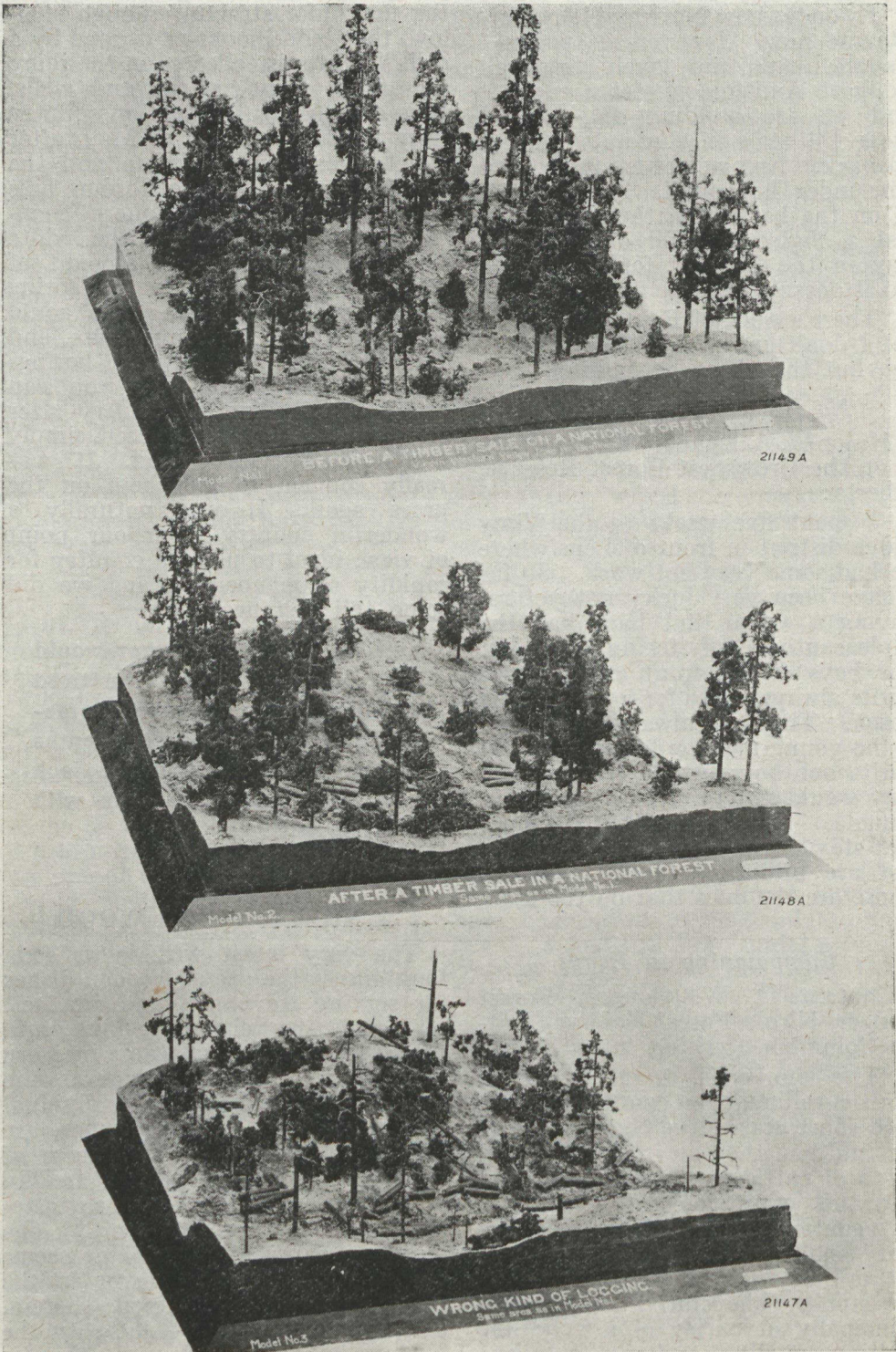
"The country is, or rather was in April, a rolling, open country covered with short grasses, vetches and clovers, and had then on it a good many herds of cattle and sheep. Patched into this grass, looking rather like a gigantic chessboard, were large and small squares of cultivation, without any sort of protection from the stock. The cultivation consists principally of barley of a very fine malting quality and an excellent bearded wheat. The agricultural in-

struments are primitive but the ploughing and seeding is well done, the first quite straight, though shallow, the second looks as if done by a drill. Water is collected in the rainy season in deep cisterns and wells. It is a perfect sub-irrigation country from February to end of May, after which everything dries up and the Bedouins retire to the Jordan hills with their flocks. It offers tremendous opportunities to the white farmer as an enormous amount of water runs to waste in the spring down the large wadis which could easily be stored for summer use, and I should think deep artesian borings would be successful. As you can imagine, this kind of country after so many months of the desert simply sends one's horses mad. It was really comical to see them on the grass again. It was naturally a wonderful country from our point of view, ideal to us as a country for rapidity of manoeuvre, and we did some tall distances.

"Well, I wish the war would hurry up and finish. I'm tired of the sun and glare and homesick for the dark green depths of a trail right up in the jack pine, and a bit of a lake with trout in it."

A NEW USE FOR WOOD

The very latest wrinkle at soda fountains is the use of wooden dishes for serving ice cream and sundaes, replacing the cheap looking and flimsy paper cups that came into use a few years ago in response to the demand for a sanitary individual service. These wooden dishes are pressed out of very thin sheets of clear maple, shaped to slip readily into silver holders. They are tasteless, odorless and hygienic. The clean appearance of the cups seems to add an appetizing flavor to the frozen delicacy contained therein, and they are making a hit with the patrons of high grade soda dispensaries.



Taking Out Logs—Two Methods

SEE ENGRAVINGS ON PAGE OPPOSITE

The right and the wrong way to cut timber is shown by realistic models which the U.S. Forest Service has had prepared for exhibition purposes throughout the country. Three models are included. The first shows a stand of one acre of virgin timber, an actual scene in one of the national forests that has been produced on a small scale with great accuracy as to proportion and coloring.

The second of the series shows the same area after a timber sale conducted in accordance with the regulations of the Forest Service. The matured trees have been felled and cut into lengths which have been arranged in systematic piles to facilitate their removal from the forest. All of the brush and small limbs, which, if left on the ground would constitute a fire hazard, have been arranged in compact piles in readiness to be burned under the watchful eyes of foresters.

The third of the series shows an example of the wrong way to cut timber. Logs of various lengths are seen scattered about, no attempt having been made to arrange them in piles. Some of the trees felled have not been cut into lengths; many have been cut down without regard to size or maturity. All of the cut timber and trunks of the standing trees are charred and the condition of the ground indicates that the forest has been burnt over, the inference being that careless methods on the part of those engaged in cutting out the timber have resulted in the spreading of a forest fire which might otherwise have been checked.

FRANCE'S WOOD CUT

The total annual cut of France amounts to 910,740,000 cubic feet, of which 225,920,000 cubic feet are timber, or a total cut of 39.39 cubic feet per acre.

FROM A LIFE INSURANCE PRESIDENT!

"I have not been able to do what I should like in connection with the objects of your Association but I can assure you of my very great interest in it and my appreciation of the work that is being done and the great need of it.

"I have thought the best thing I can do, instead of enclosing \$1., is to send you a cheque for \$10 on account of the funds of the Association."

AIDING QUEBEC SUGAR GROVES

Arrangements are being made by Mr. G. C. Piche, Chief Forester of Quebec Province for an inspection of the Quebec sugar groves by competent forest engineers with the object of directing thinnings and other improvement work. This will be hailed as a most desirable and progressive step, and ought to develop into regular co-operation between government and private owner in the management of woodlands. The sugar groves of Quebec, alone, are a very substantial asset and can be developed undoubtedly to surpass their present productiveness.

QUEBEC'S GOOD MOVE

Quebec Province is preparing to devote more attention to educational work in connection with forest protection and utilization. It is probable that motion picture films will be made of forest scenes, brules, reforestation work, wood utilization, water power development, etc.

THE COVER PICTURE

The photographic reproduction on the cover this month gives a view across the beautiful Bow Valley, with the architecture of famous Canadian Pacific hotel harmonizing happily with its surroundings.



A corner of the British Columbia Provincial Tree Nursery.

The Schoolground's Need For Trees

**Giant Buildings and Barren Surroundings the Rule.
How British Columbia is Helping the Children.**

In common with the lack of interest in shade trees on the part of most municipal councils, one encounters throughout the Dominion an equal lack of interest on the part of school boards and departments of education in the encouragement of tree planting about school grounds. This, of course, is an invitation to propagandist work which would well repay the effort. Within the knowledge of most readers of the Canadian Forestry Journal are beautiful school buildings, erected with every regard for internal completeness, yet displaying in the school grounds the barren ugliness of a sand dune. Nearly all schools are surrounded by plenty of ground, capable of growing beautiful trees at trifling cost, yet there would seem a remarkable lack of initiative in leaving such grounds for

ten and twenty years without sign of a tree.

British Columbia has been conducting tree planting work on school grounds in such a way as to commend itself to other provinces. The following article by J. W. Gibson, M.A., Director of Elementary Agricultural Education at Victoria, B.C. will be found instructive:

"In 1914 the Department of Education for British Columbia adopted a policy whereby school boards wishing to undertake a scheme of school grounds improvement would receive financial assistance as well as free advice and a supply of ornamental trees and shrubs. For several years the Provincial Government had been supplying ornamentals for the beautifying of its own public grounds in various parts of the province, and

for this purpose had established a large nursery in connection with the grounds of the Mental Diseases Hospital at Essondale, adjoining the Government farm. As in other places so it was found here that this horticultural work and the new and healthful interests associating with it had a most beneficial effect on the men engaging in it. On the other hand, it made possible the production of large quantities of valuable trees and ornamental shrubs at a very low cost.

"In the fall of 1914 it was found that the supply of nursery stock on hand was more than sufficient to meet the needs of grounds in connection with provincial public buildings, and it was decided to make donations to school boards entering into an agreement with the Department of Education. This agreement provided for the complete planning, grading, draining, surfacing and planting of the school grounds, and was included as part of the work of the Director of Elementary Agricultural Education. In two years in the neighbourhood of sixty school grounds have been planned and most of the improvements carried out, including the planting of native trees as well as many beautiful horticultural varieties supplied from the schools'

department of the Provincial Government nurseries.

"As it takes from five to ten years to raise most varieties of trees to a size fit for permanent planting, a movement was made in the spring of 1915 to provide for larger future demands by starting many of the best varieties of Canadian trees from seed, and also in 1916 by purchasing at a very low cost several thousand three and four-year seedlings which were set in the nursery and will be available for distribution from year to year whilst the younger seedlings are coming on.

