

# Canadian Forestry Journal

Vol. XIV.

FEBRUARY, 1918

No. 2

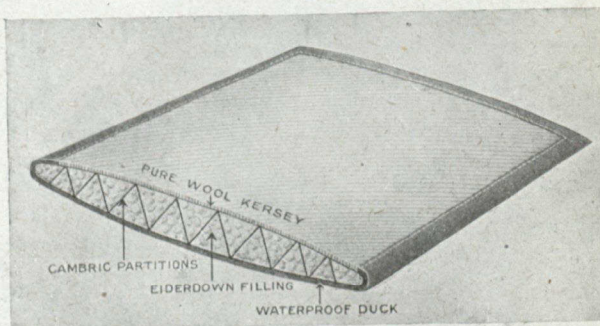


THE TRAPPER

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# Canadian Forestry Journal

Vol. XIV.

WOODSTOCK, ONT., FEBRUARY, 1918

No. 2

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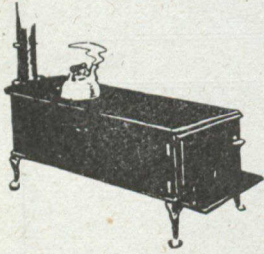
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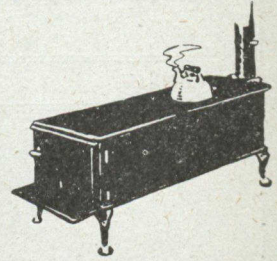
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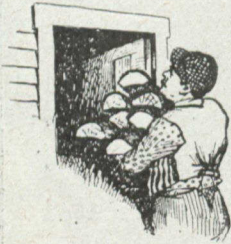
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## Get Out the Old Oak Stove



Get out the Old Oak stove, Dad,  
And set her in the room;  
The time we spend a haulin' coal  
Is better spent near home;  
There's dozens o' trees in the old South lot,  
Halfway dead and bound to rot;  
They'll make a fire blisterin' hot;  
Get out the Old Oak stove.



Get out the Old Oak stove, Dad,  
Let's quit a usin' coal;  
Our Uncle Sam can't get enough  
For all, to save his soul;  
The less we use, the more he'll git;  
A usin' wood may be "our bit"  
To make the Kaiser throw a fit;  
Get out the Old Oak stove.

Get out the Old Oak stove, Dad,  
Grind up your axe for fun;  
Put a bit of set in the old cross-cut  
And help to lick the Hun.  
There's a bug-killed hickory to use this year;  
It's good as coal, or a blame sight near,  
And it's got a crackle I like to hear;  
Get out the Old Oak stove.

Get out the Old Oak stove, Dad;  
The trees we take for wood  
Had ought'a been cut long ago,  
To do the woodlot good.  
We'll clean up all the dead and down  
And sell a load or two in town.  
Let wood help knock the Kaiser down!  
Get out the Old Oak stove.

S. W. A.  
F. F. M.

College of Forestry,  
Syracuse University

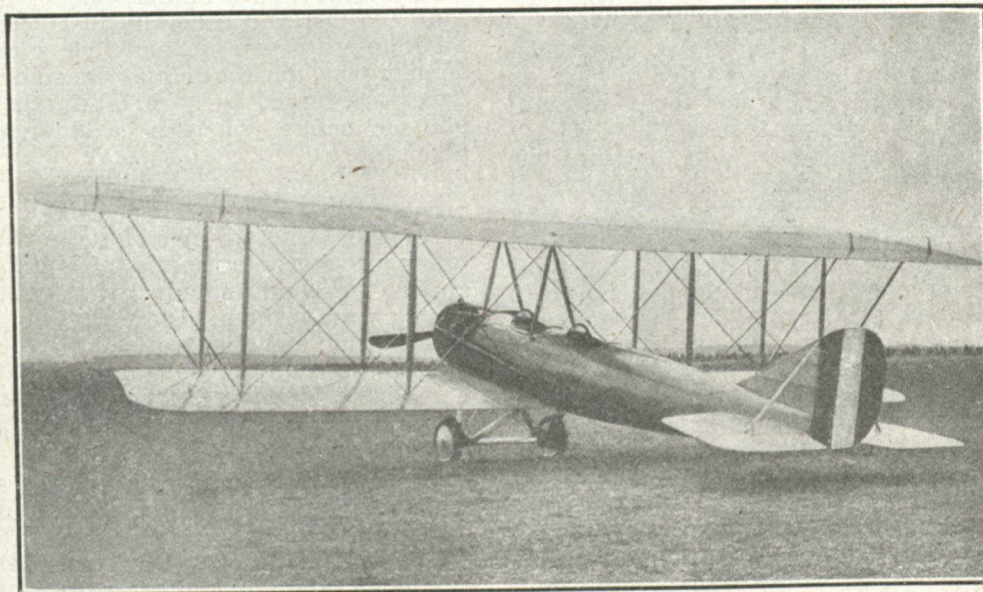


# Guarding Forests By Airplanes

BY MAJOR K. E. KENNEDY, ROYAL FLYING CORPS

*In an Address at Montreal, February 8th, Before Quebec Forest Protective Association*

## A Graphic Story Of The Adaptability Of Flying Machines to Forest Protection.



You've got to have an aeroplane of the right type, and a good one of the right type too, because an aeroplane is just the same as anything else, you have to get a good one or you can count on all sorts of trouble. Now, suppose you have, say, a motor car costing from four to eight or ten thousand dollars, and in it you can go through any forest in the land at a clip of from 80 to 100 miles an hour, and at the same time you are able to see everything for 20 square miles or more of the country, and every minute of the time keep absolutely in touch with home by means of wireless, you would say, to put it mildly, that it is a mighty useful car, now wouldn't you?

### *Indifferent to Roads*

Take into consideration the fact that roads (or the lack of them),

rivers, lakes, precipices, and so forth, do not make one scrap of difference. Some car, don't you think? Well, that is what you can do with your aeroplane, and you can do it in safety. You can go when and where you like, and come back when you like. It's a great game, I can tell you. The best of it is that the cost will only be a very little more than that incurred in buying a good car. (Applause).

I think I can show you in figures just how it works out, but of course I speak now of the cost with reference to a large way of operating. The small way is not the cheap way, as you all know. Take, for instance, a farmer with a ten acre plot; he does not go to town in a car, he does not use a tractor to plow, etc.; but the big farmer, with the big piece of land, does go to town in a fine big car,

and does use a tractor and all that sort of thing. He uses power right through the whole working of the place. It is just the same with aeroplane operations,—the bigger the field, the bigger the scale of operating, the lower the cost.

### 8000 Miles a Day!

I have taken as a basis six months' work, as I suppose you would not need more than a six months' fire protective service out of the year. I have counted on three aeroplanes because it is always safer to have an extra one. You see you can count then on having two of them always ready for business, and the third one can be overhauled and repaired if necessary. Operating in a large way the overhead cost comes down, so the larger the scale the better. Say that your machines will do five hours in the air per day. They can do more when necessary, but five hours up is a pretty good day's work. Of course, over at the front the machines are sometimes up for as long as 72 hours at a stretch, but that's pretty tough going and you won't want your fellows to do that here. Now, with two machines working five hours a day in the air you can examine closely 8,000 square miles easily. You could go over a lot more than that, but flying low to make a close examination you can count on 8,000 square miles a day. You can see all over the country as if you were in a high tower, but you can move your tower at will, as it were. When you are flying pretty high you can see tremendous distances.

### "Pusher," Best Type

For your work you would want a slow landing machine, say an aeroplane with floats—a hydro aeroplane. You would want what we call a "pusher", that is one with the propeller behind and the place for the pilot up in front where he could have an unobstructed view. With any other type of machine you would find rigging and supports and all sorts of things in the way and your pilot would be twisting and squirming in

his efforts to see and he would have to be somewhat of a contortionist or an acrobat. Up there you are going at such a clip that while you are busy twisting your neck to see around a piece of rigging you will miss about twenty or thirty square miles of country without knowing it. In your work you will not be flying for speed, so I would advise a slow flying, slow landing type of machine. You certainly want a slow lander, for if you land too fast you generally just keep on going until you hit, and then even though your machine stops you sometimes are forced to go a bit further yourself before you make a landing. (Laughter).

### Fixing Machines in Flight

Another thing which has to be taken into consideration is the gliding angle. A good machine will glide a long way without losing elevation. Say you have engine trouble; all you have to do is adjust the angle and let her glide while you fix your engine, then when the trouble is fixed off you go again.

It is also very important to get a standard type of machine, so that if parts wear out or break you can send to the factory and get them without any delay; and you can get a stock of spare parts too, and a spare part often comes in mighty handy. This refers to the aeroplane itself as well as to the engine, of course, because you are apt to need all sorts of little things in connection with your aeroplane.

### First Investments

Now, to get down to costs: let us take three aeroplanes at \$8,000 each. You can get good ones for that, and aeroplanes are like everything else, the behaviour corresponds to the cost. Well, three at \$8,000, that's \$24,000 for your machines. Then you will want sheds. I don't know just what type you would use out here, but \$1,000 would cover the cost I am sure. That is a capital investment of \$25,000. Ten per cent. interest on your investment, distributed over the six months, or the time in which you will do your work, will be, say \$13.88

per day. I am working on the basis that every day for six months your planes will examine 8,000 square miles. You will need two or three mechanics, at four or five dollars a day, say three of them at four dollars a day; that will be \$12 a day for mechanics. Your pilots will be expensive gentlemen—you'll have to pay them at least \$10 a day each, and you'll be lucky to get them at that; you will have to have two pilots. Now, two pilots, at, oh, you'd better say \$3,500 a year each (because you have to pay them by the year whether you like it or not; will mean \$7,000 a year, or \$38.88 per useful working day. Of course, you could put them at shovelling coal, or some other such highly useful occupation, in the six months they are not flying and lower the cost that way, but if you haven't any work like that for them you just have to carry the gentlemen for six months out of the year in order to have them for the other six. So far the cost per day is \$64.76, that is taken on the basis of six months' work.

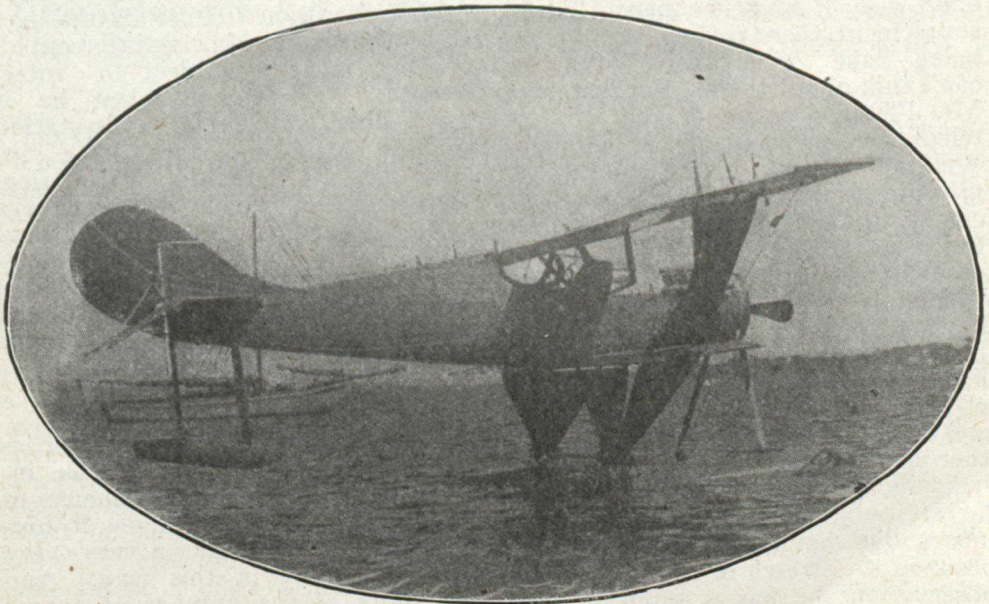
#### *Cost of Flying*

We must also take into consideration the question of depreciation and repairs, and that item depends largely

on the mileage flown, but you can say 10 cents per mile for that and you'll be about right. Then you have your petrol and oil; that cost is less than a cent a mile,—quite a bit less if you have an economical engineer. You can count on \$16.80 per day for petrol and oil, for 800 linear miles flying. That means that the total daily expenditure for examining 8,000 square miles every day for six months will be 2.0195 cents per square mile, say 2 cents, or 20 cents per linear mile you fly. I think these figures are fairly accurate, and if they err at all it is on the side of being too conservative. There are many ways in which you might save. For instance, you have to employ the pilot all the year round—you pay him for a year and work him for six months—but as I said before, if you happen to have anything else you can put him at you can save quite an item there.

#### *The Range of Vision*

One thing I am often asked is: "Can you see what is going on from an aeroplane—can you see anything much?" That depends on what is going on down below. For instance, a fellow flying over the line in France is keeping his eyes open for enemy



planes; he is dodging "Archies" he is taking photographs from which maps are made; sending wireless messages back to his headquarters; he may be dropping a few bombs here and there; and he still can see horses, carts, guns, trenches, etc., and takes the time to put down everything he sees. Now, if he can do this he ought to be able to see quite a bit of the country he flies over in peace time, don't you think? (Laughter and applause).

We fellows used to have great sport flying low, about 200 feet above the ground, and taking pot shots at birds and rabbits and all sorts of things, but we killed off so many of them that the folks stopped us. You can take a piece of white cloth a yard square and hide it, and I'll guarantee to find it anywhere, from my machine, provided the trees are not too thick.