"It is the intention of the Department to give more attention in future to the propagation of the best trees and shrubs which are native to British Columbia, not only in the provincial schools' nursery at Essondale, but also in others parts of the province. To this end a campaign has been started in the schools of the province with a view to interesting the teachers and pupils in the flora of their own respective districts. Teachers conducting school gardens are asked to include in each garden a forestry plot or bed for the propagation of native species from seeds and cuttings. During the past year some schools have done excellent work along this line. In this way it is



Pictures by Courtesy Agricultural Gazette

British Columbia's tree nursery raises some choice evergreens for planting about the schools.

hoped that the schools of the province will soon take on not only a much improved appearance, but also a truly national character, both as to teaching and general external setting.

"We also advocate that cities and municipalities having several schools to provide for should establish small nurseries for the supplying of suitable trees, shrubs and perennial flowers in quantity. Such a school nursery in a city or rural municipality might be directly connected with one of the larger schools. In this way the pupils of such central school would be able to do at least part of the work and would have no small advantage from an educational standpoint as a result of this. Already a move has been made along this line in connection with one of the schools in Vancouver City, and also in one of the schools in the municipality of South Vancouver.

"Most of the provinces in Canada have adopted the policy of supplying free to schools many of the text-books used by the pupils. It is our intention in British Columbia also to

supply in a similar manner that which will make school life more pleasant and less monotonous—good playgrounds, carefully planned, well equipped and liberally furnished with our best Canadian trees and flowering shrubs. Our provincial schools nursery helps to make this possible."

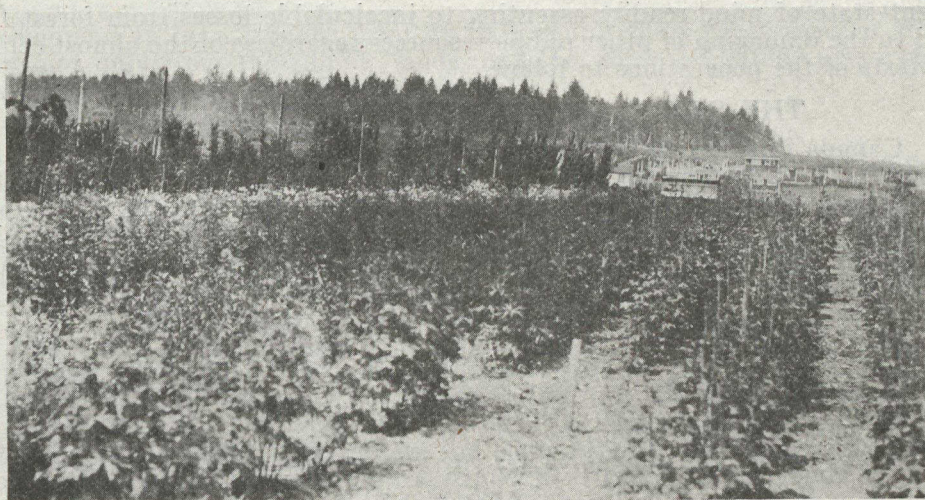
\$35,000 UP IN SMOKE

In British Columbia one of the heavy losses of the fire season was at Campbell River, where the International Timber Co. sustained a loss of \$35,000. The Kootenay district has sustained several fires, the worst being in the operations of the Kootenay Shingle Co.

One manufacturer of pulp building board in the United States sold last year an amount equal to 300,000,000 feet of lumber, and this same company expects to sell over 400,000,000 feet board measure in the year 1917. Remember, this was only one concern. Probably the total coverage by pulp substitutes will reach between 600,000,000 and 700,000,000 feet.



Hardwood Trees in the B. C. Provincial Nursery.



A view of the B. C. Provincial Nursery at Essondale.

The Case For New Brunswick's Forests

BY ROBSON BLACK

SECRETARY CANADIAN FORESTRY ASSOCIATION

**A Discussion of Present-Day Forest Conditions
With Some Suggestions For Provincial Action.**

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

AGRICULTURAL LAND

THE FORESTS

THE MINES

THE FISHERIES

THE WATER POWERS.

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

In the days when the geographical bulk of the Dominion—so much of it unexplored and unassessed as to values—gave rise to prophecies of fabulous wealth, it was not surprising that the public should be blinded to the possibilities of depletion of mines or timberlands. Prognostications of inexhaustible resources in Ungava and about Hudson's Bay, in Labrador, and other sections of which accurate information was lacking, created an over-con-

fidant state of mind readily assenting to incalculable losses from forest fires and to the damaging of other public resources regardless of the almost certain protests of the generations to follow.

THE STATE AND THE NATURAL RESOURCES

Canada fortunately has progressed beyond the doctrine of "look-out-for-yourself." At no time has the consciousness of a duty owed by the individual to the state, of the obligation of a Government to prepare for the future, been so deeply impressed as during this period of Canada's history. Public conviction and administrative policies are recognizing with startling frankness the duty of the State in managing not only armies of men, but the resources of the country on the most scientific far-sighted plan.

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

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

NEW BRUNSWICK'S GREAT FOUNDATION

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

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

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

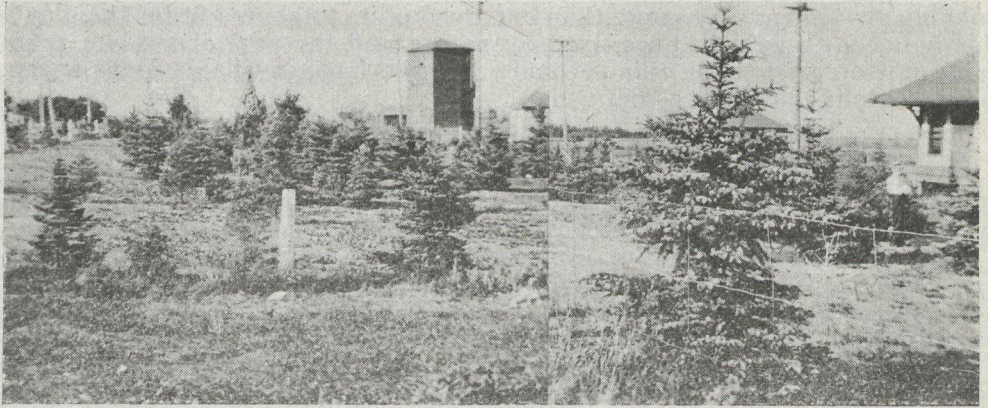
SWEDEN'S \$5,000,000 FOREST INCOME

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

Continued on Page 1349



The good effect of keeping live stock out of the farmer's woodlot. No grazing has been allowed on the section to the right of the rail fence with the result that a fine crop of hardwoods has succeeded in getting a foothold.



Beautifying the Railway Lines

In the beautifying of public grounds and streets, Canada as a whole can hardly be said to set a world standard. There are, fortunately, sufficient local exceptions to demonstrate what excellent effects can be secured when the right kind of initiative is shown. The Canadian Pacific Railway has exerted itself to secure the improvement of station grounds, the results of which are visible in almost any rail journey. The Grand Trunk has interested its officers in similar projects. Along the lines of the Canadian Northern also may be seen the pleasing substitution of beautiful trees and shrubs and flowers for what was recently an ugly level of slag or patches of coarse grass.

The accompanying picture shows the good work of Mr. A. W. Gonder, Canadian Northern Agent at Carberry, Manitoba. There are about 200 balsam fir and spruce trees on an enclosed lot of 75 x 300 feet, all in thriving condition. The grass is well kept and the whole aspect of the station greatly improved. Another evidence of the improvement caused by flower and tree planting may be seen at Rosedale, B.C. on the Canadian Northern Railway.

A HELPFUL MEMBER!

From a leading Western lumberman: "I am a member of the Rotary Club and two or three weeks ago at one of the weekly meetings I called

attention to the necessity of every member of the Club subscribing to the Forestry Association and taking on interest in its work. I intend calling attention to the Association again in a week or two—and will try to induce all to join."

It is estimated there are three million acres in the state of New York in wood lots. The cut of lumber is about 300 million feet annually. The state owns about 1,800,000 acres of forest land which is in process of being reforested. The bulk of this land was purchased at a low figure. The later purchases were made on a basis of \$5 to \$10 per acre. A bond issue of ten million dollars was submitted and carried by the people with which to furnish funds to purchase the denuded forest lands, susceptible of reforestation.

The problem of reforesting areas that are otherwise unproductive, should be considered by agriculturists. Perhaps next in importance to the disposal of brush and slash is the effect of close cutting on hillsides. In many instances, the clearing of trees from a slope has encouraged a washing of soil that not only ruins the slope but also buries the productive field at its foot and greatly increases the damage done by brooks at flood conditions.

Do Electric Wires Damage Trees?

A Point of Much Concern to Tree Owners Discussed By Authorities.

Can any deleterious effect be traced to electric wires strung through branches of shade trees? What are the possibilities of injury from this cause?

These questions have been asked of the Forestry Journal not only by those owning shade trees on town streets but by a reader identified with an electrical transmission enterprise in Ontario.

By the kindness of Prof. G. H. Collingwood, of Cornell University, who made a search for some authentic information on the subject, the Journal reproduces part of a bulletin issued by the Massachusetts Experiment Station. "It is rather interesting to note," writes Prof. Collingwood to the Journal, "that this bulletin states that alternating currents are apparently less injurious than direct currents although this may be because alternating currents are usually carried on high powered transmission lines across country and are therefore less often in contact with shade trees.

"Most of the injury to trees from trolley or electric light currents is local," reports the Massachusetts Station. "The injury takes place at or near the point of contact of the wire with the tree. This injury is done in wet weather when the tree is covered with a film of water, which provides favorable conditions for leakage, the current traversing the film of water on the tree to the ground." The writer of this bulletin never found leakage in dry weather.

Resistance of Trees

"The electrical resistance of trees is so high that it is doubtful whether injury ever occurs to them from contact with low or even high tension wires, except that produced by grounding when the bark is moist. Any escaping current from transmission lines that can be transmitted even through the least resistant tissue is likely to be insignificant.

"It might be possible for direct currents to affect trees without causing any perceptible burning. If, for example, a tree were subjected to a sufficient strength of current, there might occur a disintegration of the cell contents, causing the tissues to become abnormal and finally to die, but the electrical resistance of trees is so great that a quite high potential would be necessary.

Other Causes at Work

"On the whole, the cases of death to trees from electricity are by no means so numerous as is generally believed. Because a large number of trees near electric roads, etc., often look sickly it must not be concluded that electricity is always the cause. In cities and towns, where most of these unhealthy specimens are found, there are innumerable destructive factors for trees to contend with. It is quite essential in diagnosis work, therefore, that all these factors be taken into consideration before a definite opinion in regard to the cause of any abnormal condition is formed."

Readers will also be interested in what Dr. Fernow states in his book on "The Care of Trees:

Watch the Wire Stringer

"Every tree owner should look out for the wire stringer, who not only disfigures the tree by chopping off branches, regardless of consequences, but introduces the danger of electrocution. Trees and branches, beating against electric wires in winter storms, wear off the insulation and thus establish short circuits, which under certain weather conditions as, for example, in a thunderstorm, may bring about the total destruction of a long-cherished tree.

"According to the latest investigations there is a difference in the effects of direct currents which are used chiefly in operating electric

railroads, and of alternating currents of the electric light plant, which, although carrying a higher current, appear to be less disastrous.

Burns the Limb

"In moist or wet weather, when the tree is covered with a film of water, the current causes, at the point of contact, an injury to the tree, which provides favorable conditions for leakage through the film of water, grounding the current and burning the limb, partially or entirely killing the cambium at point of contact, and drying out the limb above. With alternating currents the damage seems usually confined to this local destruction at or near the point of contact as a result of the heat created. With direct currents, in addition to these local burnings, electric effects are sometimes noted a-

a distance, the escaping current girdling trees at the base, and killing the cambium without the characteristic burning at point of contact or at point of discharge. This appears to happen only when the positive current is not as usually carried by the feed-wire, but by the rail, and leakage through imperfect rail-connection occurs. In an observed case the damage was done when the trees were four feet from the rail, the moisture conditions of soil and bark being evidently most favorable for electric discharge."

"The only help is, of course, to string the wire outside of the tree line, or at least to prevent contact, keeping in mind that winds will sway the branches and that allowance must be made for this."

The World's Bid For Quebec's Forests

How the people of Quebec are benefitting from the world-wide advance of timber values is shown by a comparison of timber sales conducted by the Quebec Government last month and those held 14 years ago.

In 1903 the average price received by the public treasury for timber berths was \$111 a square mile. In the following year it was \$138 a square mile. In September, 1917, the bids averaged \$440 a square mile, one substantial tract going at \$1,000 a square mile. This enormous advance does not represent a speculative value because the purchasers were industrial companies intending to turn the forest growth to more or less immediate account.

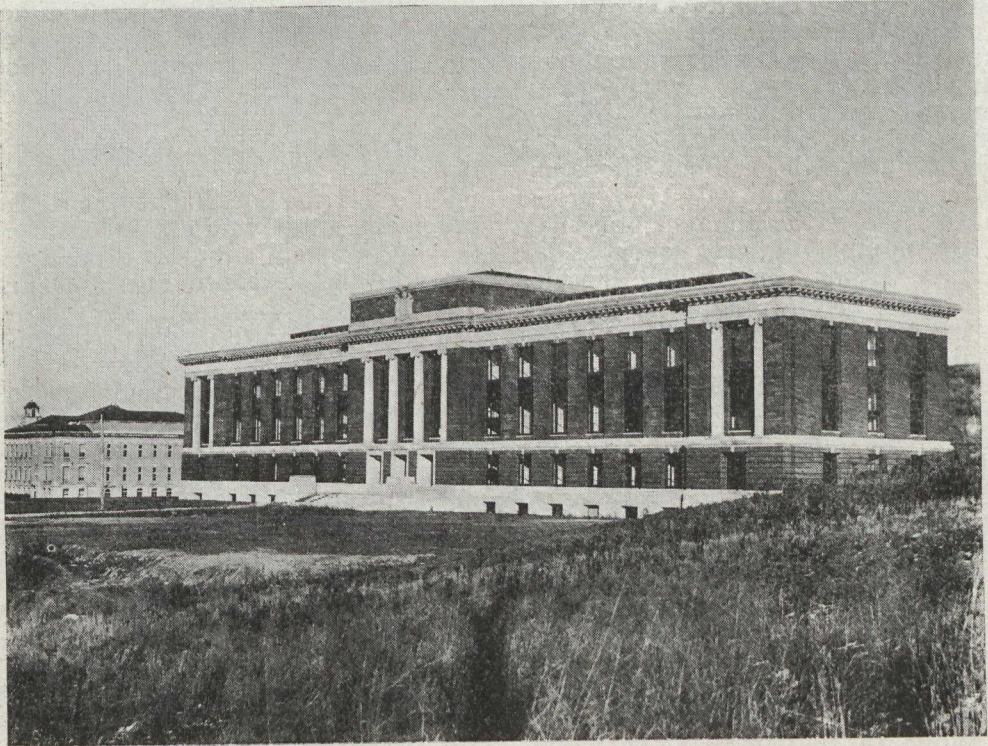
Quebec tax-payers owe to their forests their freedom from direct taxation. Last year no less a sum than \$1,683,000 was taken by the Quebec Government as forest revenue and this paid a great part of public administration, road construction, public buildings, etc. The year before Confederation, Quebec took from the lumber industry a net total

of \$294,000. In 1866 this had risen to \$630,000 and by 1905 was \$1,280,000.

Every tree in Quebec is growing more and more valuable. The industrial development and volume of employment grows greater year by year, and the public treasury is a substantial gainer. Quebec cannot afford to hand over any part of her forest endowment to the needless waste of fire. Every fire represents a blow at employment and the public good.

1500 PAPER CASUALTIES

Amsterdam.—The Bayerische Landes Zeitung, of Warsebourg, before discontinuing publication says that the war has proved fatal to the economic situation and the German newspapers generally. One thousand five hundred newspapers and periodicals have already ceased publication, and the war has made demands on the German newspaper industry which are characterized as frightful and entirely unexampled. Paper has reached a price which enabled most paper mills to increase dividends considerably.



New York State's Tribute to the Importance of Scientific Forestry. The new \$250,000 Building of the State College of Forestry at Syracuse.

How New Bird Protection Will Work Out

BY DR. C. GORDON HEWITT, DOMINION ZOOLOGIST

The International Convention for the protection of migratory birds in Canada and the United States, ratified in December last, constitutes the most important and far-reaching measure ever taken in the history of bird protection. It affords the best means of ensuring not only a cessation of the decrease in the numbers of our migratory birds such as the insectivorous birds, the wild-fowl, waders and sea birds, but, in many cases, it assures an increase in their numbers, which have been ruthlessly depleted. It affects over 1,000 species of our chief insect-eating and game birds. It guarantees to the farmer the con-

tinued existence of the insect-eating birds, the most powerful and active allies he has in the fight against the destroyers of his crops; and it guarantees to the sportsmen a never-failing supply of ducks, geese, and other game birds.

In fulfillment of its obligations under the Convention, the Canadian Government introduced the Migratory Birds Convention Bill to carry out the provisions of the Convention, and this measure has recently passed both Houses of Parliament. As soon as assent is given to the bill, regulations will be promulgated fixing close seasons.

In the case of insectivorous birds,

it will be unlawful to kill them or to take their eggs at any time of the year. The close seasons on ducks and geese will not exceed three and one-half months, and the dates of opening and closing will be fixed in accordance with local conditions and after consultation with the proper authorities in the different provinces. On a number of birds, such as the cranes, swans, curlew and most of the shore-birds, with the exception of woodcock, snipe, certain plover and yellow-legs which are becoming greatly reduced in numbers, a close season of ten years will be provided. The wood duck and eider duck will also be given special protection. Where they are injurious to agricultural or other interests, provision will be made for the killing of protected birds under special permit. Regulations will also be made to prohibit the shipment of migratory birds or their eggs during the close seasons and generally to govern the traffic in them and their eggs.

While the numbers of the migratory birds in Canada and the United States have been most seriously depleted by various causes confidence is felt that, with international co-operation, and, particularly, the prohibition of spring shooting, a gradual increase in the abundance of our wild bird life will take place.

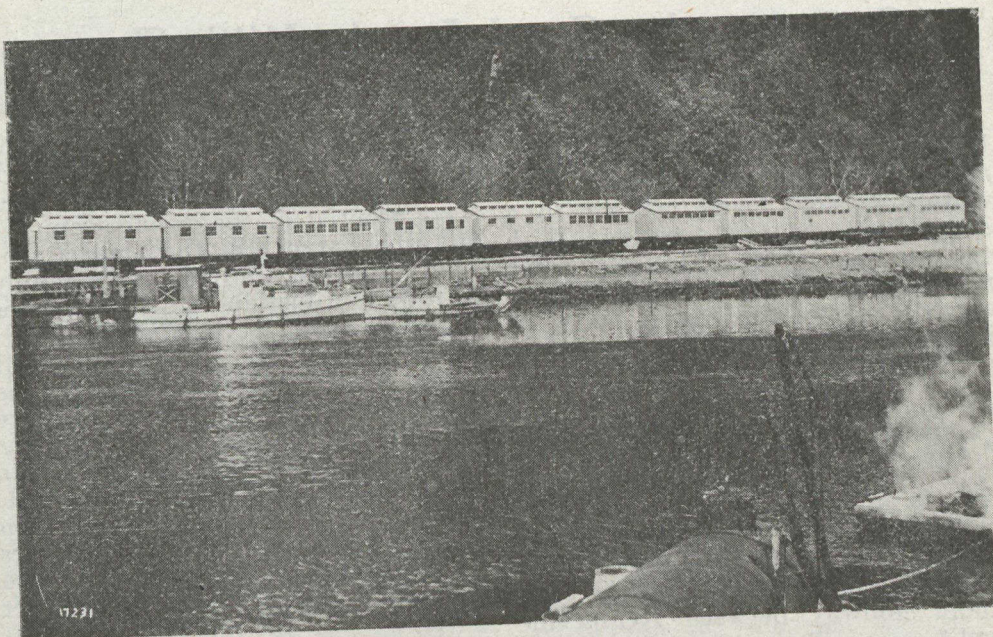
FIXING THE GUILT FOR SPREADING FIRES

The decision of the Supreme Court of Washington in the case of *Carrie Sandberg vs. Cavanaugh Timber Co.*, wherein it is held that the owner of property upon which a forest fire starts, and spreading, damages a neighbor's property, must pay has just appeared. One important feature of the decision is that the original property owner's responsibility is fixed no matter how the

fire started. In this case the fire began in the logging operations of the Cavanaugh Timber Co. upon its own land. The decision closes thus:

"Contention is made in appellant's behalf that the evidence introduced upon the trial does not support the judgment and verdict, in that it does not warrant a finding that appellant did not exercise due diligence looking to the prevention of the spreading of the fire to respondent's property. A careful reading of the evidence convinces us that this was a question for the jury. The fire was traced, by creditable evidence, directly from the place it started upon appellant's land to respondent's property. It occurred early in August during a very dry season. It is true, appellant used some effort to stop the fire a day or two following its starting, but very little effort thereafter. On the second or third day following, appellant's foreman was warned by a fire ranger that the fire was proceeding towards the east, threatening the property of others. This ranger also testified that, in his opinion, the fire could have been subdued had proper efforts been used in that behalf. Respondent herself testified that, about one and a half hours before the fire reached her place, she warned appellant's foreman by telephone message of the approach of the fire to her place and asked for help. None was furnished by appellant, according to her testimony. Whether or not her place could then have been saved is somewhat problematical. We deem it unnecessary to pursue this inquiry further. We are quite clear that the question of appellant's negligence, so far as the question of its efforts to control the fire are concerned, was for the jury to decide.