#### *Going for Eggs by Air*

Men, I tell you that with your landing grounds here, with your freedom from the Hun, a fellow can do *anything*; and then an aeroplane is such a handy thing to have. (Laughter). Why, over there at the front when we'd come down after a hard day's work we'd find perhaps that we were short of eggs for our supper. Awful state of affairs! Well, we might know there were some a bit further back, say three or four miles. What do we do? Hop into a machine! off you go, get a couple of dozen eggs, and back you come, all in about a minute. You see, if it had not been for the aeroplane there would have been no eggs in the place. Oh yes,—aeroplanes can be made very useful! (Laughter).

## *Using the Wireless in Aeroplanes*

As for the use of wireless in aeroplanes, wireless telegraphy I mean: I had the pleasure of listening to Mr. Fletcher's very interesting remarks on the subject today, and I only wish I could be permitted to supplement them. Great things are being done "over there," but we can't talk about them. For instance, Mr. Fletcher spoke of the wireless telephone as being in its infancy. Well, all I can say is that the child is growing very rapidly over there. Of course, as I said, I cannot tell you of the great strides being made in the use of various wonderful inventions which are being used at the front, but one phase of this question has just occurred to me which I am at liberty to mention. That is, the use of kite balloons, or sausages, as we call them. A man is sent up several thousand feet in one of these kite balloons, and anchored. Up there he can see immense distances and spot any undue disturbance which might occur in the stretch of country under observation; he has a wireless tele-

phone, and he can keep the ground staff posted—all he has to do is to phone down to his companions. The man who is using wireless telegraphy for his messages has to use a great deal of discretion because his messages stand the chance of being intercepted, or they may be subject to "interference." Of course when he is flying directly to or from his station he gets clearer messages. The "interference" I refer to is electrical interference, of which there is always a certain amount, and this is a drawback in the use of wireless telegraphy. But the wireless telephone! Well, we are going quite fast and doing well with it. I can say that much about it. (Applause).

#### *Surveys by Motion Pictures*

There are all sorts of possibilities in the use of aeroplanes. For instance, making surveys by means of moving pictures. I've done it myself; and you can make a very, very accurate survey in this way. And just think of the number of people



who would be able to visit otherwise inaccessible places in comfort and safety! Another development at the front is the transportation of injured men by means of aeroplanes. I suppose people are sometimes hurt in the woods, are they not? Well, say a man is badly injured off in the forest, miles away from any place where he could receive care and attention; all you have to do is to pop him into your aeroplane and take him out to the hospital. There is no jarring from rough roads, or anything of that sort, just a steady, even motion, and you can imagine what a great thing that would be for the chap who had been hurt. You could get him to the hospital in a very few minutes. There is no doubt at all, gentlemen, travelling by aeroplane is the most

comfortable way in the world.

### *Carrying Food*

Another instance of the usefulness of aeroplanes is that of the siege of Kut-el-amara. When that city was besieged by the Turks food was taken in by means of aeroplanes, as you all know. Of course they didn't get enough in, but that was not the fault of the machines, it was because they didn't have enough of them.

MR. FLETCHER: How much weight can you carry?

MAJOR KENNEDY: Well, I can take a machine, an ordinary machine which is not what would be considered up-to-date at all, and carry a ton with comfort.

(To be concluded in March issue).

## How Uncle Sam Attacks the Wood Fuel Problem

BY A. F. HAWES

*United States Department of Agriculture. Address given at Annual Meeting of Canadian Forestry Association, Montreal, February 7th, under title "The Wood Fuel Campaign in the United States"*

### Organizing Idle Labor—Cut-a-Cord Clubs—Sawbuck Clubs For Boys. A Striking Article of Practical Suggestion.

The fuel wood campaign in the United States is now assuming fairly large and definite proportions. It was started and is being conducted by the Department of Agriculture and the Fuel Administration co-operating, and has for its definite object the substitution of wood for coal just as far as is practicable. It is not expected that the use of wood in the cities will be materially increased; or that the railroads will be burdened with wood since it is more bulky than coal, in proportion to its heating value. Neither is there any object in substituting wood in the vicinity of coal mines. Team-hauled wood should replace railroad-hauled coal as far as possible. Farmers and

other woodland owners throughout eastern United States have gradually drifted into the use of coal while plenty of wood in their own woodland went to waste. This practice should be discouraged. Villages and small cities in the vicinity of woodlands can greatly increase their use of wood. In a few cases cities of moderate size may be supplied by wood hauled by auto truck or by water.

The coal shortage on January 1, 1918, was estimated at 50,000,000 tons. Assuming a cord of wood on an average equal in its heating capacity to two-thirds of a ton of coal, an increased cut of 75,000,000 cords would be necessary to meet this deficiency.

Since the present estimate of cord-wood cut in United States is 100,000,-000 cords this means an increase of 75 per cent. in the output of cord-wood over the normal annual consumption. Those responsible for the movement will be well satisfied, because of the shortage of labor, if an increase of 25 per cent. can be obtained the present year.

#### *How it is Organized*

The method of organizing the wood fuel campaign has varied somewhat in the various States, but in almost every State where progress has been made the Federal Fuel Administrator of the State has appointed a Wood Fuel Committee to direct the movement. This Committee usually consists of the Fuel Administrator as Chairman, the Director of Extension at the Agricultural College, the Chairman of the State Council of Defense, the State Forester, or Professor of Forestry at the Agricultural College. In some States this State Committee has in turn appointed County Committees. In nearly all cases the work in the county is carried on jointly by the County Fuel Administrator and the County Agricultural Agent.

The methods of conducting the campaign have been along the following general lines:

1. Publicity along two lines to popularize the use of wood by consumers; and to encourage the production of wood by woodland owners. This has been done through the newspapers, posters, movies, the pulpit, the schools and in other ways. An attractive, though too detailed, poster has been used through New England.

2. Stimulating production by guaranteeing a market for the product. The price of wood varies greatly in different parts of the country according to the price of coal; from \$5 to \$6 a cord in the vicinity of the soft coal mines of Missouri, and Illinois to \$15 to \$18 in the cities of New England. Under the former conditions practically nothing is allowed for stumpage, and there is little incentive to cut. Where the very high prices obtain on

the other hand no one will burn wood or even order it so long as any coal is obtainable. In view of the disastrous result of fixing a maximum price for coal it has not been thought best to establish any such price for wood. Unless there is an embargo on shipping coal into wooded districts, woodland owners are naturally afraid of an over-production of wood and a consequent drop in the price. This conservation, especially on the part of farmers, must be met by some method of guaranteeing a market for wood at a remunerative price. Several methods are being worked out in the various States. The safety of all of them rests upon the fact that the Fuel Administrator may exclude coal if he sees fit and thus maintain the value of the wood.

#### *The Plan in Maine*

In Maine the local committee has made a careful canvass of the possible consumers to determine how much wood could be disposed of at a definite price. The plan is to allot these individual orders to the various farmers in the region. In this way the committee acts as a clearing house to bring producer and consumer together.

In Tennessee and New Hampshire the matter has been handled somewhat differently by the formation of War Fuel Companies. A few public-spirited citizens get together and form a company to buy wood and sell it either at cost or at a price sufficient to give them a 6 per cent. profit.

#### *Municipal Yards Best*

The best method of guaranteeing a market is undoubtedly through the establishment of municipal wood yards. More progress along this line has been made in the South than in the North. For example, a number of cities in Georgia have prevented much suffering among the poor by establishing municipal wood yards. In Athens the local fuel administration has set a price of \$6 a cord for pine delivered, and \$7 for hardwood.

In North Carolina at least twenty cities and towns now have municipal wood yards in operation. Detailed

information regarding one of these, that of Durham, N.C., may be of interest. The management of the fuelwood situation lies in the hands of a committee of three, one from the city government, one from the county commissioners, and the secretary of the Chamber of Commerce. A wood yard, adjacent to the railroad tracks, was purchased by the city, and the former owner was retained as manager at \$100 per month. The yard is equipped with two electrically-driven circular cut-off saws and a splitting machine. About 60 cords of wood can be reduced from 8 ft. lengths to stovewood per day. The wood comes largely from farmers' woodlands nearby and is green pine and oak, cut in 8 ft. lengths, and split in halves or quarters. The price piled in the woods is \$3.50 per cord. It is hauled from the woods to the roadside by six county teams driven by convicts, and there is piled in a long rick, from which it is loaded on to motor trucks. Three trucks are in use, two three-ton trucks belonging to the county, and a 5-ton truck belonging to the city. The trucks make four trips a day, the distance being  $2\frac{1}{2}$  to 3 miles, and carry about one cord per ton of rated capacity; making a total daily delivery of all of them about 40 cords. The cost of hauling is about \$1 per cord. The estimated cost of sawing to stove length is 50 cents to 75 cents per cord. It is sold at \$6 per cord on the yard, or \$7 delivered. It is intended to run the yard at cost, and the prices may be reduced later. The city plans to buy 6,000 cords of standing timber at 50 cents per cord to be cut and hauled by convict and city labor. The estimated cost of this wood "fitted" for delivery is as follows:

Stumpage.....	\$ .50
Cutting and splitting.....	1.00
Hauling.....	1.00
Sawing to stove lengths.....	.75
Cost on yard.....	\$ 3.25

#### *Why a Municipal Yard?*

There are two sound arguments for the establishment of municipal wood yards. The first is that it offers the

best way of guaranteeing a market for a large amount of wood at a uniform price and thus stimulates production. The second is that when properly handled it furnishes an insurance against a serious coal shortage. Such a wood yard should not be handled as an ordinary business with the idea of keeping the minimum allowable stock on hand. There should be a definite plan of maintaining a sufficient supply of wood to relieve any unforeseen coal shortage. This amount will naturally vary with local conditions. It has been suggested that this reserve should equal 10 per cent. of the fuel ordinarily used in the town or city. On this basis a town which uses 10,000 tons of coal would need a wood reserve equivalent to 1,000 tons, or about 1,500 cords of wood. To supply this at \$8 per cord would require a working capital of \$12,000.

The question has been raised whether the possession of such a wood fuel reserve would not mitigate against a community in the eyes of the Federal Administrator and invite an embargo on coal to that community. This can be answered in the negative. The fact is that the Administrators in certain States, notably Indiana and Missouri, are already discriminating against well-wooded regions, and this may be done more widely next winter. Such a community which has a wood fuel reserve will therefore have a great advantage over one similarly situated but without one.

#### *Organizing Idle Labor*

The methods described above are aimed to bring about an increased sale of wood. Much wood can undoubtedly also be produced by the consumers themselves and considerable has been done toward bringing this about.

Professional and business men have already been mobilized in some sections to work Saturday afternoons and holidays cutting wood. In Massachusetts a movement has been organized to form "Cut-A-Cord Clubs." Various colleges encouraged their faculty and students to do work

of this kind during the Christmas holidays. In Indiana the boys in some of the rural schools have organized "Sawbuck Clubs." In Connecticut wood cutting bees are being organized, in some cases by the town selectmen. The town buys stumpage at \$1 per cord and pays the men \$2.50 per cord for cutting. This wood is kept as a reserve for the relief of the poor. Millworkers are being greatly helped in their fuel problem in some cities, through the co-operation of the employers, who have arranged for the purchase of stumpage from nearby woodland owners. In one town near Worcester, Mass., millworkers have been putting in Sundays cutting wood which was offered them at a low price. An effort has been made throughout Massachusetts to mobilize the labor thrown out of employment on heatless Mondays for the cutting of wood. It has been pointed out that a man can easily cut enough wood on Monday to keep his family warm for a week.

#### *Forestry and Wood Fuel*

It is important that a nation-wide campaign of this kind looking toward the greater production of wood fuel should be conducted along the lines of true conservation. It is therefore particularly fortunate that the campaign has been directed from the start by the U. S. Forest Service. Probably the greatest obstacle to the practice of forestry on this continent has been the lack of a market for the poorer material of the forest. While the straight, sound trees of the more important species have been steadily increasing in value, those unfit for lumber have remained at practically the same low value. In fact in many sections cordwood has been less valuable during the last decade than fifty years previously when the rural population was greater; when people relied entirely on wood as fuel; and when railroad locomotives burned wood. In order to make the practice of silviculture possible it is important to have a profitable market for these low grade woods. It is the splendid market which has prevailed in Europe

even for branch wood that has made such an intensive forestry possible. The present fuel emergency, by giving a much better market for wood than has previously prevailed, makes better forestry practice possible. The foresters aim to take advantage of this opportunity and direct the cutting just as far as possible so that the woodlots will not be depleted, but will be improved. In co-operation with the county agricultural agents demonstration cuttings will be made wherever practicable to serve as object lessons to surrounding owners.

#### *Economy Forced on us.*

Certain permanent benefits should result to our forests as a result of this fuel emergency. The attention of the nation has been focused upon the coal problem. Every one realizes as never before how completely we are at the mercy of the railroads for coal, yet how independent we may be for wood, an almost equally good fuel. We realize also that already about one-fourth of the original supply of anthracite coal has been used up, and that at the present rate of consumption, 5 tons per capita, the problem of coal conservation is important. Hereafter it will be imperative for the nation to take the necessary measures to require the use of local wood, a replaceable fuel, as far as possible in place of coal, a non-replaceable fuel. It seems that the tendency must be to return more and more to wood as a domestic fuel as time goes on, and as the country becomes more densely populated.

Some of the organizations at present being developed will also be of permanent assistance in the forestry movement. There is no reason, for example, why the municipal wood yard should not be made permanent. It might be enlarged so as to give farmers an opportunity to sell not only wood, but fence posts, and rough lumber direct to the consumers. Better methods of marketing so as to give the timber grower a greater share of the profit, which has hitherto gone so largely to the operator, will do much to establish permanent forestry on this continent.