"Some contention is made in appellant's behalf that the verdict is excessive. A reading of the evidence convinces us that there is ample room for difference of opinion upon that question, and we are therefore constrained not to interfere with the jury's award of \$2,000 to respondent. "The judgment is affirmed."



A MODERN CAMP TRAIN

The North Coast Timber Co., of Tacoma, Wash., has just completed a new logging camp equipment, capable of housing 130 men.

It is regarded as the latest word in the modern housing of men on wheels. The camp train consists of men on wheels. The camp train consists of 17 standard cars.

The blacksmith is provided with all modern tools. The filing car is divided into two sections, fitted with two benches and lighted by a skylight.

The bath and drying rooms are combined in one car.

The library car is 11 x 42, equipped with six tables and shelves for books. The car is painted white and is supplied with several rocking chairs.

Provision has been made for housing the train men and cooks in one car.

A kitchen car, with a dining car at either end, makes adequate provision for feeding the crew. The sleeping cars are 11 x 42, each with accommodations for 16 men, and are provided with end doors. Steel bunks are provided, with a window for each bunk. In the arrangement of the cars a 16-foot clear space is left for a sitting room.

The camp train is lighted by means of an Edison storage system of 100 lights and is heated by steam. Every provision for the comfort of the man has been made.

SMALL POWER PLANTS A FARMER'S AID

In the study of wood using industries N.Y. state foresters have discovered one Onondaga County man who has an interesting water power saw mill with which he does custom sawing. When the power is not needed for the sawmill he runs either a grist mill, or a cider mill with it. He also has a small electric light plant which is operated by the same power. The mill has been in operation for more than twenty-five years. Full and profitable utilization of the woodlot products will be assured only when the State is dotted with these "many-purpose" mills which were so common in former days. Cooperative mills are suggested as a good financial move in New York farming communities.—N. Y. State College of Forestry Bulletin.

Covering the Sand Lands With Trees

The splendid work done by the District Agricultural Representatives of the Ontario Department of Agriculture is now being utilized to a degree in the cause of forestry. With the sanction of the Minister, some reforestation experiments have been carried out by the District men, as is explained in the following statement referring to one of the districts:

"In a number of places throughout the county there are sand hills upon which apparently nothing could be made to grow, and which give an endless amount of trouble, especially along roadsides, where every windy day fills the road full of sand. One particularly bad hill lies on the road about midway between Kemptville and Spencerville, on the Selleck property. This sand hill has drifted across the road allowance, and several strips of land have been purchased from the owner of the adjoining field, in order to get around the sand. Every effort to stop sand blowing has failed, three high board fences have been buried, and it is an every day occurrence to see autos stuck in the middle of the road.

"With the idea in view of attempting to stop the sand blowing we decided to conduct a reforestation

experiment, to see if it would be possible to grow trees on this sand. Five thousand four hundred trees were secured in the spring from the Forestry Branch of the Department of Agriculture, and set out carefully in rows four feet apart, with the trees four feet apart in the row. We further experimented by hauling cedar brush and covering over half the area with it. I am pleased to state that at present nearly all the trees over which we put brush are living and doing well. These will, no doubt, in the course of a year or two stop the sand from blowing. The trees which we did not cover did not do so well, and many of them were either covered with the blowing sand, or blown out by the roots. Next spring we purpose replacing all dead trees, and covering the entire area, if possible, with cedar brush, to give the trees as good a chance as possible.

"Very little encouragement was given by adjoining farmers at the time the trees were planted, and a good deal of scepticism prevailed as to the possibility of the trees growing. However, we know that seeing is believing, and trust to have this troublesome sand hill converted into a young pine grove in the course of a few years."

The Tree's Value to the Prairie Farmer

BY ALLAN CAMPBELL

Trees on the farm perform a similar office to that of the paint on the buildings, as they improve appearance and are a good protection against various conditions of weather. The treeless farmstead is open to every caprice of the weather and in addition to this must in time prove depressing to the spirits of those who live within its bare environments. Particularly in this western country do we need farms that are homes in the true

sense, and in this direction tree planting can accomplish much, both from a sentimental and economical standpoint. The farmer who has to face the ordeal of an annual long haul to obtain his winter's fuel supply would feel a greater peace of mind could he contemplate on a certain part of his farm, hundreds of sturdy saplings growing his future fuel supply.

For ornamentation and shelter, trees form an essential on the modern

farm and the best means of comparison is for one to stay on a treeless farm for a short period and then stay on a well treed farm. In the case of the former, one feels that home is just a figure of speech and in time becomes surfeited with the feeling of being too much outdoors and among the elements. There is a good choice of trees for the purpose of establishing a prairie home; the Green Ash, with its slender leaves, the Mountain Ash giving a splendid display of little red berries in the fall among its rose-like leaves, the Birch with white bark standing out in bold relief from the general environment of green. The Asiatic Maple is another tree of great color effect, as the leaves turn from green in the summer to crimson in the fall. These, with a background of evergreens, form a picture of extreme beauty in the fall. Flowering shrubs such as Lilac and Honeysuckle are an annual source of pleasure to their owners and others who are favored by their sphere of influence. Mention must be made of the Caragana, a favorite

hardy hedge maker. It forms a tight hedge, is a good grower and bears a pretty yellow bloom. In evergreens, the Spruce and Scotch Fir form an all year green shelter and a most efficient windbreak.

A plantation of Cottonwoods becomes a fuel yard in the making and the rapid growth of these trees makes them a worth-while proposition to the average farmer.

Trees may be acquired by various means, viz., from the woods, purchased from nurseries, and grown from seed. It is better to thoroughly thresh out the question of planting before actually putting it into practice. A pencil drawing of the proposed layout is a good initial step and is easily altered to accommodate the desires of second thoughts that may crop in, whereas, should the planting be accomplished before thorough consideration has had full scope, any alteration involving the labor of transplanting may prove fatal both to the trees and the ambition of the planter.

Notes on the Western Fires

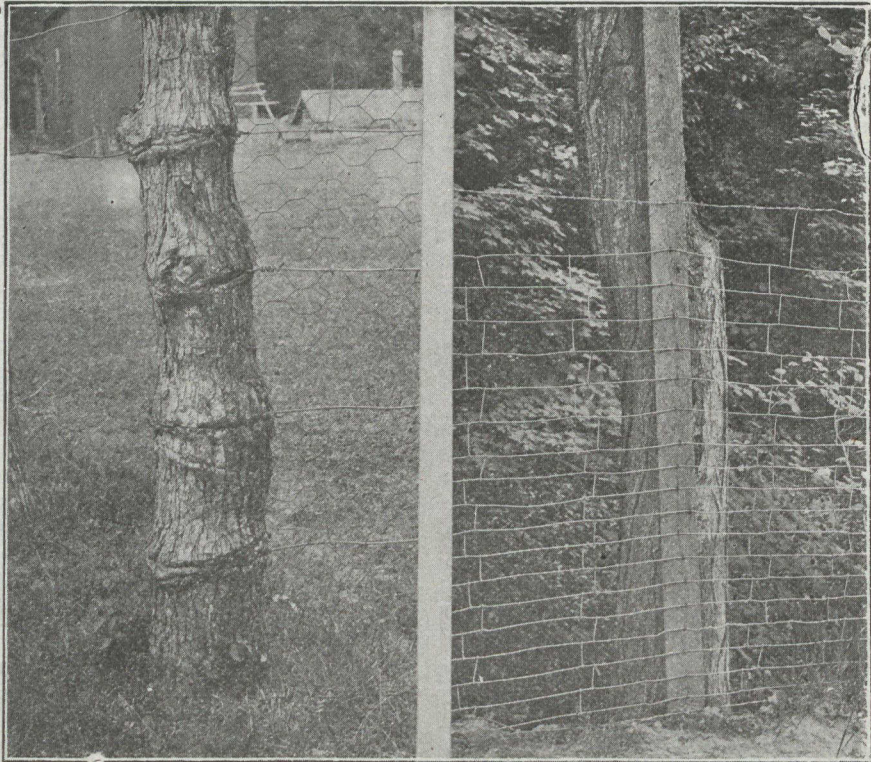
Forest fires in the Coast district have been numerous owing to the long spell of extremely dry weather, but so far the International Timber Co., Ltd., has been the only heavy loser on the Coast, says the Western Lumberman of Vancouver. A serious fire broke out August 3 in the company's limits at Campbell River, Vancouver Island, destroying about 7,000,000 feet of timber cut at Camp Three, and seriously damaging a lot of valuable logging equipment, including an overhead system and five donkeys. The loss will run into big figures, but M. D. Rector, general manager, is not yet in a position to name the amount.

In Vancouver district the Taylor & Naysmith Lumber Company, operating a sawmill and logging camp north of Burnaby Lake, met with

misfortune on Sunday, August 5, when a fire which started in old slashings and down timber in the vicinity of their logging operations on Snake Hill, a couple of miles from the mill, got beyond the control of the men, destroyed several bunkhouses and other camp buildings, and damaged some of the equipment. The men managed to remove the two donkey engines before much injury had been done them.

LIVES AND PROPERTY

In the Kootenay district, the most disastrous fire was near Fernie, where the Elk Lumber Co. lost a camp outfit complete, and ten of the men lost their lives. The camp was located in a blind valley, and when the fire swept up the men had to flee over the hills. Previous to that the lum-



Improper and Proper Methods of Attaching Wire Fence to Trees.

ber mill and camp of A. G. Lambert & Co., a Nelson concern, and the plant of the Christensen Lumber Co., both near Nelson, were burned, with a loss of about \$25,000, and at Salmo the Kootenay Shingle Co. lost its whole plant and office buildings. While a large number of fires have been reported to the department from various parts of the province, the damage outside that just mentioned has not been great. The timber damage has not yet been computed.

Loss to Young Growth

"The severe fires in southern British Columbia late in July destroyed large quantities of young forest growth which had established itself on lands previously burned over, in addition to considerable areas of merchantable timber," writes Mr. Clyde Leavitt in "Conservation." A portion of the young forest so

destroyed was upon the area included in the great Fernie fire of 1908. Investigations made by the Commission of Conservation show that the damage done by repeated forest fires on a specific area is much greater than is generally realized. Such fires not only destroy the young growth, but the seed trees as well, thus preventing or greatly retarding the establishment of a stand of commercial species. On this account, in many sections, reproduction of valuable species is wholly inadequate, or is entirely lacking; each successive fire diminishes the earning capacity of the area, from the point of view of timber production.

During the past 50 years, forest fires in British Columbia have destroyed an amount of timber approximately twice as great as that now standing in the province, or approximately equivalent to the total stand of saw timber in the entire Dominion.

The Case For New Brunswick's Forests

CONTINUED FROM PAGE 1339

the value of wood and its manufactures. *The share taken by the public treasury is no less than \$5,000,000 a year.*

WHAT THE TREE DOES FOR THE PROVINCE

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

ONLY UNTILLABLE SOIL IS NEEDED

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

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

THE NEW WORLD VALUES OF MARITIME FORESTS

Thus, within the past ten years or less a new and increased valuation has been placed by the markets of the world on the forest assets of New Brunswick. The relatively slight value of a birch stand to-day is no more a gauge necessarily of what it will be to-morrow than was true of the early price of spruce and hemlock. So with every other tree species now within the provincial boundaries. The world's wood consumption is increasing enormously. The discovery of new methods of utilizing what are now nearly useless woods,

is making remarkable advances, and certainly has many surprises in store. Coupled with these facts must be considered the exhaustion of cheap, accessible forests and the rapid deterioration of what were recently virgin areas of timber. The supply grows less. The demand grows greater. It is for New Brunswick, therefore, to take full toll of every square mile of her forest possessions, to realise from the markets of the world such tremendous profits as have accrued to Sweden and other European countries as well as to some of our Canadian provinces that are awake to the advantages of a great timber endowment.

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

LOOKING INTO THE PROVINCIAL STOREHOUSE

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

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

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

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

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

If the provincial storehouse of wood materials is to be handled on the basis of permanent production, every form of needless waste must be eliminated. The cutting of stumps almost breast high cannot be condoned in these days of timber scarcity and rising values. The jobber who skims off his tract, leaving lodged trees to rot, who abandons patches of trees that are slightly inconvenient to reach, who uses good spruce logs for his roads and

skidways when inferior logs are ready to hand, who refuses to utilize as much of the top as he might properly do, is not concerned in anything more than a hand-to-mouth policy. What the *permanent* interest of New Brunswick may be, can appeal to him only by reasonable regulations rigidly enforced by Provincial officers. The Province has an interest in its forests extending generations ahead and having regard not to one class alone, but the whole people.

A SENSIBLE CODE OF FOREST MANAGEMENT

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

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

“To secure quick reproduction after the removal of timber.

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

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

“To produce trees of good form and quality.

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

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

WHAT MAKES A LIMIT VALUABLE?

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

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

The limit was worked for the choicest pine.

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

Next, the operator took out the largest spruce of saw timber size. At each return he cut what previously would have been passed over. With the biggest stuff already marketed he proceeded to shave the diameter limit closer. Finally the market for pulpwood made it worth while to take out spruce and balsam down to the smallest legal diameter. Obviously the timber limit was producing for the market more than its natural increment. It was giving not alone the increment, but much of the capital stock as well; in the case of pine, the larger part of the capital has gone. As time passed,

logs in the driving streams appeared smaller and smaller. The capacity of that area for periodical production had seriously declined.

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

GETTING RID OF THE FIRE PLAGUE

Under the proposed New Brunswick Forest Service should come the control of the fire ranging force.

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

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

CLOSING OUT A COSTLY RECORD

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

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

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

The fire wardens, responsible for timber guarding, receive remuneration varying in amount and form of payment from \$2.00 a day to \$250.00 a year, a few at \$300.00, with some county wardens receiving up to \$900.00 a year. The average amount received last year per man was about \$52.00. For such pay no body of men can be expected to render more than intermittent service or to undertake arduous patrol, or to go far afield in search of fires. British Columbia this year, is paying its forest rangers \$100.00 a month for a six months' period, for which the Government demands and secures an equivalent in energetic application to duty. Ontario pays its forest rangers (under its recently re-organized system) \$75.00 a month minimum, Quebec pay averaging \$60.00 a month. Cheaply-paid forest guards usually represent unenthusiastic service. They are available for action usually only when fires have secured headway. Neither is it their hourly duty to look after fire *prevention* and public education, such as applies to a truly efficient ranger working under an up-to-date system. Adequate wages and alert inspection always recoup the public treasury well during a season of average fire danger. One might hazard a guess, without being accused of exaggeration, that for every dollar withheld from the forest protection service, short of a really adequate amount, the people of New Brunswick are losing many hundred per cent per annum in forest fire damage.

HOW A BETTER SYSTEM CAN BE PAID FOR

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

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

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

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

NEW BRUNSWICK'S PROBLEMS SOLVED ELSEWHERE

The appointment of a Chief Forester, with power and sufficient money to reorganize the protective service, would in itself relieve the government and the people of the need for protracted debate and investigation. Methods of fire protection have become in a general way standardized the world over. Other parts of Canada have built up forest guarding systems that completely outstrip in actual results the methods that preceded them. New Brunswick offers few special difficulties that have not been already surmounted in Quebec and British Columbia and in many of the states of the American Union.

Under skilled direction, a reorganized forest department would bring into effect the system of issuing "permits" for all settlers' land-clearing fires. It would introduce modern aids such as telephone lines, lookout towers, the cutting of trails and roads and other facilities for quick communication. An ounce of prevention is worth at hundred pounds of cure in forest fire work, and *speed* is the essence of prevention. Speed in the detection of fires, in their incipient stage, speed in calling help, speed in reaching the scene of danger. At one time in 1916 sixty fires burned simultaneously on the areas of one of the well-organized Quebec forest protective associations. But every fire of the sixty had been promptly seen by rangers on patrol or from lookout towers, and, by using the telephones, men were rushed to all centres of trouble. Every fire was extinguished. Not one was allowed to grow big and get beyond human control. Prompt detection usually means prompt extinction. But detection requires the afore-mentioned mechanical aids, without which the best human labor is heavily handicapped.

THE ADVANTAGES OF CENTRALIZED AUTHORITY

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

Schoolground Planting Left to Chance

In Nova Scotia

By L. A. DEWOLFE, DIRECTOR RURAL SCIENCE SCHOOLS

The question of a nursery to supply shrubs and other plants for school grounds is worth pushing.

Thus far in Nova Scotia we have none. The Agricultural College grows a considerable quantity of shrubbery for its own use; but it has not given any to schools. There is not sufficient ground under control of the Education Department to grow material for distribution. Our Normal College has less than two acres of ground, with no chance to enlarge its area.

From the other provinces we hope to learn some method of supplying our schools with desirable material without having to buy it from private nurserymen.

In Manitoba

By B. J. HALES, B.A., LL.B., PRINCIPAL OF NORMAL SCHOOL, BRANDON

For some years past there has been some distribution of nursery stock by the province, but it was largely material received from the forestry nurseries at Indian Head or from other sources. For the last year or two we have supplied a part of it. In connection with our forestry instruction in the Normal School, we have found it necessary to grow a considerable number of trees and shrubs, while in our horticulture we have found it necessary to grow quantities of herbaceous perennials. This year it was decided that all the distribution should be from the Normal School, and that it should be confined to material of our own growth. As part of the old arrangement I received a shipment of seedlings from Indian Head, but they were not distributed this year. We planted them in our own nurseries and will have them for future distribution.

In Ontario

By J. B. DANDENO, PH.D., INSPECTOR OF ELEMENTARY AGRICULTURAL CLASSES

There is no special provision made in Ontario to supply nursery stock of forest trees or shrubs for the ornamentation of school grounds. Where school boards are desirous of obtaining such material, they are expected to secure it either from nearby woods or swamps, or from regular nurseries. Where the schools are maintaining classes in agriculture, a portion of the grants apportioned to the board for equipment may be used to purchase trees, shrubs, or perennials. In schools where agriculture is not taught (the subject is optional) according to the prescribed regulations of the Department of Education, no financial assistance is received for this purpose.

THE FARMER AND HIS PULP WOOD.

In many parts of Canada there is a close connection between the pulpwood market and the prosperity of the farmer. Proper handling of his forest might make it a continual source of income. The wanton burning of any timber to destroy it should be made a crime. It is less likely to be burned if the farmer understands how to make money from it. Intelligence is better protection than punishment.

Attention to forestry matters is important, both to the welfare of the farmer and the future of the Canadian forest resources and industries dependent on them.

Co-operation between forestry and agricultural departments in this regard would be an advantage.

"From Pulp and Paper Magazine"

THE RIGHT LOG LENGTH TO PREVENT WASTE

By R. O. SWEEZEY,

The point to observe about 16 ft. logs is that spruce will cut one to four logs per tree. In black spruce we usually get two or three logs in the mature trees, and where two logs are cut, probably over 50 per cent. of such trees would yield an additional 8 to 12 ft. down to 4 in. top; but, as the operating company wants only 16 ft. logs, the lumberjack has no choice but to leave the top to rot in the woods. The difficulty lies in the fact that the logs are too long. Multiples of 12 ft., say, would give three logs, equal to 36 ft., where only two 16 ft. logs can be cut. It is obvious that both in theory and practice the shorter the log the more complete will be the utilization of the tree.

Now, in the Province of Quebec (which boasts the best log-makers in the world), where streams are so plentiful that long hauling is rare, logging is done mostly by the single-horse method. One immediate result is that roads cost much less, and with small horses the jobber gets into corners where pulp logging by the Ontario system would be very costly. By reason of this single-horse system and narrow roads (aptly described by an Ontario operator as "cow-paths,") the jobber, equipped with his home-made sleighs of peculiar design, can and does make more logs and greater quantity in a given time than the Ontario log-maker. But he prefers the shorter logs; 9 to 12 ft. suit him best, because one man alone can handle these better than he can the 16 ft. logs, for which, if he must make them, he demands 50 cents a cord more. Thus the extra cutting necessary in logging the shorter lengths is more than offset in the handling. The question, then, is why should not all Ontario pulpwood operators adopt the shorter lengths and save the waste now occurring in tree-tops?

NEW STUMPAGE LAW IN N.B.

An act to facilitate the collection of stumpage, which is of special interest to the lumber, pulp wood for paper industries, has been agreed on in the New Brunswick Parliament. The new measure provides:

All licensees of crown land in the Province shall annually, not later than the first day of October in each year, furnish the Minister of Lands and Mines with a sworn statement of all operations upon timber berths held by such licensees, stating the quantity, number, and superficial contents and kinds of logs, lumber, or other timber cut or made, upon each of such timber berths during the 12 months previous to the first day of May in each year, and also the quantity cut or made upon granted lands during the same 12 months.

All licensees exporting pulp wood, rossed or otherwise, shall furnish a sworn statement to the Minister of Lands and Mines at the close of the shipping season showing the number of cords shipped.

Should any licensee fail to comply with the provisions of this act, or should the statement furnished be found to be willfully inaccurate, the licensee furnishing the same shall forfeit all right to his license, and the berths and limits shall become vacant.

The Canadian farmer, in so many districts, receives part of his income from his wood lot or must clear his land before planting, that departments of agriculture should pay considerable attention to the forestry side of the farmer's education. The opportunity seems to lie in three channels, the agricultural bulletin and country paper, the district representative and his local organizations or clubs, and the agricultural college.