## The Fuel Merchant's Point of View

How many difficulties face the wood fuel merchant in any private attempt to relieve the coal shortage was interestingly outlined at the "Wood Fuel Symposium" of the Canadian Forestry Association, in Montreal, February 7th, by Lt.-Col. H. Jekyl of Montreal and Lachute, an extensive wood fuel wholesaler.

"Ordinarily, the demand for fuel wood is small," remarked Col. Jekyl. "Last fall I contracted for a large supply of fuel wood and found the demand very little so that I was obliged to dispose of much of it to the chemical plants. Coal is much cheaper, as prices now stand. We are paying farmers as much as \$8.50 a cord delivered to the railway siding.

"Another factor is storage space within the limits of a large city. Space in Montreal is too precious for storage of large quantities of wood fuel. The fuel merchant can store very much more coal in a given area. At present the local yards are nearly all full of cordwood.

"If there were some guarantee to take the wood off our hands should the market fall, we would be glad to make ample provision, but just now we feel that as soon as the war ends the market is sure to sink.

"Cars for cordwood transport are exceedingly hard to get. I have been able to ship only two cars out of a pile of 2000 cords and hence must hold that wood over until next year."

### EDUCATING THE FARMER

Lt.-Col. Harkom, Melbourne, P.Q. who followed Lt. Col. Jekyl, observed that most of the wood for fuel came from farmers' woodlots and the price had gone up from four to eight dollars. As many farmers gave only 96 cubic feet of wood for a "cord," it brought the price for a standard cord of 128 cubic feet up to \$11. At the same time, the farmer who could not do his own cutting was obliged to pay three dollars a cord to get his trees felled and sawn. Col. Harkom took issue with the common practice of cutting

the woodlot clean, leaving the area unproductive for perhaps one hundred years. "We are leaving to posterity a big war debt and it is our duty to leave them the means whereby they can pay it." The farmers ought to be educated so as to realize the potential value of a flourishing woodlot and take profits from it without ruining the capital stock.

### LUMBERMEN CONCLUDE AN ACTIVE YEAR

The tenth Annual Meeting of the Canadian Lumbermen's Association was held in Montreal on Tuesday, February 5th and proved the most successful in the history of that active organization. The meetings were largely attended as was fully justified by the progressive reports of the President, Secretary and Treasurer, and by the programme of new work to which the Association committed itself for 1918. One project which was received with hearty favor was a formation of a War Service Committee which will act in an advisory capacity to the Dominion Government, and will be competent to furnish at a moment's notice whatever may be asked for in regard to the lumber manufacturing resources of the country. Excellent addresses were given by Mr. H. I. Thomas of Ottawa, on the "Ontario Workmen's Compensation Act," and by Mr. Holt of Chicago on the "Feeding of Men in the Lumber Camp." The report of the secretary Mr. Frank Hawkins, showed that during the year the Association had undertaken many constructive enterprises and had carried them through to success. The session was regarded by all present as constituting a red-letter day in the history of the Canadian Lumbermen's Association. The President for 1918 is Mr. W. Gerard Power.

On Tuesday evening a banquet was held at the Windsor Hotel, Mr. W. E. Bigwood, the President, acting as toastmaster.

## *New Brunswick Decides For New Forest Service*

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Telegram from Hon. E. A. Smith, Minister of Lands and Mines, New Brunswick, to the Canadian Forestry Association, Feb. 2nd, 1918: "Our Government is preparing a Forest Act to be introduced at coming session for the better protection of our forest lands placing same under a Forestry Commission to control all branches pertaining thereto, with permanent staff of employees appointed on qualification and merit only."

Readers of the Forestry Journal who have been following the progressive developments in New Brunswick will read the foregoing definite commitment of Dr. Smith with much gratification. It is assumed that the Forestry Commission will contain representatives of the Government, the licensees of limits and owners of "granted" lands. The Forest Act

referred to is in course of preparation and after the thorough consideration given to the question by the Government, with examination of other provincial systems and a series of consultations with forest service authorities, the Act is certain to assure the Province a modern and effective form of administration.

Fire protection is by no means the only undertaking for which the forest service will be responsible. It is probable that in recent years the loss to the public through careless operating of timber tracts mainly by jobbers, has brought about a heavier annual waste of the forest than through the agency of fire. Therefore, the duty of the Forest Service under the new act will be to supervise the cutting and eliminate as much needless waste as possible. This will require not only a clearly worded Act but resolute administration.

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## *In The Forests of France*

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The following is an extract from a letter received by Mr. R. H. Campbell, Director of Forestry, Ottawa, from Captain W. H. Millar, formerly Professor at the Toronto Forest School, and now with the 10th Forest Engineers of United States in France: We are located in a region now of quite large Scotch pine timber, which is just exactly the same as some of our red pine stands in Northern Ontario, except that the soil is not by any means as dry and sandy as we generally find where red pine grows pure. We are making a clean cut, first cutting out the under storey of hardwood and grubbing the stumps in order to prevent sprout reproduction. This is a planted forest about 75 years old and there are trees in it

well over a hundred feet high and from 18 to 20 inches in diameter at the butt. However, there is not much of this kind of timber in our immediate vicinity, but very large areas of immature stands. I am sorry that I am not able to give you a detailed account of our trip across because I am sure it would be rather interesting to you both as a Canadian and a Scotchman. We received a most enthusiastic welcome in Great Britain which surprised us to a certain extent, especially when we found the French rather undemonstrative, though extremely friendly.

"Although it is now almost Christmas we have not yet had what we would call cold weather in Canada and apparently there is not going to be much winter to speak of.

# The Work of The Association

## A Twelve-month Of Active Propoganda As Discussed In The Directors Report For 1917.

With the close of 1917, the Canadian Forestry Association concludes the eighteenth year of its history. The concentration of public attention on the prosecution of the War contributed beyond doubt to a readier reception of the Forest Conservation gospel while at the same time making the growth of our membership and the collection of revenues none too easy. The factor, however, most worth emphasizing is that the Canadian people have concerned themselves as never before about the forest resources of their country and the best methods for their perpetuation. This in turn, has stimulated conservation policies as applied by governments and private corporations and is gradually opening the door for an observance of silvicultural principles in the handling of timberlands.

### *Public Good Will*

The efficacy of educational work in the advancing of Forestry ideas becomes better exemplified each year. While the science of forest management is very old and so thoroughly proven in Europe as to have been a national enthusiasm during a century, its elementary principles of fire prevention have hardly yet been accepted as a whole in Canada and this is due materially to the tardiness of educational propoganda. Most of the major hindrances of fire protection in the Dominion have their origin in an unformed public sentiment. Even with elaborate administrative machinery and complete technical guidance for the prevention of forest fires one of the first constructive efforts is to secure the goodwill and co-operation of the public. Apart from the initial phase of fire protection the main hope of progress in the management of woodlands or timberlands and the improvement of

forestry practice on public lands, requires not only constructive information but the effort to make it nationally popular.

The Forestry Association utilizes many avenues for educational work, and while obliged to find each year the greater part of the revenues with which it operates, has managed to carry on new work in most of the provinces to advance its membership and record several substantial improvements in provincial and federal laws and administration for which it has specifically campaigned.

### *Working in the West*

Early in the year the Association increased its activities in Manitoba, Saskatchewan and Alberta with the object of securing comprehensive amendments to the existing "Prairie and Forest Fires" Acts, placing a check upon settlers' clearing fires and rendering it obligatory to take out a permit from a ranger or forest guardian before starting such dangerous operations. None of the prairie provinces had hitherto admitted responsibility in curbing settlers' fires despite the annual losses caused to the timber areas and to settlers' property. The absence of any supervision such as is imposed in Quebec, Ontario, Nova Scotia, and British Columbia, created a situation calling imperatively for a remedy. With the co-operation of the Dominion Forestry Branch draft, revisions of the Arts were presented to the Manitoba and Saskatchewan Governments. These were immediately followed by newspaper campaigns in which we were given splendid support by leading Western editors. Influential public bodies such as Boards of Trade, grain growers, lumbermen's associations, etc., supported the Forestry Associa-

tion and their assistance counted materially. The representations made by the Commission of Conservation on the need of a Permit Law were also effective. Pressure was brought to bear by our strong Western membership so that many hundreds of letters were written to legislative members and ministers urging the passing of the amendments. Week by week, new articles were supplied to the newspapers and fresh information to our members. The Government of Manitoba and Saskatchewan finally adopted the new bills and while the provincial machinery for administration is not yet complete the legislation placed a very valuable weapon in the hands of the forest guarding forces. The Alberta Government was approached during the latter months of 1917 and by aid of the Dominion Forestry Branch, amendments to the existing Prairie and Forest Fires Act were submitted to the Premier, Hon. Charles Stewart. These amendments forbade the employment of fire for clearing land in forested regions except by written permit and under supervision of responsible officers of the Dominion or Provincial governments. Twelve Boards of Trade were appealed to for co-operation and most of them addressed the Government favorably on the subject. Influential organizations such as the United Grain Growers, and many others supported the Forestry Association and once more our Alberta membership of nearly seven hundred generously undertook by letter and personal interview to press the matter upon the Provincial Government. The Alberta newspapers gave excellent aid and were kept supplied with special articles. As the session of the Legislature opens on February 7th, we have yet no means of knowing definitely the Government's attitude to our proposals. It is not anticipated however, that Alberta will allow itself to fall behind the sister provinces in a matter of such vital importance.

### *Political Patronage*

Closely allied to the protection of the western forests was the subject of political patronage in Dominion Forest Service appointments. The handicap of political interference in selecting rangers placed the Service at a great disadvantage, wasting public money and nullifying discipline. At midsummer the Association commenced a series of newspaper articles representing the patronage business as it affected the Dominion Forestry Branch in its field management. This developed a wide editorial discussion demanding a cessation of the policy in which many of the leading newspapers referred to the subject repeatedly. It was gratifying, therefore, to have the Dominion Government place itself on record as determined to remove the influence of patronage committees in appointments to the whole of the Civil Service and to take practical steps through the Civil Service Commission to implement that assurance.

### *In New Brunswick*

Believing that the situation in New Brunswick called for the Association's assistance that field was given special study and a part of the year devoted mainly to educational and propagandist campaigns. In this enterprise we had most valued and constant aid from Mr. Clyde Leavitt, Chief Forester of the Commission of Conservation, Mr. W. B. Snowball, of Chatham, N.B., the Minister and staff of the New Brunswick Department of Lands and Mines and our New Brunswick members.

The institution of the Forest Survey by the provincial government and the close sympathy of the Minister of Lands and Mines with the plans of the Forestry Division gave ground for believing that a re-organization of the Forest Service and an extension of its authority to the supervision of cutting and the application of modern fire protection was more than possible. To encourage these objects the Association commenced a newspaper campaign early in the summer discussing th



aims of conservation from various points of view. An illustrated brochure giving a survey of the forest resources of the province, the forest industries, the evidences of fire damage, present character of the fire prevention service as compared with more modern systems, the advantages of supervised cutting and other informative matters calculated to support any Government action for the improvement of the Forest Service. This was given most careful distribution throughout the province and met with a good reception.

#### *Public Meetings*

At midsummer the Secretary held nine public meetings in towns and country places. Good audiences were secured and at the same time a much larger field was reached by extended newspaper notices. Two thousand copies of a 32-page illustrated booklet, "Hon. Premier Livre Sur La Forest," were placed with French-speaking children in the northern areas with a special insert regarding New Brunswick's Forest Service reforms. Consultations were had with many New Brunswick authorities who were agreed that educational work was a pre-requisite of progressive legislation. In October, the Secretary held seven more meetings and illustrated lectures in the province and again these were attended by wide newspaper publicity. Following these steps the newspapers and magazines co-operated very generously with the Association in publishing special articles and editorials focusing attention upon New Brunswick's need for a thorough-going forest service. Quantities of newspaper cuts and cartoons were supplied free to thirty of the best circulated papers and liberal use made thereof. The object of supplying these engravings was to help to keep forest problems to the forefront immediately prior to the legislative session.

In the adjustment of difficulties arising from the lack of fire protection along Government Railways right-of-ways through private owned timberlands in New Brunswick the Associa-

tion was also able to be of some help.

Of the many lines of direct publicity, mention may be made here of some of those found especially effective during the year.

#### *In East and West*

The Association regards the public meeting method entirely unique as a means of arousing a serious and permanent interest in forest conservation. Thirty-two such meetings were held by the Secretary during the year at Brockville, Vernon, Penticton, Nelson, Calgary and the following points in New Brunswick: Chatham, Moncton, Tabusintac, Millerton, Blackville, Doaktown, Boiestown, Bay du Vin, Woodstock, Fredericton, St. Stephen, Saint John, Sackville, Campbellton and Bathurst. In addition, interviews were had with members and officers of the Governments of New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia for the discussion of forest conservation matters. Then Secretary's mileage was in excess of 17,000.

By the co-operation of the Minister of Lands and Forests of Quebec, we were enabled to arrange a lecture route in Quebec for Mr. Avila Bodard, who gave illustrated addresses at ten points and will probably cover many others during the winter and spring. Similarly, we were able to make arrangements in the French-speaking communities of New Brunswick for a series of twenty illustrated addresses by Mr. J. A. Doucet of the Dominion Forestry Branch, for which great favor we are indebted to the Director of Forestry. Mr. Doucet's meetings will take place during February and March. A successful meeting of the chief executives of the Montreal banks and other financial men was arranged by our Association on December 14, Mr. Ellwood Wilson giving an address on the financier's interest in forestry practice.