A comparatively small amount of instruction and demonstration should be of very considerable value to the young farmer.

CANADIAN WOOD IN FRANCE.

(From Report of Dominions Royal Commission)

"Very little Canadian wood is sold on the French market because it is almost unknown, and, what is worse, in the few places where it is known it has the reputation of being of very inferior quality. This seems hard to believe, but it is only the strict truth. It can be explained by the fact that the Canadian lumber exported has been sent almost exclusively to Great Britain and when, from time to time, it was sent from that country to France, it lost its name and passed as the product of other countries. This was the case with our fine woods that brought high prices. It must be admitted, however, that certain shipments of Canadian wood of a most inferior quality were unloaded on the French market at low prices because they could not be disposed of elsewhere. Such proceedings have caused incalculable harm to the reputation of our products. Unfortunately, our exports of high quality lumber have not been able to counteract this undesirable reputation, since they have always been credited to other countries. At Contras, near Bordeaux, the following sign is displayed on a large lumber factory: "Bois de l'Amérique du Nord" (North American

Wood). It is evident that in France, Canada does not exist as a separate country, only "American" products are known."

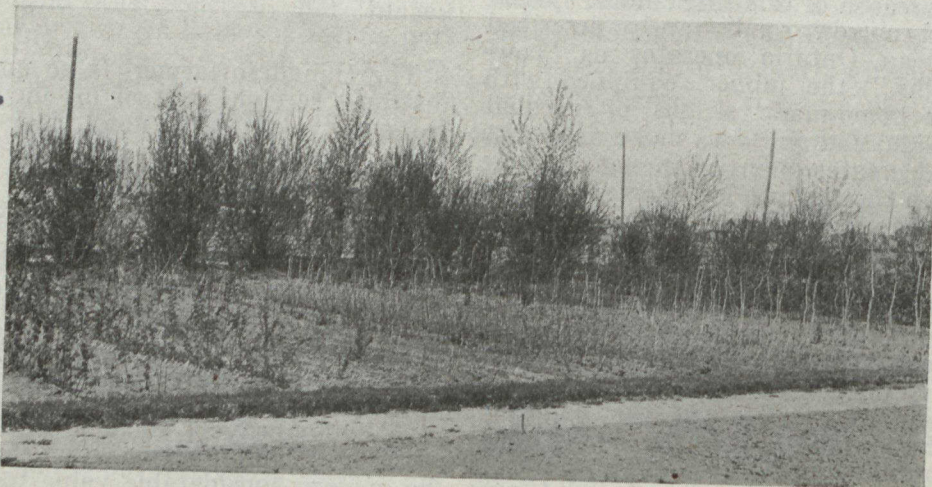
OUT FISHIN'

A feller isn't thinkin' mean,
Out fishin';
His thoughts are mostly good and clean

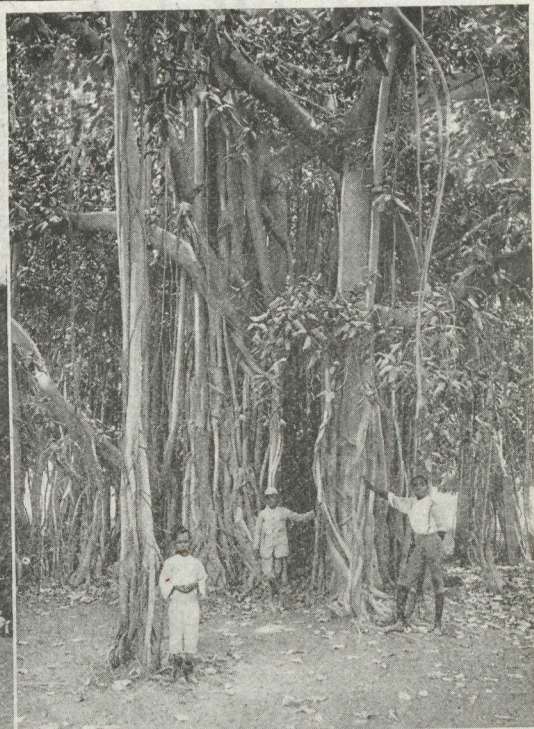
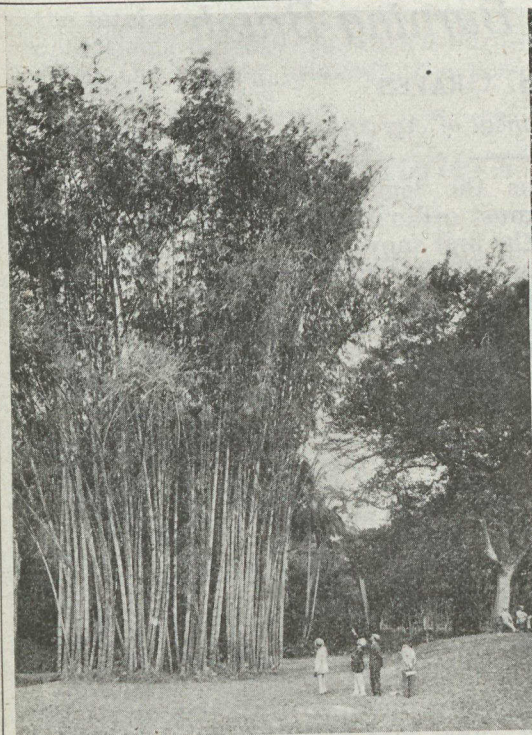
Out fishin';
He doesn't knock his fellow men,
Or harbor any grudges then,
A feller's at his finest, when
Out fishin'.

The rich are comrades to the poor
Out fishin';
All brothers of a common lure,
Out fishin';
The urchin with the pin and string
Can chin with millionaire and king,
Vain pride is a forgotten thing
Out fishin'.

A feller gets a chance to dream,
Out fishin';
He learns the beauties of a stream
Out fishin';
And he can wash his soul in air,
That isn't foul with selfish care,
An' relish plain and simple fare
Out fishin'.

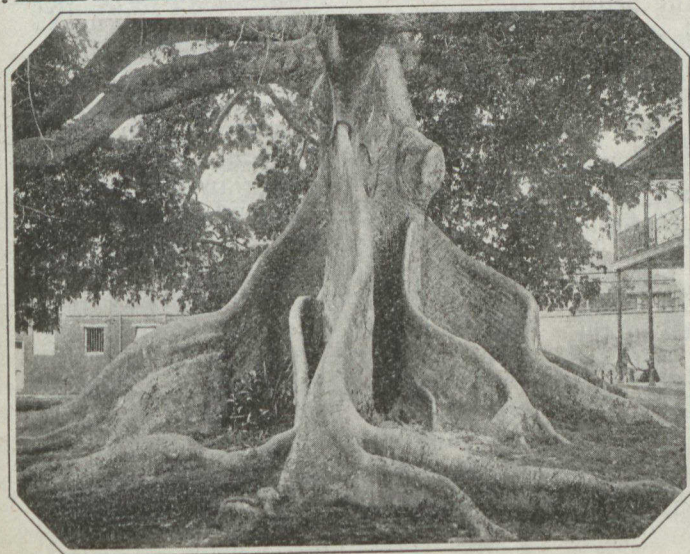


A view of British Columbia Tree Nursery for the Improvement of School Grounds.



Bamboo belongs to the grass family, although its tall stalks resemble saplings. As material for rafts, fishing poles and even for houses it has been in use since the world was young. Orientals consider the young shoots, which resemble asparagus, a nutritious food.

The banyan tree, on account of its habit of putting forth numberless trunks to support its branches, is regarded as a robber. But it yields rubber equal to Para.



Although the spongy wood of the silk-cotton tree, found principally in Jamaica, West Indies, is too light to be of commercial value, the natives make canoes out of it and fill cushions and pillows with its long silky threads. Its root-formations make the tree earthquake proof.

Best Methods of Burning Brush

BY HENRY S. GRAVES

Forester, U. S. Department of Agriculture.

An excellent time for burning brush is after the first snow of winter. This is usually a light fall, and the snow does not penetrate the compact piles of brush sufficiently to prevent burning. There is no danger of the fire running on the ground, and the branches of the standing trees are so damp as to prevent injury by the rising flames. If the brush is burned before winter, it should be only during damp weather, when the ground is so wet that fire will not run easily.

When large areas of piled brush are to be burned the work should be organized with care. It should never be undertaken when there is a strong wind, and the best time is in calm weather. If there is any wind, the burning should begin with the piles on the lee side. Several piles may be fired at one time, but they should be some distance apart, with one or more unburnt piles between them. When the first fires have been burned down to coals, the intermediate piles may be ignited. This alternating method of burning the piles prevents the injury to trees and young growth between the piles that might result from the collective volume of heat of adjacent fires. Just as the brush on level ground is burned against the wind, so, on a hillside, the piles near the top are burned first, and the work progresses down the slope.

Controlling the Fires

Whenever large areas of piled brush are to be burned, a sufficient force of men, equipped with fire fighting implements, should always be present to insure that the fire will not get beyond control. In some instances, when brush is piled in the winter during logging and left for later burning, the piles become very wet from the snow and rain and do not dry out till late spring or summer, a time when burning on a large scale is dangerous. If the brush of winter lumbering can not be burned

as the logging proceeds, the piles must ordinarily remain unburned till the first snow of the following winter, or till especially wet weather comes in late summer or fall.

The devices used in different localities for starting fires in piled brush are many. Some loggers use a torch of burning wood, as resinous pine; others carry live coals from one pile to another; others use a long-handled torch; others, again, pour a little oil on the brush and start it with a match. The most satisfactory seems to be an ordinary tubular torch with wicking and a ferrule into which a rake handle can be inserted. A good substitute, though a crude one, for the last is a piece of bagging or burlap wound around an iron rod or stick of wood and occasionally saturated with oil.

Cost of Burning

The cost of burning piled brush in the coniferous forests may vary from one to thirty cents per thousand, according to the manner in which the brush is piled, the condition of the brush, the size of the crew needed to prevent the running of fire, etc. Commonly, it ranges from five to fifteen cents per thousand feet. Where the cost has been higher than this, it has been attributed either to poor work in piling or to inefficient management in the work of burning. The average cost of both piling and burning should range in coniferous forests between ten and fifty cents, and as the lumbermen become more experienced in performing the work the cost will be correspondingly reduced.

In some coniferous forests careful records were kept of the area actually burned over. Where the stand per acre ran from 10,000 to 50,000 feet per acre, the aggregate area burned over by the brush fires was found to be approximately seven per cent. of

the total area cut over in the logging operations. Where the brush is burned as the logging proceeds, the per-

centage of the area burned over is less.—*Reprinted from American Forestry.*

German Prisoners in a Lumber Camp

Canadian Front in France.—“Eyes lefdt” “Eyes frondt” Uttered in guttural German, these commands sound strangely on a Canadian ear. Stranger still is the mis-en-scene whence they arise. For the non-com. who shouts the order is a hulking Hun in field grey, wearing the Iron Cross, and by his side marches a column of German soldiers. But no Mausers are in their hands, no bayonets at their sides, and the head-gear is not that of one regiment.