#### *Travelling Lectures*

To encourage the holding of other public meetings for the discussion of Forestry, two travelling lecture sets were added to the two in use in 1916

and those have been widely employed in Ontario, Quebec, New Brunswick and Nova Scotia. By arranging an itinerary with Boards of Education, churches, leaders of Boy Scouts and others, these sets go direct from town to town where advance arrangements have been made for meetings. Each lecture set consists of from 50 to 55 lantern slides, mostly in colors, and a complete manuscript — the whole securely boxed against breakage.

With these travelling lectures operating almost continually, each responsible for from two to five lectures a week with the exception of midsummer, a very large audience in the aggregate is reached.

#### *Winning the Children*

To get into contact with a greater number of the school children than can be reached in any other way, three thousand school teachers selected for us by their school inspectors, were supplied with special forestry talks for the children, called "Adventures in the Forest." With each talk went two large printed cards bearing two photographic illustrations and two cartoons which are passed about the classroom at the close of the teacher's address. In many schools, essays are set on the Association's talks. This branch of our propaganda will be widely developed if our means permit.

A commencement was made in the circuiting of motion picture films. The supply of films of educational value is not only very limited but the cost bears heavily upon the Association's small revenues. However, it is hoped to develop a Film Library for circulation in timbered districts. At present the Secretary utilizes motion pictures at most of his lectures.

#### *Helpful Literature*

In the field of direct educational work through printed literature, the Association has gone to the limit of its purse. Publications for school children, boy scouts, settlers, railway employees, etc., have been prepared and issued in as large editions as the

funds could bear. While substantial ground has been covered, it is the Association's hope that Governments and private corporations will take up the duty of spreading educational literature, and thereby more adequately cover the ground. Fourteen thousand copies of "Mon Premier Livre Sur la Foret" were given careful circulation in Quebec, New Brunswick and some in Manitoba. Ten thousand of "Your Enemy's Photograph" in two languages were handed to settlers. Substantial editions of "Provincial Rights and the Western Forests," "The Forests of New Brunswick," "Fire," "Who Loses?" "Open Seasons for Fish and Game," "Timber Reserves in Canada and Europe," "Adventures in the Forest," "The Pine Tree," "White Pine Blister Rust," etc., reached a large public such publication being directed where it would do most good. Our method of distribution safeguards against waste as small packets of copies are sent to persons actively co-operating without work, or delivered direct, by post to the ultimate reader.

The Forestry Association's mailbag of out-going literature in 1917 contained a total of over 200,000 pieces.

#### *To Save the White Pine*

Steps were taken in April and May to arouse public interest in the white pine blister rust which menaced the white pine areas of Eastern Canada. A popularly-written expert treatise on the subject of the white pine rust was prepared at our request by Dr. Gussow of the Department of Agriculture, and 3,000 copies of it in pamphlet form, well illustrated, were sent through the white pine districts of Ontario, Quebec and parts of New Brunswick. The Association communicated with the local councils and school boards of practically all of the towns within reach of white pine areas, supplying them with educational literature on the subject and asking their co-operation in getting the school children, boy scouts and others at work, so as to locate infections.

Newspaper publicity also gave much attention to this subject. We had communicated with the Minister of Agriculture and a large number of the members of the House of Commons placing before them the serious danger certain to follow neglect of the blister rust menace and asking support for the Dominion appropriation of \$50,000 to assist preventive work in Eastern Canada. This grant passed the House without opposition.

At the beginning of the season among many similar schemes to awaken public apprehension of the forest fire danger we addressed appeals to 6,000 Canadian clergymen drawing to their attention the need for public warnings regarding the consequences of carelessness of fire while in or near timbered areas and asking their co-operation in spreading these hints on fire prevention. While unable to trace the results of this appeal we know that in many cases, at least, pulpit announcements were based upon it.

#### *Special Advertising*

Early in the Spring four hundred lumber firms were supplied with advertisements setting forth the case for personal care in the forest, and in scores of instances the firms placed the ads. in their local papers and in magazines at their own expense. This will be made an annual enterprise.

The Canadian Forestry Journal has given the Association's work vigorous support and has kept in view its chief office as a propagandist organ. The loyalty of our old members and the adherence of so many new members is very largely due to having a monthly medium capable of popularizing the forest conservation cause. The Association desires to improve the Journal substantially in 1918. The cost of magazine publication has risen rapidly forcing many to forego book paper and illustrations and to increase their subscription rates.

For propagandist purposes, fifty copies of the Journal are sent monthly to the Reading Camp Association

which places them with lumber camps. Copies also now appear on twenty-four Pullman cars and on the tables of the leading clubs and in some of the convalescent homes of the Military Hospitals Commission.

#### *Best Year Financially*

Financially, we have had our most advance year with total revenues of \$11,773, and total expenditures of \$10,801.45 leaving a balance at December 31st of \$972.46.

At midsummer, the Association applied to the Minister of Finance for an extra grant of one thousand dollars to develop the work during the remainder of the year and this was given. Special subscriptions were secured from the following firms:

Howard Smith Paper Mills, Ltd., \$100.

J. R. Booth, \$200.

St. Maurice Paper Co., \$50.

River Quelle Pulp and Lumber Co., \$50.

Brown Corporation, \$150.

Riordon Pulp and Paper Co., \$150.

Sir Clifford Sifton, \$100.

Sir George Perley, \$25.

Hull Lumber Co., \$25.

H. H. Hettler Lumber Co., \$50.

Provincial Paper Mill, \$50.

Hon. Richard Turner, \$25.00.

J. K. Macdonald, Toronto, \$10.

W. E. Bigwood, Toronto, \$50.

E. B. Eddy Co., \$100.

A. H. Campbell, Toronto, \$25.

Pembroke Lumber Co., \$25.

Whalen Pulp & Paper Mills Vancouver, \$100.

M. J. O'Brien, Renfrew, \$100.

Colonial Lumber Co., \$25.

Belgo Canadian Pulp & Paper Co., \$100.

Canada Paper Co., \$100.

Bronson Company, \$100.

Wayagamack Pulp and Paper Co., \$25.

Hon. N. Curry, Montreal, \$50.

McLaren Lumber Co., \$100.

Lake Megantic Pulp Co., \$50.

St. Maurice Forest Protective Association, \$100.

Donnacona Paper Co., \$100.

Ontario Paper Company, \$100.

Total

\$2,235.

The Association's most hearty thanks are due to these special contributors, who have so generously recognized the national benefits accruing from our work.

#### *Membership Growth 2000*

In a year filled with so many exciting events within and without the Dominion, the Association's membership could be promoted only with some difficulty. Prospective members were canvassed systematically by letters and literature, many of our old members aiding us from time to time by personal canvass, so that when the year came to a close we had added a total of 2,000 new members. This is about double the additions of 1916, and brings the total membership to 6,200 representing an increase of one hundred per cent. in two and a half years. It is noteworthy, too, that the revenues of the Association have also doubled in the same period.

#### *Wider Effort Needed*

At no period has a widespread educational effort been so vitally necessary in the interests of the nation nor has the public mind been so receptive. No work pays higher dividends than the spread of information regarding the natural resources, their maintenance, and utilization. During the past year we have opened many new fields and it is important that successful educative methods should be developed in all parts of the Dominion so that citizens in remote districts, as well as in organized communities, should be brought into contact with conservation ideas. Because of the urgent call for extended service and the adaptability of the Forestry Association for such a mission the Directors feel that the Association will have in 1918 the most liberal co-operation possible on the part of Governments, wood-pushing industries and patriotic citizens in providing means sufficient for the task.

## The Annual Meeting at Montreal

**Lt.-Col. J. S Dennis Elected President; J. S. Gillies, Vice-President. Large Gain In Membership.**

The Annual Meeting of the Canadian Forestry Association was held at the Windsor Hotel, Montreal, on Wednesday, February 6th and Thursday morning, February 7th.

The meetings this year were featured by a Wood Fuel Symposium in which the crisis in Canada's cord wood supply was thoroughly discussed from the point of view of the Canadian forester, the wood fuel merchant, the railway transportation expert, the owner of woodlots, etc. The United States Forest Service very kindly permitted the attendance of Mr. A. F. Hawes, of Washington, D.C., who has had charge of much of the organization by which the United States Government co-operating with many of the States has succeeded in getting near a solution of the wood fuel problem. Mr. Hawes' address

was of a remarkably practical character, filled with suggestions calculated to assist Canadian municipalities facing the same situation.

#### *Directors Present Report*

The meeting of the Directors of the Association, held on Wednesday morning, February 6th, was attended by a good representation of Directors and members. The president, Hon. Sydney Fisher, was unable to be present, as he had been undergoing dental treatment of a serious nature, and addressed a letter to the meeting referring to the excellent progress of the Association during 1917, and expressing hearty wishes that the present year should prove most prosperous and useful. In Mr. Fisher's absence, Mr. Wm. Power, former President of the Association, acted as chairman. The nominating committee presented a report, which was

heartily endorsed by the meeting, electing Lieut.-Col. J. S. Dennis, Vice-President of the Canadian Pacific Railway Company, as President of the Association for 1918 and Mr. J. A. Gillies of Gillies Brothers, Lumbermen, as Vice-President. Hon. Smeaton White, President of the Gazette Printing Company, Montreal, was made a Director in the place of the late Denis Murphy. Hon. W. E. Foster, Premier of New Brunswick was made territorial Vice-President for New Brunswick. According to the usual precedent, Mr. Gordon C. Edwards, Vice-President for 1917, would have assumed the Presidency but for a special request made by Mr. Edwards that, owing to matters of health he was unable to assume any new office this year. The report of the Directors covering the main activities of 1917 was read by the Secretary, Mr. Robson Black, and adopted by the meeting. This report which appears elsewhere in this issue of the Journal, shows that the Association has had a very active year and that results of a most practical and important character have resulted from the educational campaigns.

#### *Membership Doubled*

The membership of the Association has more than doubled during the period of the war, while the revenues have multiplied to a similar extent. The Directors voted to increase the Secretary's salary by \$200.

The report of the Treasurer, Miss M. Robinson, showed receipts of \$11,775.91 and expenditures of \$10,801.45, leaving a balance at December 31st of \$974.46.

#### *Riddance of Patronage*

The resolutions presented the following resolutions which were carried unanimously:

"Whereas, the patronage system of making appointments undoubtedly constitutes the most serious obstacle to forestry and fire protection on Dominion lands in the West.

"Resolved that, this Association continue its efforts to secure the early abolition of the patronage system of

making appointments in the field service of the Dominion Forestry Branch as a part of the general reform to which the Union Government is pledged.

#### *The White Pine Menace*

"Whereas, the pine blister disease undoubtedly constitutes a most serious menace to the white pine forests of Eastern Canada, in which it is already now firmly established.

"Resolved, that this Association, while recognizing what has already been done in this direction, continue to exert its influence upon the Dominion and Provincial Governments concerned, to the end that no practicable means be omitted to restrict the further spread of this disease, so far as humanly practicable."

#### *Fire Statistics*

The report of the special committee of ten members (T. W. Dwight convenor,) appointed by the Association to take up with the Provincial Government the matter of the collection and publication of uniform statistics of forest fire losses was presented and showed that the committee had made an earnest effort to encourage better methods of collecting statistics and of securing their publication. Copies of the report forms in use by British Columbia, Ontario, and the Dominion Forest Services as well as the St. Maurice Forest Protective Association, had been sent to all members of the committee, who in turn had offered numerous suggestions and criticisms of undoubted value. The report advocated better standardization of the headings under which information gathered is to be classified if uniform summaries are to be made at the end of the season and incorporated in a general publication of fire losses for the Dominion. Such a publication was issued by the United States Forest Service covering the fires in that country. The Dominion Forestry Branch has prepared a summary of the available fire statistics for 1914, 15, 16, covering the whole Dominion, which is in course of publication.

The meeting decided that the committee should continue its efforts in 1918.

An interesting discussion took place as to the possibility of obtaining more detailed information as to the amount of timber destroyed. Mr. Ellwood Wilson thought that the ordinary rangers were not competent to gather such information. The lack of maps was also a great hindrance. Mr. Clyde Leavitt thought that the question should not be looked at wholly from the view point of the private owner. No one would suggest that detailed information of fire losses should be made public with obvious consequences to the limit holder. The Provincial Government, however, Mr. Leavitt thought ought to be in a position to know more definitely what quantities of timber had gone by fire in a given period. The forest protective associations were semi-public bodies. Their rangers presumably were as competent to estimate timber damage as those of Ontario, British Columbia or in the employ of the Dominion Forestry Branch.

Mr. W. C. J. Hall believed that the Province of Quebec was able to present statistics as complete as British Columbia. The question of damage value was not yet a matter of general agreement. Mr. Kernan agreed with Mr. Wilson that the reports as now given by the Quebec Associations were as complete as practicable. Anything more detailed at present would be guess work. The only way to better the situation would be by much expenditure for maps and scientific estimates. Mr. Leavitt strongly contended that an intelligent inspector could be trusted to give an eye estimate, that would prove much more useful than the present disregard for timber damage, evidenced by the report forms. Mr. R. H. Campbell emphasized the necessity of statistics in making any progress. There were a good many uncertainties in estimating quantity or value of areas burned. At present the only way of reaching any conclusion on this point was through careful de-

duction by technical men in the head office. A man on the ground, however, ought to be in better position to make a reasonably accurate guess. Mr. Arthur Graham, Manager of the Ottawa River Forest Protective Association, said that an attempt was now being made to get more complete reports. The most accurate information now available was through the members of the Association and their cruisers and foresters. Mr. Wm. Power, (temporarily vacating the chair), urged that the Association ought not at the present time to express an opinion on the matter. In this Mr. W. F. V. Atkinson concurred. It was agreed on Mr. Leavitt's suggestion that the committee should continue its efforts towards standardization of fire report forms.

The afternoon of Wednesday was devoted to two addresses. The first by R. A. Pringle, K.C. **Dominion** Paper Controller, on "Some Aspects of Canada's Forestry Problem." The second by Prof. F. F. Moon, Acting Dean New York State College of Forestry, Syracuse, N.Y. on "The Responsibility of the State in Forest Management." The attendance was most satisfactory and the addresses were listened to with keen attention. An address on "Forest Products in Canada" by Dr. John S. Bates of the Forest Products Laboratories, was postponed until the following morning when it was heard with deep interest.

Thursday morning, February 7th, The Wood Fuel Symposium was opened by the chairman, Mr. Wm. Power. Mr. Clyde Leavitt, Chief Forester, Commission of Conservation summarized the Canadian wood fuel situation along the lines made familiar to readers of the Forestry Journal through Mr. Leavitt's excellent article in the January issue.

#### *Uncle Sam and His Wood Supply*

Mr. A. F. Hawes of Washington, D.C., whose paper appears elsewhere in this issue, spoke with striking effect on the subject, "How the United States has Attacked the Wood Fuel Problem." Brief addresses were contributed by Mr. G. C. Piche, Chief

Forester of the Forest Service, Quebec; Mr. E. J. Zavitz, Chief Forester of Ontario; Mr. G. H. Prince, Director of Forestry Division of New Brunswick, each summarizing aptly the wood fuel problem as it affected his province and telling of the steps taken thus far to head off what promises to be a fuel crisis in the winter of 1919.

The point of view of the wood fuel merchant was taken by Lieut. Col. Jekyl, whose remarks are published elsewhere in these pages and Mr. Guy Tombs of the Canadian Northern Railway undertook to explain

the transportation problem as it affected carriage of cord wood to towns and cities.

The Wood Fuel Symposium concentrated a great many points of view upon a subject of first national importance. It was noteworthy, too, that all speakers dealt with the subject from a most practical point of view and spent no time on any phase of it not related to the nation's immediate requirements. Lt.-Col. Harkom acted as chairman during the greater part of the Wood Fuel Symposium as Mr. Power was obliged to attend another meeting.

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## Forest Conference a Splendid Success

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The history of the Forest Protective Movement in Canada will probably look back upon the Conference organized by the Quebec Forest Protective Association at the Windsor Hotel, Montreal, on Friday, February 8th as one of its chief milestones. Not only were the addresses of a thoroughly practical nature but they were given in an interesting form. Motion picture films helped to vary the programme. Mr. Ellwood Wilson, President of the St. Maurice Forest Protective Association officiated as Chairman, and the business of the day was introduced after a brief address on behalf of Archbishop Bruchesi of Montreal. Attractive papers on various aspects of forest protection were read by Messrs. Forrest H. Colby, Forest Commissioner of Maine; J. B. Harkin, Commissioner, Dominion Parks Branch; G. H. Prince, Chief Forester of New Brunswick; E. J. Zavitz, Chief Forester of Ontario; W. G. Howard, Commission of Conservation, New York; W. C. J. Hall, Superintendent Forest Protective Branch, Quebec; G. C. Piche, Chief of Forest Service, Quebec; Ward C. Hughson, President Ottawa River Forest Protective Association; W. Gerard Power, Presi-

dent, Southern St. Lawrence Forest Protective Association and Robert P. Kernan, President, Laurentian Forest Protective Association.

An unexpected but sterling feature of the day's addresses came through the presence of Major K. E. Kennedy of the Royal Flying Corps, who has seen a great deal of service at the Front, and who was prevailed upon to take the platform and tell the meeting some of his impressions as to the adaptability of the modern aeroplane for forest protection. Major Kennedy proved to be a facile and graphic speaker with a thorough knowledge of his subject. The address, published elsewhere in this issue, will throw a great deal of light upon the problem of utilizing aeroplanes for such civil undertakings as forest guarding.

It is a testimony to the rising tide of public interest in forest protection questions that the large meeting hall was completely filled, many visitors standing about the door for lack of accommodation. No previous meeting devoted to this subject registered more than half such an attendance. Mr. Henry Sorgius acted as Secretary of the Conference and deserves great credit for its successful outcome.

### MEETING OF THE TECHNICAL SECTION

The Annual Meeting of the Technical section of the Canadian Pulp and Paper Association, held at Montreal, was excellently attended and excited deep interest. Dr. John S. Bates and C. B. Thorne were re-elected Chairman and Vice-Chairman. Three new councillors, Messrs. O. Rolland, John Stadler and F. A. Sabaton, were appointed. The afternoon session consisted in reading a paper on the Estimation of Cellulose in Wood by Dr. B. Johnson and W. R. Hovey, (read by Mr. Hovey), Practical Paper Making by J. J. Sullivan. Coated Papers by J. B. Foulis (read by Mr. Stephenson) and a review of the Paper Industry in Canada by A. L. Dawe.

One of the most interesting features of this year's meetings was a symposium of the natural resources of Canada, as applied to the pulp and paper industry. Mr. L. H. Cole of the Mines Branch read a paper on the "Minerals used in the pulp and paper industry." Dr. A. W. J. Wilson, also of the Mines Branch, addressed the Section on "Pyrite in the sulphite industry." This was discussed by Mr. G. D. Janssen of New York, Mr. John Stadler and others. In the afternoon papers were read by Mr. R. H. Campbell, Director of Forestry on the pulpwood resources of Canada, and Mr. A. M. Beale of the Water Powers Branch. Mr. Campbell's paper was discussed by Mr. Ellwood Wilson and others.

#### LT. H. R. CHRISTIE, M.C.

Lt. H. R. Christie formerly of the B. C. Forest Branch has been awarded the Military Cross for heroic action at the front.

#### CHICAGO'S BID FOR TREES

Chicago has entered upon a remarkable forestry scheme. The city is to be completely surrounded by woods, with the exception of the Lake Michigan side. There will be a great half-circle of forest preserves starting from the lake shore to the north, and

running around to the west and south, enclosing the whole suburban area. About 1,000 acres have already been planted, at a cost of \$3,000,000, and \$8,000,000 more is to be spent on the project, under powers granted Cook county by the state legislature.

It is not a mere "reforestation" plan, making amends to nature for the destruction of aboriginal forests. It is an improvement on nature. Most of the area constituting the new forest belt was open prairie land when the white man first saw it.

#### COUNTERACT I. W. W.

Ten thousand soldiers are being sent into the woods of the Northwest as the Spruce Production Division of the U. S. Signal Corps. Their duties are to get out spruce and fir for airplane stock. These men are volunteering from Western National Army camps and from civil life and from other services to counteract the trouble caused by I. W. W. agitation in western lumber camps. A monthly production of 15,000,000 board feet of spruce is required to take care of the extra needs for the aircraft construction program, and small operators are being encouraged to get out rived timbers in order to speed up production. Four New York State College of Forestry students have enlisted in these logging squadrons and have left Syracuse for Vancouver Barracks.

Pennsylvania spent \$2,275,000 in acquiring one million acres of forest land. Due to rise in timber values, this land is estimated to be worth now six million dollars.

In some sections of the Adirondacks convict labor is being employed successfully in reforestation. At Goldsmith's in the Saranac River Valley a gang of fifteen convicts have planted 300,000 trees on State land.



## A Swiss View Of Overseas Axemen

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A Swiss forester gives in the *Journal Forestier* an interesting account of a Canadian lumber camp in France in one of the famous fir forests of the State in the Jura Mountains, la Joux. This is a forest of about 6,500 acres of silver fir of magnificent dimensions—very different from most French forests in which Canadians have been working—the trees being often over 160 feet in height and sometimes 3 feet in diameter. The forest being carefully managed under selection system, or perhaps, we should say,

under a long term shelter-wood system, is supposed to permit a sustained yield of 222 cubic feet per acre, valued at \$50 per acre per year—an unusual figure.

From the description, we judge that the operation is organized like a first-class American logging and mill camp, with both cable and animal skidding and a four-foot circular, with cut-off and trimmer saws, and locomobile to carry the lumber. A stone crusher to furnish material for making the heavy bottomless roads passable alone is an innovation.

## The Woodlands Section

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The organization of the Woodlands Section was completed at a well-attended meeting at the Windsor Hotel, Montreal, Thursday afternoon, Feb. 7th, Mr. Ellwood Wilson presided and the following officers were elected:

President, W. Gerard Power, of Quebec, member of the Canadian Lumbermen's Association; vice-president, Angus McLean, of the Bathurst Lumber Co., Bathurst, N. S.; Both these officers were elected by acclamation with the following board of directors: Thos. Mack, of the Brown Corporation, La Tuque; M. C. Small, of the Laurentide Co.; E. Wilson, of the Laurentide Co.; John Black of the J. R. Booth Co., and F. M. Anderson, of the Shives Co., Limited, Campbellton, N.B.

Mr. F. A. Sabatton, of the Laurentide Co., Grand Mere, gave a stimulating paper on the work of paper mills, especially with regard to the production of newsprint. In this he pointed out the great efficiency in the work of the mills; with better machinery and more perfectly trained men, the increase in the training of the employees having greatly improved the output of the machinery.

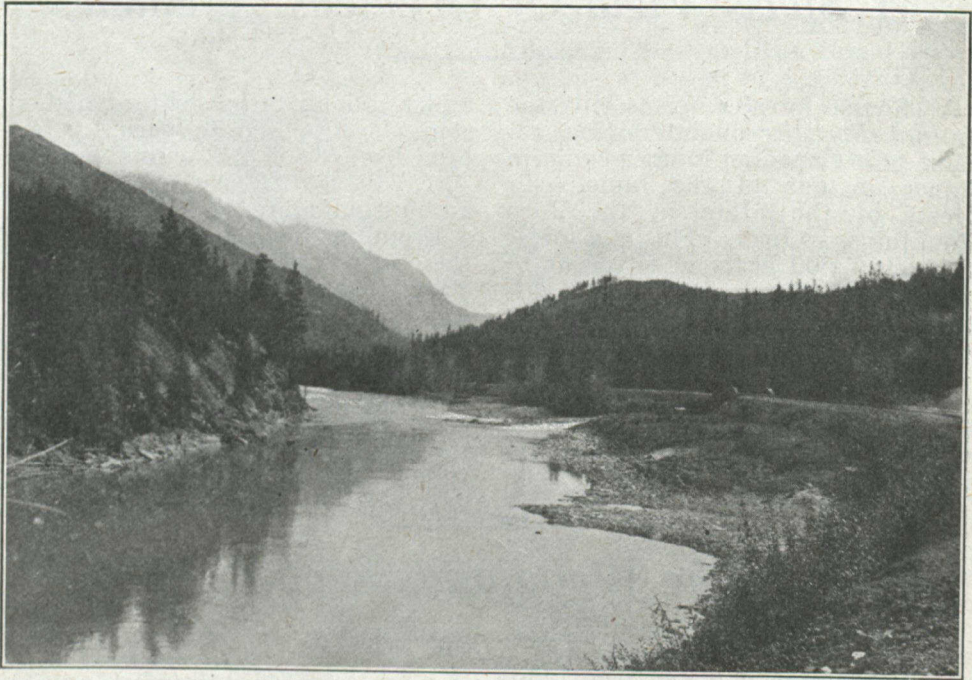
### *Educated in Mills*

In connection with this, Mr. Sabatton pointed out that most of the mills were located so far from large centres of civilization that the work of training employees was a hard one. With regard to this, he showed that of 21 paper machine tenders, who were considered the highest class of skilled labor attached to paper mills, 18 were French-Canadians, who had been educated to the work in their own mills. These men, who, otherwise, would have been lumberjacks or farm hands, but for the training they had received with the Laurentide Co., were now making from \$1,400 to \$1,600 a year, and working an eight-hour day, with all sorts of privileges arranged by the company.

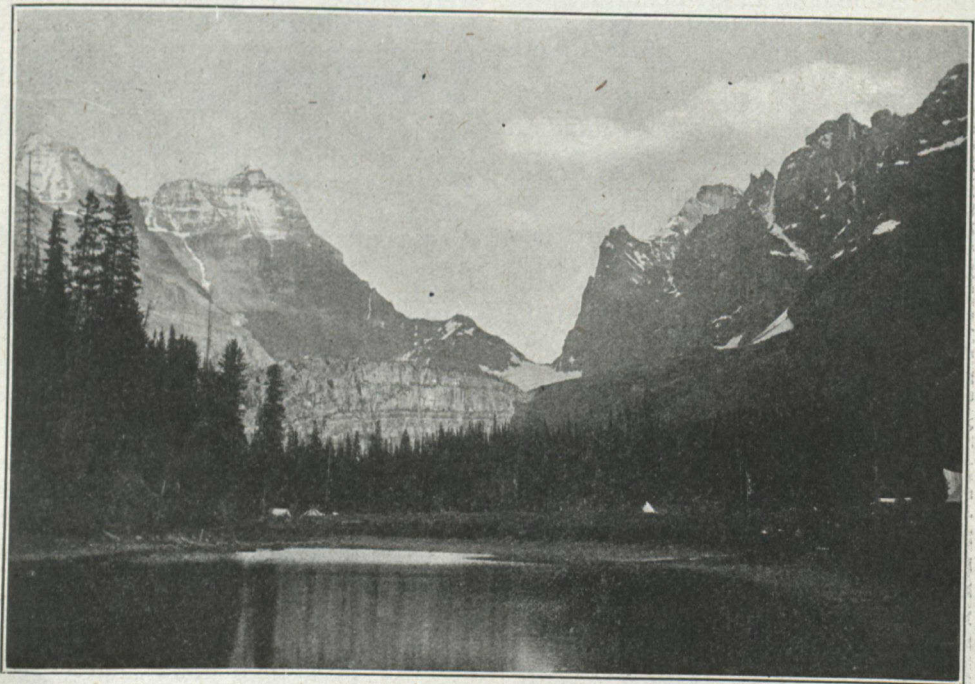
A number of other discussions came up, especially with regard to the use of tractors in lumbering operations, which was discussed by Mr. W. Gerard Power and others.