Blue, red, yellow, white, border the caps of these men, and quite as diverse are the designs of their shoulder straps. Tall and short, fat and thin, many be-spectacled, mingle in this conglomeration of Prussians, Bavarians, Saxons, Wurtembergers—no longer soldiers, but woodmen marching to dinner. They salute a group of Canadian officers as they pass, and the bully German non-com. in charge is quite evidently glad of a chance to air his authority a bit in public and do a bit of the swanking he was wont to do in the barrack square of Deutschland.

Felling a Jack Pine

It is in a pine forest of France that your correspondent saw these Boches working for the Canadians engaged in forestry work. Working, did I say? Well, imagine thirty-two husky Huns pretending to haul on a rope, leisurely pulling down a tiny jack pine, scarcely more than a sapling, and you can visualize their efforts. How an Ontario farmer would laugh at such “work.” However, the Germans do accomplish a little. They quite evidently like this “job,” and it confers an appetite and an appreciation of the comfortable huts in which they are housed.

By the roadside stands their own German “koch,” and facing him a

row of burnished kettles. Brimming with some savory stew, the steam ascends in fragrant clouds. To him in batches of twenty at a time come the prisoners, to fill their dixies and receive each one a generous chunk of bread. Squatting under the trees in this fine weather, they partake of their mid-day meal. Would that Canadians in Boche-land fared half so well. After feeding, several of the Huns produce long-stemmed pipes with china bowls, which they puff contentedly, their enjoyment unimpaired by any thought of the sentries who stand back among the trees in case some forgetful Hun might wander through the sylvan dells.

A Fairy-tale Wood

And what a pine forest is this! Its like does not exist throughout the length and breadth of Canada. A regular fairy-tale wood, this vast plantation of clean trunks, rising almost limbless to an average of fifty feet, green-topped, springing from an underbrushless carpet of moss and needles. They grow in yellow sand, these trees. The larger ones measure from 10 to 14 inches through at the base, and give some 40 feet of log.

Hark, Canadian lumbermen. In this country a stern government allows no timber-limit vandalism on the part of loggers. No brush nor slashing may be scattered about as in Canada, to start fires. Everything here is piled, swept clean. In the adjoining French section of this wood I actually saw windrows made of branches carefully tied together. Thus they are shipped off to Paris for fire-wood.

How French Fall a Tree

In marked contrast to the Huns are the Canadian bushmen, who, over-alled, stand in military formation ere

they dismiss to lunch. A little group, they have charge of the more technical jobs. Soon a mill will hum in this vicinity, as others are doing elsewhere, turning out its full quota each day. These Canadian mills are not only supplying our own troops, but Imperial and French troops as well.

Canadians are hard at work in forests of beech, hornbeam, ash, oak, birch, cherry and chestnut trees, which are falling before them, and, oddest sight of all, are being pulled down by block and tackle. Such is the French fashion. Limbs chopped off, and a rope attached to its top, many a tree is torn out by the roots, which are afterwards sawn off. Queer lumbering perhaps, but it saves the older trees.

Picture a quaint village, mediaeval church, fifteenth century houses, an inn, from whose timbered doorway d'Artagnan might well sally forth at any moment. Picture an emparked chateau which escaped the revolution, whose pillared gateway was old when Marie Antoinette came joyfully to France. 'Mid such surroundings, among trees where the deer fed undisturbed, now rises a cloud of smoke, beneath which, entrenched among the new, white timbers of a brand new mill, a whirling fiend devours the woods.

H. R. MacMILLAN RESIGNED

H. R. MacMillan, formerly Chief Forester of British Columbia and Timber Trade Commissioner for Canada, has resigned his position as assistant manager of the Victoria Lumber and Manufacturing Company at Chemainus, B.C.

At the request of the Imperial Munitions Board Mr. MacMillan has undertaken to locate the stands of British Columbia spruce adapted to aeroplane manufacture, and on this most important task he will be engaged for the remainder of the war.

WHAT DO YOU KNOW ABOUT OUR WILD ANIMALS?



The Canadian Forestry Journal is able to offer its readers an opportunity to secure a most interesting "Animal Book". The illustration as above, represents the paper-bound edition which sells on the bookstands at one dollar. The Journal has arranged for a limited edition of **leather-bound** copies to sell at the same price, one dollar.

The book contains 265 pages and 61 full-page illustrations in color of the North American wild animals in their native haunts.

The text is by Chas. K. Reed, who has won much fame through various nature books, and the plates are in natural colors by H. P. Harvey.

The book is shaped conveniently for your pocket. While authoritative in matter, it is brightly written and will pay high dividends in helpful and interesting reading.

Enclose a dollar bill to the Canadian Forestry Journal, 119 Booth Building, Ottawa, marking your name very plainly on the attached coupon:

.....
Canadian Forestry Journal, Ottawa.

Please send copy of 'The Animal Guide' in leather binding to the following address. One dollar is enclosed.

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Early Days in the Lumber Camps

By Capt. Robert Dollar

Ed. Note:—Captain Robert Dollar began life as a camp boy on the Upper Ottawa in the employ of Mr. Hiram Robinson of Ottawa, a Director of the Canadian Forestry Association. He rose to a commanding position as a lumber exporter and ship owner.

In passing through Western Ontario in a comfortable Pullman with dining car attached and in crossing to Spanish and Serpent Rivers, it brought back very vividly to my recollection the tremendous changes that have taken place in this part of the country in the last 35 years when there was hardly a white man on the shore of Lake Huron at Kil-larney and Spanish River Mills.

At this time I was lumbering on the Serpent River some 30 miles from Lake Huron. We sent in the men and supplies in a steamer in the fall of 1881 and built a warehouse at the mouth of the river to hold our year's supplies. We boated supplies up the river to where the camp was to be built, sufficient to last until the snow and ice made it possible to haul with teams. The men were then cut off from all communication with the outer world. On February 21, 1882, I started with a team of horses to visit the camp. The entire distance of 250 miles was made on the trackless ice from Parry Sound, Ont. The time occupied was eight days. We

slept out every night. The weather was intensely cold, being below zero the first three days, while on the last day it rained. Not being prepared for such a change in the weather, we had a miserable time of it. Sleeping out in winter in a heavy rain storm is anything but comfortable to say the least.

A 35-Mile Tramp.

The weather was so bad, I left the team and teamster at our warehouse at the mouth of the river and made the last thirty-five miles on foot in the soft, slushy snow. It was hard walking and I was glad to get to the camp, and the men were delighted to get news from the outside world. I found the work had gone on successfully, and we had a lot of fine timber on the ice ready to be floated to Lake Huron, where it was to be loaded on vessels and taken to Kingston at the foot of Lake Ontario. There it was rafted and run down the rapids of the St. Lawrence, then towed to Quebec to be again loaded into ocean going ships for Liverpool where it was again formed into small rafts and taken up the canal to Manchester. Here it was sawn up into sizes for making cotton spinning machinery.

I spent three weeks looking over various tracts of timber, but could not find the sized timber required for this trade, namely, 20 inches average diameter. On this account I decided

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to shift my operations to Michigan, where the desired size of trees could be secured. It had got very near the breaking up of winter, and we had 12 more men than was necessary to drive the timber down the river, so I started out with a team of horses and the 12 men, intending to return as I came, on the ice along Lake Huron and the Georgian Bay to Midland. But the fates decreed otherwise. The first night we got with considerable difficulty to Little Current on Manitoulin Island on account of the ice having melted in the recent spring weather. I found it impossible to go further with the team and decided to send it back to the camp, and tried to induce the men to return, as I could see we were in for a 250 mile walk. Besides there was the uncertainty of the ice not remaining long enough to make the trip. They decided that if I could do it they could. I tried to explain to them that it was a case of "have to" with me, but they could return and work in the camp until navigation opened. I had various camps in Muskoka and Parry Sound district, so that it was necessary for me to be on hand to arrange about getting the logs driven when the water was high. All of no avail. The men were determined to get out to civilization.

Primitive Travel.

I bought a few hand sleighs and put on them what was actually required for the trip. We started out, pulling the sleds on the ice. The third day out a severe snow storm was raging, and it was impossible to travel, so we had to lay up all day much against our will. I found we barely had provisions enough to take us to Byng Inlet, so I had given up the idea of going to Midland, as the former place was much nearer.

Next morning we were up before daylight ready to start, when we discovered the ice had gone out during the storm. There we were on the bleak and barren shore of Georgian Bay and had now to "foot it" through the trackless forest. We reached French River which we had hoped to

cross on the ice, but to our dismay it was wide open, the ice having gone out with the previous storm. So we had to cut logs and pull them to the water and make a raft of them. This took an entire day and was attended with much hunger. The first raft capsized and two of our men narrowly escaped perishing in the cold water. We then cut larger logs and made a stronger raft. Our tools consisted of one axe. We secured the logs with twisted withes. We all got across alive, and to our delight we found the ice was still fast inside of the islands, and we were enabled to make much better time.

Dividing the Flour.

I found our provisions were about exhausted, so I had all the flour baked into cakes and divided equally. It was just enough for a small meal. I told the men that the nearest civilization was three days journey and that each one should divide his cake into three pieces but nearly all ate them at once. I divided mine into three days' portion. Each piece was about one inch square. The ice was getting bad and several of us went through it. I kept on the lead and got more wetting than the rest. The nights were very cold; we suffered a good deal, wet in the afternoon and freezing at night. The frost hardened the crust, so in the forenoon we had fairly good walking, but afternoon every footstep went through the snow and into the water on top of the ice. I remember I had deer skin moccasins on which kept the water out as well as a pair of socks would.

The men got tired out and it was only by encouraging and urging them on that we were able to make any headway, for many of them wanted to lay down and give it up.

The last day before arriving at Byng Inlet I told them I would go on ahead and get provisions sent back to them with Indians and for them to follow my tracks, but before noon I came across an Indian wigwam. A squaw and two children were the occupants. She could not talk English or French, so I made

signs to her that I was hungry, and tried to make her understand there were twelve more coming. I found she had about 20 pounds of flour, but no meat of any kind, so she started in to make "slap jacks." I did not eat and encouraged her to make more until about three miles off our men were in sight. I took her out and showed her the crowd, and she held up her hands in despair. I put aside enough for herself and children for one day and made her understand I would send her plenty the following day, so she went to work and baked the balance of the flour. To my surprise she went out into the snow and dug up a white fish three feet long and put it into a pot of boiling water, scales, insides and all. This was as sweet a fish as I ever tasted.