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Over 14 million dollars have been spent to get rid of the gypsy moth in Massachusetts and adjoining States.



THE KICKINGHORSE RIVER NEAR WAPTA, YOHO PARK, B.C.



MTS. HUNGABEE AND SCHAFFER, TRAIL 24, B.C.



MT. EDITH CAVELL, JASPER PARK, B.C. *Courtesy Dom. Parks Branch.*  
Named in memory of Miss Edith Cavell, the English nurse, who was executed  
by German order.

## More Letters From The Front

Telling of Logging Under Fire, Shell Splinters In Logs, An Indian Fire Ranger As Sniper, Etc.

Canadians working with the Forestry Battalions in England and France have their own points of view of the unique surroundings of war. The following excerpts from letters received by the Director of Forestry, Mr. R. H. Campbell, will doubtless be found highly interesting.

### AN INDIAN RANGER-SNIPER

Some of the most "picturesque" letters which the Dominion Forestry Branch receives from its sixty-odd men overseas are those dictated by Private Matthew Nackaway, an Indian from Norway House, who was previously a fire ranger patrolling a section of country along the Nelson river in northern Manitoba. His commanding officer reports that he and the other Indians attached to the unit are giving very good service. They are employed chiefly as dispatch runners, scouts, and snipers. It is said their ability to creep up close to the enemy posts without being discovered has been of the greatest value to the unit. Private Nackaway was gassed on September 22nd, and was so badly burned by this new form of gas that he was sent to a hospital in England. In a letter to the Director of Forestry, Mr. R. H. Campbell, he describes the effect of this gas as being like that of applying raw mustard to the skin. Private Nackaway is recovering but his lungs still give a good deal of trouble

### COL. STEVENSON IN FRANCE

Lt. Col. H. I. Stevenson, who, with the Fort Garry Horse in France but whose work in civil life is that of Supervisor of the Riding Mountain Forest Reserve, in Manitoba, under the Dominion Forestry Branch, has recently written the Director of Forestry to the effect that last sum-

mer he was loaned to the Royal Engineers and took charge of a forest, the prize hardwood forest of France—erected mills, etc. and ran it for about five months with about 3000 men. Col. Stevenson says it was a good experience, a sort of post-graduate course in forestry, as this particular forest is the one in which all the Indian Forest Service spend their time when in France finishing up their course.

### FLYING A "BUS"

Lieut. D. A. MacDonald, Royal Flying Corps, England, formerly in the Dominion Forestry Branch as Forest Assistant, Bow River Forest Reserve, in writing to Director R. H. Campbell, says: I completed a six weeks' theory course on Flying Meteorology, and practical Wireless, Machine Gunnery, Engines, Rigging and Artillery Observations, at Reading about three weeks ago and am now undergoing higher instruction in these and learning to fly a "bus." It is the most interesting game I can think of and certainly a wonderful technical education for no cost to yourself. I have felt settled since I finally got started in the R. F. C. which I haven't been since this war started. The R. F. C. has a wonderful equipment for instruction and also is perfectly organized. The average cost to the Government for qualifying a pilot from the time of his appointment until his graduation is high. The largest item of this, of course, is damage to machines due to crashes. I expect it will be well on in January before I get my wings since we have many different machines to fly for 20 hours solo and the weather is too "dud" in the winter months to get in much flying. At present the weather is fair for flying about two days a week. Mr. Finlay-

son, Forestry Branch Inspector for Alberta, asked me to give him some news of operations, etc., in my work. I don't know whether he meant Forestry work or Flying. Certainly I think that the new machine would be a wonderful acquisition to the Forestry Branch for reconnaissance and photography work. I am not permitted to discuss its capabilities but I can assure you that it is the fastest machine *in the air*, and can travel and climb tremendous distances with a passenger and *some* load of bombs. From the Crowsnest to the Brazeau shouldn't take more than two and a half hours.

#### SHELL FIRE IN FORESTS

Major W. A. Lyndon, France, formerly Chief Fire Ranger in the Crowsnest for the Dominion Forestry Branch, in acknowledging the quarterly bulletin sent by the Branch to officers now in the field, writes: "I have been for the past two months living on the battle ground of France. There is not a building standing within ten miles of us. Where the villages stood there is nothing left. It is a sight to see but gets very tiresome to work in day after day among nothing but wreck and ruin. We went through a forest today, that is, what once was one. There was not a foot of ground that had not been turned over by shells, not a tree left standing, only a lot of stumps split and shattered—no protection whatever. It reminds me a great deal of what it is like after one of our big bush fires, only ten times worse.

#### LOGGING UNDER FIRE

Quarter Master Sergeant S. R. Clark, Canadian Forestry Corps, France, formerly Forest Supervisor of the Brazeau Forest Reserve of the Forestry Branch, Department of the Interior and brother of G. H. Clark, Dominion Seed Commissioner, writing to the head Office, Ottawa, says: I find the French methods of forestry very interesting. This forest has been under Government supervision for many years and the subdivision into compartments based on soil and the resultant type is definite proof of

successful management. The organization of course is strictly military and prior to this war it was sufficiently trained to go to the front as a unit. Only veterans are in charge now. This forest which was cut over by the Huns about last February consisted of oak, 60 per cent.; beech, 30 per cent.; birch, 5 per cent. and the remainder blue beech and ash. Lieut. Tilt (formerly attached to the Forestry Branch in Alberta) made an examination of the area during early summer but owing to the large amount of felled trees which the Huns cut and were unable to utilize before their retreat he found a reliable estimate difficult to make.

Another interesting part of our location here is the daily serenade we receive from Fritz. To date they have caused very little inconvenience other than necessitating a transfer of the crews while the shells are coming over. Of course this relieves monotony and as we have completed the cleaning up of this forest it is probable that we will not be located so close to the line when we move again as it is not customary for non-combatant units to be placed so close to the firing line.

#### SHELL SPLINTERS IN LOGS

Captain A. W. Bently, 48th Brigade, France, formerly of the head office of the Forestry Branch, Department of the Interior writes: "Having spent nearly two years out here with the guns I was very interested to read about the French Forests. I have never seen a French forest yet except from the window of a railway carriage whilst going on leave (three times). The remains of a French forest after our high explosive shell has done its work, is only fit for firewood and that is so full of splinters that a saw cannot be used. Wedges are the only means of splitting up the pieces.

I hope to get back some day to where these forests are still intact and unscathed and see one. All our material, beech slabs mostly, is cut up and sent up fresh from the stump. Small pine poles are sent up as gun pit props.

### IRRIGATING TREES

Sergt. B. M. Stitt, Canadian Forestry Corps, France, formerly Chief Fire Ranger under the Dominion Forestry Branch at Pas, Manitoba, in a recent letter to the Branch says: We are still hard at work over here doing our best to supply the growing needs of the front line trenches. We have been cutting white poplar this last two months, most of it going into 2½ in. road plank.

About one-third of the total acreage in the valley we are now working is under reforestation and it is highly interesting to note the growth and system of planting the young trees. We have cut some 5 ft. and over at the stump. Most of the trees are planted along creeks and between every row of trees a ditch is dug which is kept full of water regulated by small gates or weirs.

## Finding New Uses For Our Woods

BY DR. JOHN S. BATES

*Superintendent, Forest Products Laboratories of Canada. An Address Delivered Before The Canadian Forestry Association, Montreal, February 7th, under title "Forest Products in Canada."*

My first intention was to survey the whole field of forest products as briefly as possible. However, this has already been done in a paper ‡ read before the Canadian Society of Civil Engineers, reprints of which are available for anyone interested. It seems unnecessary to repeat this detailed discussion, and I shall therefore touch on only a few points which stand out in prominence before those who are concerned with the welfare of our forests.

#### *Wood Exports vs. Munitions*

We must not lose sight of the significance of wood in Canada's list of natural resources. Forest products are next in value to agriculture, the income being something over \$200,000,000 annually. In studying pulp and paper industry now brings into the country a larger income than any other manufacturing industry with the exception of munitions and is an outstanding example of an export business yielding real money in

distinction from war business largely based on domestic credits. At the present time it is out of the question to ship large quantities of wood products across the water and we see Europe being drained of its limited supply to feed the war machine. In the future the Empire will turn to Canada for its supplies, particularly for the valuable softwoods which fortunately predominate in this northern climate.

In considering the economies of forest products there are certain methods of utilization which are the main units and which are self-contained, such as lumber, pulp and paper, and wood distillation. The tendency has been to start with round wood from the forest for each process, so that control can be more certain and each plant can be independent. The possibilities for economy by co-ordinating one industry with another are becoming more apparent every day. The expansion of the main industries will bring about these new methods by very reason of their size, so that there will be enough wood waste at one centre to serve as raw material for a by-product plant. Already the kraft

‡ "Present and Possible Products from Canadian Woods" by John S. Bates, Forest Products Laboratories of Canada, 700 University Street, Montreal.

pulp plants in the east convert large quantities of slabs and edgings; the saw mill waste in British Columbia offers opportunities for processes outside the range of the lumber industry. The practical requirement is that utilization must yield a financial profit. The close utilization in Europe is out of all proportion to Canadian conditions and we must wait for an increase and spreading of population. The rising cost of wood in Canada is in many ways a blessing and it is only right to place a real value on wood as it stands in the forest. As more and more by-product industries become feasible, the utilization of waste will bring true economy by throttling the drain on our forest supply.

#### *A Permanent Forest*

Looking at the problem in a broad way, the protection and reproduction of the forest overshadows all other duties. The most effective utilization of the wood and waste that is now coming out will not counterbalance the loss of forest wealth and the aim should be to build up in Canada a permanent and ever-expanding forest. It is to the foresters, the lumbermen, the federal and provincial governments that we must look for the carrying out of this policy. The public may well take a renewed interest in fire protection, forest reserves, tree planting, more rigid cutting laws, and measures for natural reproduction. Conditions are favored by the ownership of such large proportions of the forest areas by the governments.

Logging is such a definite proposition each year that it is hard to change the methods so long in use. We know that about 25 per cent. of the tree is left in the woods in the form of limbs, tops, stumps, etc. In general it is not likely that new processes will go far towards saving this material, because there is already so much by-product wood within easier reach at the manufacturing plants. Burning of slash in the wet seasons appears to be the main duty at present in order to curb forest fires.

#### *New Conditions Ahead*

The lumber industry has had a long history in Canada, but now faces new conditions. The manufacture has been so simple and the competition so light that lumbermen have not been forced to introduce radical changes. Although the plants are widely scattered and the number of specially trained men is small, it is not going too far to say that the lumbermen must get together for an intensive study of their industry. No outside forces can accomplish what they themselves can do by comparing the mechanical and physical properties of the different woods, extending the use of a species where this is legitimate, eliminating decay in lumber yards, kiln-drying and finishing woods to meet special requirements, selecting timber on the basis of quality and welcoming the co-operation of industries and experts for the conversion of waste. Saw-mill waste amounts to about 40 per cent. of the original tree and consists of slabs, edgings, trimmings, sawdust, bark, shavings, seasoning waste, shaping waste and culls. There are many chances for extending the by-product manufacture of small wooden articles by mechanical processes. A new development in Canada is the chipping and baling of saw-mill waste for shipment to chemical pulp mills. Spruce and white pine have been the main-stays of the lumber industry; Douglas fir is now coming to be recognized as Canada's foremost structural timber and the immense supplies in British Columbia will be a source of great wealth.

#### *Openings for Enterprise*

The pulp and paper industry is enjoying a development which is without parallel among the wood-using processes of the country. The export figures is now over \$50,000,000 annually, being half of the total export value of all forest products. The restrictions on pulpwood export and the duty free market for pulp and paper in the United States have rapidly increased manufacture within the country and the ratio is improving every year. From the simple ground-

wood process more and more attention has been turned to unbleached sulphite pulp, bleached sulphite pulp, kraft pulp, newsprint paper and high-grade papers. The production of soda pulp is still only 21 tons per day while the imports amount to something like \$500,000 per year, and there seems to be an opening for the utilization of some of the poplar which troubles the forester in connection with forest reproduction. Waste sulphite liquor still carries large quantities of wood material down the rivers but serious attention is being given to the possibilities of recovering ethyl alcohol, tanning solution and binders. Products of surprising variety can be made from kraft pulp and it is likely that paper twine, paper textiles and leather substitutes will be on our list of forest products in due course.

#### *Acetone for War Uses*

Among the distillation processes the destructive distillation of hardwoods is of main importance in Canada. It is gratifying that manufacture is carried beyond the stage of crude products and that the specially refined and derived products are made in Canada for both local and export trade. The process has been vital in that it has supplied practically all of the methyl alcohol and acetic acid, so essential in the scheme of modern civilization. The war has given a new stimulus by reason of the tremendous demand for acetone as a solvent in the manufacture of cordite, the well-known British propellant explosive. This same pressure has introduced in Canada new chemical processes for acetone and acetic acid which may have a serious effect on the distillation of hardwoods. While hardwood distillation is rather crude, it survives by reason of the variety of useful products—wood alcohol, ethyl acetone, formaldehyde, acetic acid, acetic anhydride, acetone, acetone oils, charcoal, creosote oils, etc. An important development is the Seaman process now established in the United States for the distillation of hardwood sawdust and finely divided mill waste.

#### *Work of the Laboratories*

In closing this brief discussion of a large subject I beg to refer to the work of the Forest Products Laboratories of Canada. As you know we are concerned with the varied problem of wood utilization. The fundamental basis is a study of the mechanical, physical and chemical properties of Canadian wood species. There are also investigations of processes and it is clear that many field studies will have to be made. In addition to the present Divisions of Timber Tests, Timber Physics, Pulp and Paper and Wood Preservation there is large scope for a Division of Lumber to properly serve the lumber industry in a technical way. It is impossible to talk of expansion under present war conditions, but it is right to plan. In playing a part in the better utilization of Canadian woods it is clear that we must have the full co-operation of foresters, as well as lumbermen and all others concerned with the handling of wood. There is a growing need for more detailed knowledge of our forest resources. Methods of utilization now known could in many cases be applied if there could be more discussion and a closer touch between woodsmen and process men. Foresters have raised the problems of punky poplar, balsam fir and birch and the utilization of hardwoods in connection with reproduction of softwoods. These are difficult questions but some action may follow from a better understanding of the situation. There is some indication that the large proportion of soluble matter in the decayed poplar may yield products of value. An attempt is being made to grind hardwoods for mechanical pulp.

#### **WALNUT SCARCE FOR GUNS**

Black walnut, which has always been the favorite wood for gun stocks on account of its failure to splinter badly when struck by a bullet or bit of shell, is extremely scarce at present. Birch and maple are being tried out by producers of hardwood lumber for this purpose.



## Evergreen Snow Fences

BY J. E. LONG

*Editor, Canadian Government Railways Employees Magazine, Moncton, N.B.*

### Praiseworthy Action Taken By Government Railway In Safeguarding Tracks For Winter Traffic.

Passengers travelling over the Canadian Government Railways are frequently heard commenting favorably on the fine appearance of the beautiful spruce hedges which line the right-of-way between Campbellton and Bathurst. To the traveller the appeal is purely to the esthetic sense, and the dense growth and well-kept appearance of these hedges rest the eye and captivate the sight in spite of the enchantment of the many natural beauties of mountain, bay and forest, with which the region is so generously adorned; but to the railway man they mean more than a decoration, as they are utilitarian as well. Here is the beautiful combined with the useful in the highest sense.

Primarily these hedges were designed to protect the Railways' tracks from the drifting snow in winter time; that they have grown beautiful is due to the great care with which they were planted, and tended by the sectionmen, and to the mellowing influence of the passing years. Now the Railway has natural snow fences, serviceable, efficient, beautiful, a combination well planned and patiently perfected.

To James Patterson, of Campbellton, retired roadmaster, is due in no small measure the credit as the originator of this improvement. In a recent interview, Mr. Patterson gave to the writer the following interesting information:

"The winter of 1887 was most severe, the snowfall was very heavy, and the high winds almost continuous. My men and I spent many days and nights endeavoring to keep the tracks clear of snow, so that the

trains might not be delayed or the cuts blocked with the heavy drifts. We did the best we could with the snow-fighting apparatus we had, but our best efforts were but feeble ones, and after some of the heaviest storms our wooden snow fences were completely buried, and the cuts snowed up full.

### B. C. SPRUCE PRODUCTION

Recently the British Columbia Government passed the following Order-in-Council relating to greater spruce production in the province:

That the Minister of Lands be and is hereby authorized and empowered

(a) To forthwith arrange with the Imperial Munitions Board for the immediate logging of aeroplane spruce upon all areas of vacant Crown Land that may be judged suitable for the purpose by the Department of Lands, as well as upon Coal Leases, Coal Licenses and Mineral claims to which Crown Grant or Surface Rights has not been issued.

(b) To call upon all holders of Crown Timber held under License or Lease which is judged by the Lands Department to be suitable for the purpose to proceed immediately with the logging of aeroplane spruce and in default of compliance the Minister shall instruct the Department of Lands to arrange for such logging in co-operation with the Imperial Munitions Board.

(c) To arrange with the Imperial Munitions Board on equitable compensation to be paid for timber so cut from any license or lease.

## Forests in Canada's Arctic

In an article in the Geographical Review by R. M. Anderson, giving an account of the explorations in the Canadian Arctic coast, the following data regarding "timber areas" are given:

"The northern limit of spruce trees on the Coppermine River is about 20 miles from the coast, although some stragglers are found growing 5 to 10 miles from the coast on Naparktokuok Creek, a few miles east of the river. Willows of good size, and from 10 to 15 feet high, are found in many places north of the tree line, and persist until they dwindle to small ground-creeping shrubs on the northern islands and wind-swept mainland coast.

"To the west there are no trees anywhere near the coast until we come to Franklin Bay, where we find spruce of fair size 10 or 15 miles inland, in the valley of Horton River. Spruce comes rather close to the coast on the Anderson River south of Liverpool Bay. Still farther west we find the great northward extension of timber in the Mackenzie delta, fair-sized trees occurring northward nearly to Richard Island about 150 miles north of the Arctic Circle.

"On the Horton River, the Coppermine River, around Dismal Lake, and to a less extent farther west, we often noted the large proportion (in some places 90 per cent.) of dead spruce trees near the northern limit of timber. There seemed little evidence of fire destruction, and the explanation that the northern regions are becoming colder and the vegetation retreating seemed inconclusive. On one of our winter trips Mr. Johansen accompanied a sledge party southward to the timber-line on the Coppermine River and made a careful study of conditions. He found that practically all the dead trees showed traces of the ravages of bark beetles, three species of them being found."

### VON ALVENSLEBEN SOLD OUT

The case of the Red Cliff Land & Lumber Company vs. Alvo von Alvensleben has been before the British Columbia courts for almost two years but the end is now in sight. Alvensleben a German of high lineage who was in business in Vancouver is now interned at Salt Lake City having been located at Seattle for many months immediately previous to the United States entering the war. In 1911 he bought a large area of timber from the plaintiff company, the purchase price of which was in the neighborhood of \$2,200,000. At the outbreak of the war there had been paid \$1,700,000, and the original action was for foreclosure because of the final amounts owing under the agreement and also for interest. The application for fore-closure was abandoned because it would have been in the nature of a forfeiture and the action just decided was for a declaration of amounts due as a first lien against the property; that the property should be sold and that the plaintiffs should be permitted to bid on it at the sale. This the court allowed.

### NEW OFFICERS C.S.F.E.

The following officers were elected at the Annual Meeting of the Canadian Society of Forest Engineers at the University Club, Montreal, Wednesday, February 6th.:

President, Ellwood Wilson.  
Vice-President, J. H. White.  
Secretary, Clyde Leavitt.

The meeting was a most successful one in every respect. Mr. W. F. V. Atkinson, Forester of the Spanish River Pulp and Paper Mills, Ltd., gave an excellent paper which will be reproduced in the next issue of the Forestry Journal.

# STAG

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## Trees and National Character

Alexander von Humboldt has written, in his "Views of Nature," I think, that it is the vegetation of a country which produces the first and most lasting impression upon the mind of an observer. To credit that assertion, one must stop and reflect a moment. The more careful the consideration the more likely will one be to recognize the truth of Humboldt's statement.

In the cooler parts of the globe we have well marked contrasting groups of trees which grow in diameter by annual additions of new wood outside of the old wood and immediately under the bark, namely the broad-leaved deciduous trees—the oaks and hickories; and the trees which, in general, shed their leaves so slowly that they are called persistent-leaved trees, as the pines and spruce, in which the new leaves are on, before the old are off. At any season of the year one can hardly fail to observe the differences of appearance between an oak and a pine. One might almost say that they had but little in common beyond the fact that both were trees, so far as external appearance revealed. If, however, the view point were changed to a tropical region, a new type of tree would claim our attention. The simple beauty of the palms would attract us at once. To the palm we might add the tree fern, which though wholly unlike the palm in its structure and methods of reproduction, possesses a marked general resemblance in form, *i. e.*, in shape. The year through, the tropical forest would be perpetually evergreen. Here there are three distinct types which force themselves upon our notice at once.

### Tree Impressions

In addition to these forms of deciduous leaved and "persistent-leaved" trees, there would be the topographical setting in which we found them, but a moment's thought will convince that it is the trees and

not the setting which produces the permanent mental picture, unless the topographical settings are different—as a winter street scene and a winter river view. But place both of our northern tree types on the same setting, and no matter how striking it would be, the trees would be the first to claim the observer's notice.

The exuberant growth of the tropics, produces one mental impression and the stern, harsh simplicity of a northern pine, or spruce forest, another each equally abiding, though quite different in kind.

So much for the scene, in mass—the impression made, we may say, upon the ordinary observer. Beyond and deeper than this, however, are the sensations awakened in those who observe more minutely.

The "red-blooded man," who camps annually in the woods for the love of it, will recognize that his Camps in the pine or spruce forests differ in his memory from those made in the broad-leaved forests. This is especially true if he thinks of his winter camps, where he has a sense of protection under the evergreen foliage of the pines and spruces that is wholly wanting in the leafless forests of the broad-leaved trees. The passing storm has in each a different note. The bending snow-laden branches of the evergreen tree is a picture quite other than the rigid branches of the leafless tree, as but little snow can remain on the latter.

### The Pine Woods Camp

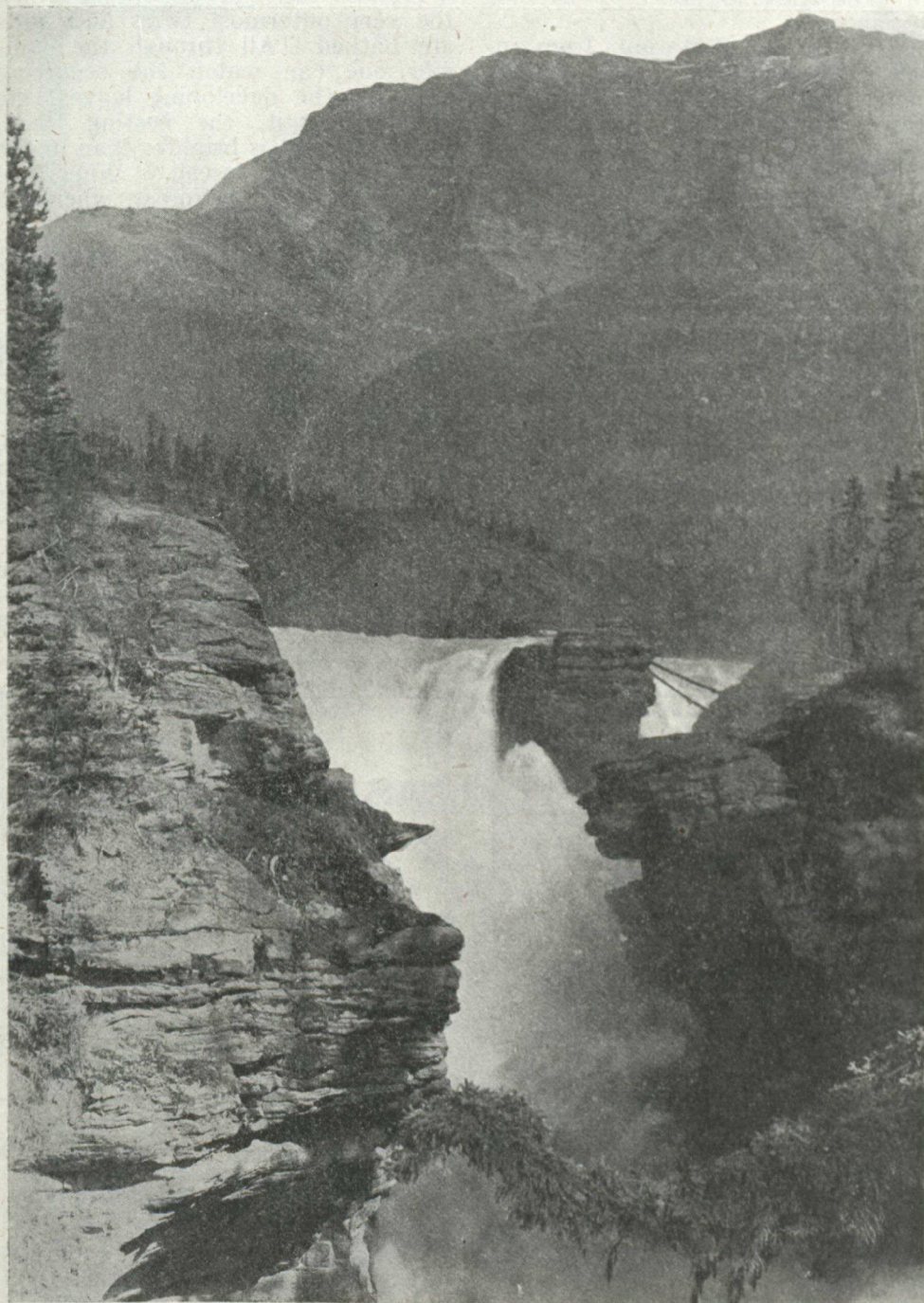
Service recognizes finely the calm content of the pine woods camp, and describes it as only an outer, can:

"Here by the campfire's flicker,  
Deep in my blanket curled,  
I long for the peace of the pine-  
gloom

Where the scroll of the Lord is unfurled.

And the wind and the wave are silent,

And world is singing to world."



ATHABASKA FALLS, JASPER PARK

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The real breath of the north, where the pine tree thrives, is in that utterance.