In the meantime, I saw the very slow progress of the men. I got some birch bark and made a big smoke. The effect was magical and I could see them immediately begin to step out. When they came they ate everything in sight and I had a hard time to pre-

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W. J. TAYLOR LIMITED, Publisher - Woodstock, Ont.

vent them from leaving the squaw without any food. I almost had to use force to get them to start out for Byng Inlet. Ten miles distant we found a trail which helped us out and reached the mill at ten at night where we got plenty to eat and washed our hands and faces. The first time in two weeks. We were more like negroes than white men.

A few days before it looked like a physical impossibility to come out of our trials alive. I sent an Indian back to the squaw with four times as much flour as we used. I left our men here to rest up three or four days before proceeding.

Starting the Drive.

I was up bright and early next morning, as I knew I was urgently required to start the drives. I had a camp at Shawinager and started out on snow shoes that I borrowed. The distance from Byng Inlet to Shawinager through the woods was 45 miles, with no road or trail. At dark I was able to strike an unused government road which led to our camp, which I reached after everyone was in bed. I looked over this timber and works in the forenoon, (we were getting out what was called Tona-wanda timber, which was got out the full length of the tree; in the summer I towed this across Lake Huron to Detroit), and took one of the teams to carry me to Rosseau, which I reached after midnight.

The winter roads had broken up and I could not get anyone for love or money to take me to Bracebridge, Muskoka district, my objective point, so I started out on foot again for a 35 mile tramp. I remember the mud was ankle deep in places and with dirty clothes and deer skin moccasins, I certainly was a "tough" looking tramp. Next morning I was busy hiring men for the drives for the various camps, apparently none the worse after about as hard an experience as few lumbermen, even in those rigorous days ever had.

EAST VALUES B. C. WOOD

1916 witnessed a remarkable increase in consumption of B.C. lum-

ber in eastern Canada, the quantity sold in the east in 1916 being almost double that of previous years—a most satisfactory showing in a competitive market such as this where native and imported woods are readily available.

Energetic educational work has been carried on by the B.C. Forest Branch in Eastern Canada for the past 18 months, resulting in a wider knowledge and appreciation of the excellencies of British Columbia woods and a better understanding by our mills of the requirements of the eastern market. This market should show substantial increases from year to year and be of great value to our industry. With the return of normal shipping conditions it is hoped to establish a cargo trade from British Columbia to eastern Canadian ports via the Panama Canal.

—*B. C. Official Report.*

TROOPS USED IN FOREST FIRES

The forest fire situation became very acute in August and early in September, due to the fact that there had not been any rain for nearly seventy days in the western part of Oregon and Washington. Forest fires were becoming alarmingly prevalent. In Columbia county, as an example, experienced state fire wardens soon became aware of the fact that the men whom they were receiving from the Portland employment offices were in themselves a menace and were actually setting fires. Incendiarism was becoming rife.

Upon application to Governor Withycombe of Oregon, Colonel C. E. Dentler, commander of the Northwest department of the United States Army, was appealed to and under the direction of Hugh Henry, manager of the Oregon Forest Fire Association, small bodies of cavalry and motor patrolmen were distributed throughout the forest regions of Oregon. The results were very gratifying. Not only was incendiarism brought to an abrupt close but in one or more instances the soldiers actually assisted in the putting out of the fires.

	<h1 style="margin: 0;">RENNIES</h1> <h1 style="margin: 0;">SEEDS</h1>	
<p style="margin: 0;">PUREST-CLEANEST MOST RELIABLE GET CATALOGUE AT BEST DEALERS OR DIRECT TORONTO - MONTREAL WINNIPEG - VANCOUVER.</p>		

TOY MAKERS USE PLANING MILL WASTE

That a market for virtually all of the waste of a planing mill is to be had for the seeking is evidenced in the occasional bringing to light of what is being done by some planing mill managers in various sections of the country. The latest has to do with a planing mill in the Northern States. In turning out some of its products waste blocks of various sizes were numerous and served to furnish all the fuel required for the plant. This material had a fuel value of \$3 a ton.

One day a visitor looked the plant over, noted the waste blocks and began to figure out the number of them in a ton. He offered the manager \$17 a ton for all the waste of that character turned out. A contract was made and the visitor informed the manager he was a toy manufacturer and that the blocks purchased would cost him less than half of what it cost him to make them. The mill manager immediately placed his thinking cap in order, secured samples of all the planing mill waste, called on other toy manufacturers and before returning home found a market for all the waste about the plant except the sawdust. The final result is that the sale of the waste purchases all the coal needed for the plant and leaves a profit averaging \$300 a month to the company.

A little analysis of the waste pro-

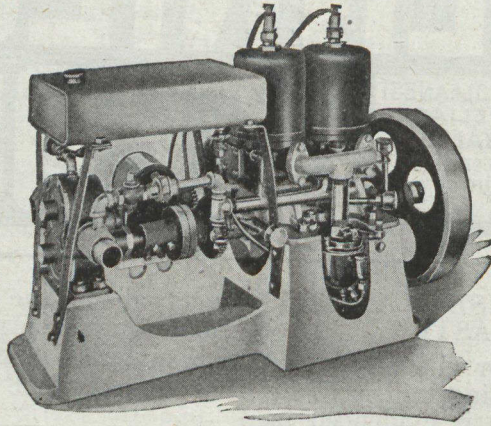
ducts about the saw and planing mills would soon prove that much of the material going to the slab pit has an excellent commercial value.

PROFIT IN TREE GROWING

"The growing of timber can be made a commercial success. In 16 years mine props and fence posts can be harvested. In 26 to 36 years timber large enough to produce paper bolts can be grown. It will thus be seen that large corporations which make paper, for instance, can be induced to reforest large areas and thus insure an adequate supply of pulp paper for their future needs. The value of the wood will justify the carrying charges."—*Dean Baker, New York State, College of Forestry.*

FORESTS SELF-SUSTAINING

The report of the United States Forest Service for the fiscal year ending June 30 last, will show that the national forests are now almost self-sustaining. Receipts during the last fiscal year aggregated about \$3,450,000, mostly from timber sales and permits for grazing, water power development and other purposes, compared with a total cost of operating the national forests of about \$4,000,000. Those in touch with the situation predict that during the current fiscal year the national forests will probably pay all expenses from the proceeds of their operation.



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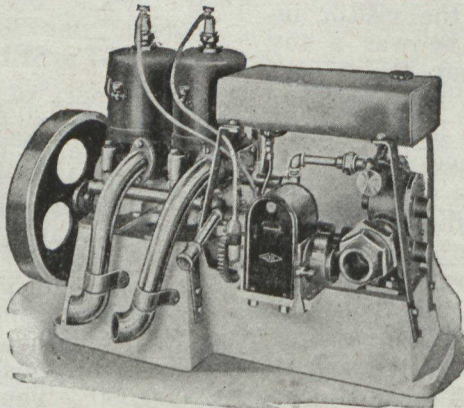
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Gifts of Trees to Northern France

(Editorial from the Philadelphia Bulletin.)

It is interesting that the nurserymen of the country, assembled here in convention, are considering the proposal of reforesting Northern France at their own expense. This is the plan of Prince Poniatowski, a name familiar to all students of Napoleonic literature, and while our nurserymen cannot do all of the replanting of fruit and shade trees which the Boches have destroyed, they seem willing to do their share and to make it easy for other philanthropists to co-operate.

It is well known that as the Germans have been driven back from their original line they have left only a desert behind them. Everything has been destroyed except the soil, and that has been so badly cut up that it will be long ere it produces

its normal yield. The annual crops are to be restored much sooner than the vineyards, orchards and shade trees. It will be remembered that Professor Ferrero tells in one of his histories that in a single year Spartacus and his revolting gladiators did more damage to Italy than Hannibal did in seventeen. This was because the latter destroyed simply the annual crops, which meant the loss of only a year's income, but by the time of Spartacus the olive and the vine had replaced grain in Italy, and it took years to replace them.

This is the case with Northern France. It needs fruit trees and vines to replace those which were destroyed, and several years will be necessary to restore former conditions. It may be that the nurserymen will

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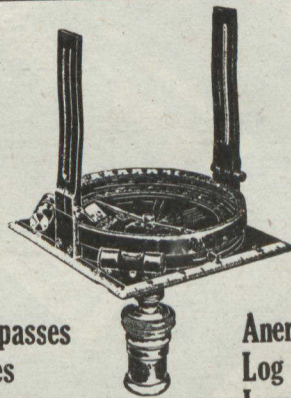
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start a propaganda among the children. It would be easy for any child to save enough to buy a peach or apple-tree cutting, to purchase a vine or even a young maple. Northern France is about as bare as the sands of the seashore, and here is an excellent chance to do some constructive work which will cost individuals little but will amount to much in the aggregate.

FRANCE'S FOREST INCOME

The gross annual income of the state owned forests of France prior to the war is said to have been \$6,000,000, or \$2.72 per acre of producing forest. The total expenditure amounted to \$2,725,000, or 70 cents per acre. Therefore prior to the great war the annual net forest income amounted to \$2.02 per acre.

Raphael Zon, chief of sylvics, U. S. Forest Service, tells us that the forest area of France contains 20 per cent. conifers and 80 per cent. hardwoods (35 per cent. of this being ordinary oak and 4 per cent. stone oak).

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BEARS INTERFERE WITH FORESTERS

As an interesting example of the problems which a forester has to work out, it is said that forest officials in India have undertaken to girdle undesirable trees in order to kill them off and give more room to the Deodar and other valuable species. Himalayan bears, however, have discovered that the sap from these girdled trees is sweet and toothsome and have undertaken some girdling on their own hook. They have caused a good deal of trouble because they do not confine their operations to undesirable trees.

NEW YORK TO GROW CHRISTMAS TREES

The state of New York buys annually about a million and a quarter dollars' worth of Christmas trees. It is the intention to plant and grow a large proportion of the Christmas trees on the state forest lands and keep this large sum at home instead of sending it to other states.

The state of New York is farming only 15 million acres out of the 32 million located within its boundaries.

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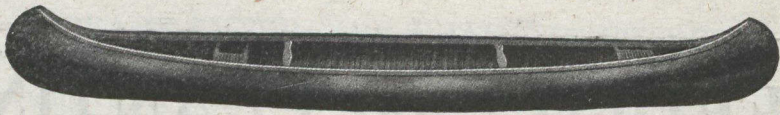
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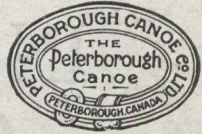
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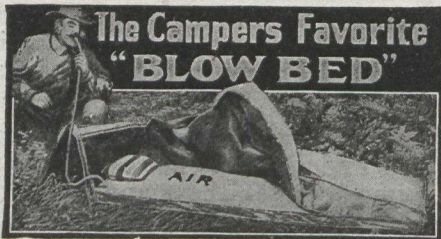


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