Parkman, the historian, from intimate knowledge of winter in the pine woods of the north, actually pictures the scene before one in a few graphic lines, thus: "Lakes and ponds were frozen, rivulets sealed up, torrents encased with stalactites of ice; the black trunks of the pine-trees were beplastered with snow, and its heavy masses crushed the dull green boughs into the drifts beneath. The forest was silent as the grave." And now:

"A song to the oak, the brave old oak,  
Who hath ruled in the greenwood long."

The evergreen forest most appeals to one in the winter, when the deciduous trees are bare, resting in the semblance of death; but in the early spring when the sap flows again and life becomes manifest, I turn to the

broad-leaved forest for recreation, hope, and the renewal of life in which the very outermost twigs and buds are bathed. All through the summer one can watch the occurring changes: the developing leaves, the maturing fruit, the nesting birds. Even the light is brighter than in the dark evergreen forest. When autumn comes in the forest, when the leaves are

"Slain by the arrows of the early frost,"

nature caps the climax of her scenic glories in the coloring of the dying leaves, so that our last vision and final memories of them may be the brightest of the year.

To a visitor from the old world, where there is no such autumn coloring as here, the appearance of our scarlet oaks and our maples is unforgettable.

With that other type of trees, the palm and the tree fern, "Steeped in the Sun." We here have but little

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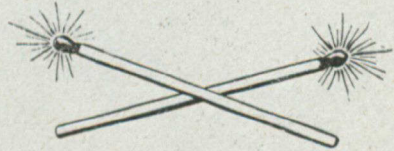
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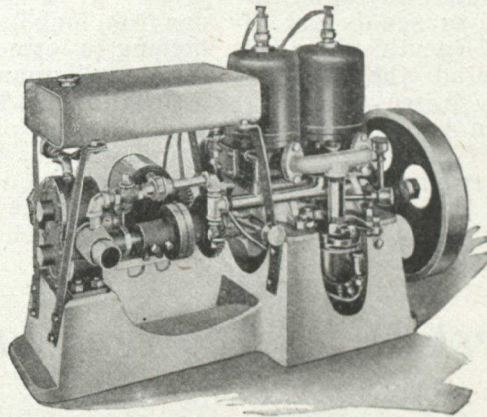
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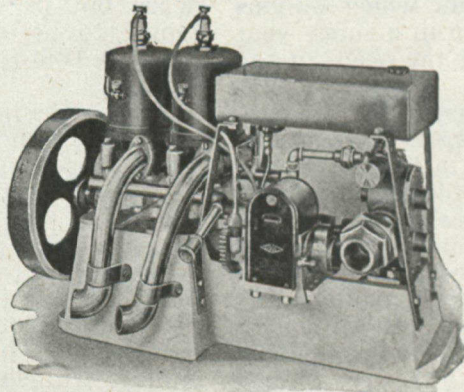
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to do, though the palm is scantily represented on our southern coast. I have watched the cocoanut palm, with its restless foliage swaying in the ever present land, or sea breeze of the ocean shore. But this has not altered in my mind the idea of tropical rest, for I see that the motion is produced by a force outside of the palm. Nor can I escape the idea that the tropics, where the palm flourishes is the land of little achievement; where God has been too

kind for man's own good. True, this has little to do with the trees themselves, for their activities may be great. It is possible, however, for one from long habit to look at trees as helping to form human habits and so forming human history. If such association can be tolerated, it is easy to look upon all tropical life, plant and animal, as lacking the vigor and helpful productiveness of the land of the oak and the pine.

J. T. R. in "Forest Leaves."

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## *Forests, The Keystone of War*

BY PROF. J. W. TOUMEY,

DEAN OF YALE FOREST SCHOOL

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"Victory is with the army whose country has the greatest iron mines and smelters, the largest area of waving grain and abundance of wood. Of all the products of the soil upon which the very life of a nation depends in times of war, wood is the only one that cannot be rapidly increased under necessity and by the employment of adequate labor. Therefore, provision for adequate national defence necessitates the maintenance of vast reserves of timber throughout the nation, reserves from which billions of feet can be drawn in a single year if necessary to meet the needs of the army and navy.

A sane and conservative development of forest resources to meet the needs of the nation in times of peace necessitates a constantly increasing intensity of management of all absolute forest land and the building up and maintenance of an enormous forest capital. Please remember this forest capital can be drawn upon in times of war and may determine the fate of the nation.

England has for centuries neglected her forests and for generations has obtained most of the wood used in her buildings and industry from beyond the sea. The stress of war found her with a meagre forest

capital, and New England's sons—many of them New Hampshire boys, are today felling the remnant of the forests of that proud country that the empire may live. When the sombre clouds of war are lifted from Europe's battlefields and peace again rules over the earth, England's lesson, learned in this bitter strife, will be taken to heart by her people and forests will clothe her idle lands. A forest capital, far beyond that of former days, will not only add to her economic development in times of peace but be developed and maintained, to better insure her against vital needs in times of possible future strife.

France has been more far-seeing in her forest policy, and, next to Germany, has been the most successful nation in Europe in the economic development of her non-agricultural lands for the production of timber. When the war broke out she had a forest capital that under the necessity of strife could be drawn upon for vast supplies of wood necessary for mining, transportation and trench construction, all vital to her very existence. If the French had had no forests at the outbreak of the war, France would be devastated today and the nations of middle Europe feasting in the halls of Paris.



**10 MILLIONS FOR PLANTING**

No limit will be set this year on the number of forest tree seedlings by the Pennsylvania Department of Forestry for free distribution. Anyone who wants to plant trees this spring may have them for the asking. The only condition being that application for less than five hundred trees will not be filled; applicants must pay for packing and transportation, and the trees may not be sold, but must be actually planted in Pennsylvania for reforestation. No applications can be filled for ornamental trees.

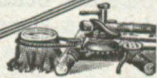
The State Forest nurseries have

raised more trees last year than ever before; but so many of the foresters have enlisted, and so few laborers are available, that the number to be planted on the State Forests probably will be even less than last year. Over 10,000,000 trees are ready to set out next spring, and as many more are in the nurseries, but are too small to plant this year.

The stock available for free distribution is almost all three years old, and includes white pine, Scotch pine, red pine, pitch pine, Norway spruce, European larch, Japanese larch and red oak.

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### FOREST BRANCH ROLL OF HONOR

The British Columbia Forest Branch during the past three years has furnished a large percentage of recruits for service overseas, the staff in all parts of the province having frequently been reduced to skeleton proportions by the frequent enlistments. Casualties have been many and some of the wounded foresters have already been returned from the front as unfitted for further service. Fourteen of the gallant fellows will return no more, having given their lives in the cause of freedom. The honor roll to date is as follows:

Capt. J. B. Mitchell, M.C., Lieut. J. R. Chamberlin, F. B. Wheatley, A. J. Pickup, V. K. Wood, A. Rees, W. A. Boulton, P. Johnston, V. A. Harvey, N. F. Murray, R. F. Irving, P. McLennan, G. R. Malcolm, and Mr. Ash.

Lieut. J. R. Chamberlin, of the Royal Flying Corps, was the only officer whose remains were sent back to Canada for burial.

### LAUNDRY BILLS AND FORESTS

Who would think of attributing increased laundry bills to the forest? And yet acetic acid, so necessary to the cleaning of linen, is indirectly a forest product and has grown remarkably scarce.

The U. S. government needs every ounce of acetone that acetic acid can furnish.

"Part of the reason why some laundries have advanced the price to four cents each for collars became apparent on Saturday," remarks the Philadelphia Ledger, "when it became known that the United States Government was likely to take over control of the acetic acid industry on very much the same lines which have been applied in the case of ammonia.

"It is understood that the Government, in the interest of obtaining an adequate supply of acetone for war purposes, has undertaken to control the distribution of acetic acid throughout the country, and that word to that effect, if it has not al-

ready been circulated among the trade, will be sent out this week. Acetic acid has long been a standard chemical in the cleaning of collars and other white goods.

A minor effect is likely to be seen in the production of benzoates, notably benzoate of soda; which is largely used by some manufacturers of foods. Acetic acid is largely used in the manufacture of synthetic benzoates, and Federal control may cut down the production."

Hardwood distillation yields raw pyroligneous acid, wood gas and charcoal from beech, birch and maple. From the tar of the pyroligneous acid come wood tar, acetate of lime and wood alcohol. From the acetate of lime, acetic acid is made.

From acetic acid, acetone is made and used in manufacture of the high explosives, known as cordite and lyddite. Just now there is an enormous demand for acetone in manufacture of cordite.

Wood alcohol is various degrees of purity enters into the production of aniline dyes, formaldehyde, photographic films and smokeless powder.

### TROPICAL FORESTS

There are at least two very large forest regions in the tropics. These are the Amazon region of South America and the Indo-Malay region of southeastern Asia and adjacent islands. The forested region of the Amazon River basin comprising an area of 1,600,000 square miles is the largest in the world. The forested area of Borneo Sumatra the Philippine Islands the Malay Peninsula and Burma is roughly estimated to be not less than 500,000 square miles, or nearly as large as that of the United States. Thus the forested area of these two tropical regions alone comprises more than 2,000,000 square miles. Contrary to the usual opinion it is claimed that tropical forests are not all composed of hard woods fit only for special purposes, but that they have a much larger percentage of soft and medium hard woods which it is quite practicable to develop economically.

# Useful Forestry Books

## FERGUSON—FARM FORESTRY

By John Arden Ferguson, A.M., M.F., Professor of Forestry at the Pennsylvania State College. VIIIx241 pages. 5¼ by 8. Many full-page half tones. Cloth, \$1.25 net.

Covers especially the subject of forestry as applied to the farm and woodlot. The subject is treated from the broad standpoint of the woodlots in the great plains and prairie regions, as well as in the more eastern regions.

## KINNEY—THE DEVELOPMENT OF FOREST LAW IN AMERICA

By Jay P. Kinney, A.B., LL.B., M.F., Chief Supervisor of Forests, United States Indian Service. XVIIIx275 pages. 6 by 9. Cloth, \$2.50 net.

This book discusses the chronological development of legislation directed to the preservation of existing forest resources, reforestation of cut-over, burned-over areas, the extension of forest areas, and the systematic management of forests for productive purposes.

## KINNEY—THE ESSENTIALS OF AMERICAN TIMBER LAW

By Jay P. Kinney, A.B., LL.B., M.F. XXIXx279 pages. 6 by 9. Cloth, \$3.00 net.

This book contains information that will prove of inestimable value to anyone who desires to ascertain easily and quickly the fundamentals of American timber law, or who needs reference to court decisions to support a well-founded view as to the law upon any particular point.

## WOOLSEY—FRENCH FORESTS AND FORESTRY. Tunisia, Algeria and Corsica. With a Translation of the Algerian Code of 1903.

By Theodore S. Woolsey, Jr., M.F., Assistant District Forester, United States Forest Service, 1908-1915. XVx238 pages. 6 by 9. Illustrated. Cloth, \$2.50 net.

Embodies the result of a study of the more important phases of forest practice in Corsica, Algeria and Tunisia. The author's experience abroad includes not only continental Europe and the French Dependencies (which latter are described in this book; but also forest management in British India as well.

## BRYANT—LOGGING. The Principal and General Methods of Operation in the United States.

By Ralph Clement Bryant, F.E. M.A., Manufacturers' Association. Professor of Lumbering, Yale University. XVIIIx590 pages. 6 by 9. 133 figures. Cloth, \$3.50 net.

Discusses at length the movement of the timber from the stump to the manufacturing plant, and the chief facilities and methods for doing this; with especial reference to logging railroads.

## TAYLOR—HANDBOOK FOR RANGERS AND WOODSMEN

By Jay L. B. Taylor, Forest Ranger, United States Forest Service. IXx420 pages. 4¼ by 6¾. 236 figures. Flexible Binding, \$2.50 net.

Prepared as a result of the author's experience in field work of the United States Forest Service. Solves problems which confront a forest ranger in government, state and private employ. The suggestions offered will also be found of use to others whose work or recreation takes them into rough or unsettled regions.

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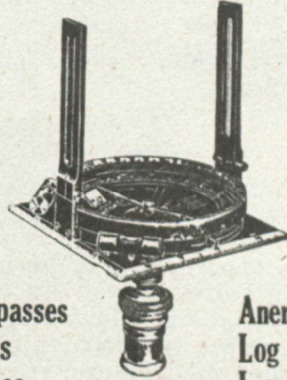
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This book presents both the details of practice, and the fundamental principles that control success and failure in the economic production of nursery stock and the artificial regeneration of forests. It explains the why as well as the how.

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## *Chapter Headings of This Book:*

- Part I. Silvical Basis for Seeding and Planting.
    - Chap. I. Definitions and Generalities.
    - II. } The Choice of Species in Artificial Regeneration.
    - III. }
    - IV. The Principles which Determine Spacing.
    - V. The Principles which Govern the Composition of the Stand.
  - Part II. The Artificial Formation of Woods.
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    - X. Preliminary Treatment of Seeding and Planting Sites.
    - XI. Establishing Forests by Direct Seeding.
    - XII. to XV. The Forest Nursery.
    - XVI. to XVII. Establishing Forests by Planting.
- xxii+454 pages, 6 by 9, 140 figures. Cloth, \$3.50 net.

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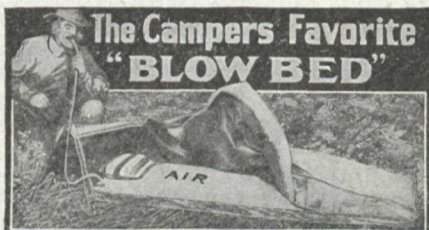


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