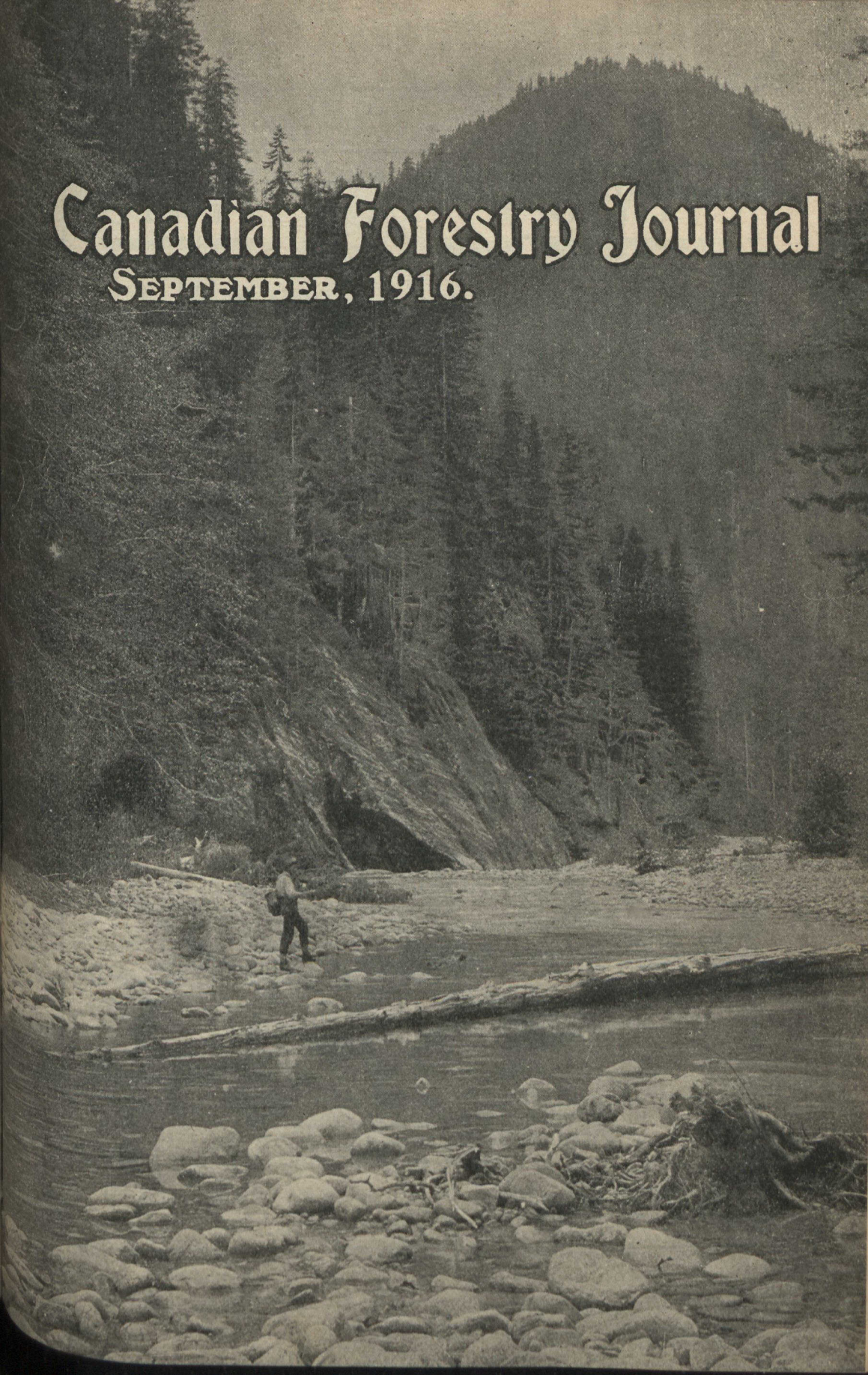


# Canadian Forestry Journal

SEPTEMBER, 1916.



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# Canadian Forestry Journal

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## How Firewood is Utilized in European Forests



(Courtesy of "Forest Leaves.")

### PEASANT CARRYING FAGGOTS HOME FOR FUEL.

A mixed beech and oak forest typical of Belgium, France and central-west Germany. Competition is keen for the privilege of collecting the branchwood, and as a result the forests are clean and the forest hazard reduced to a minimum.



(Courtesy of "Forest Leaves.")

### A SUPPLY OF WOOD FOR SUNDAY.

Peasant women of western Germany returning from the communal forest with pine branchwood which they were allowed to gather on Wednesday and Saturday afternoons.

# How to Plant Trees in the Fall

## Expert Instructions on Time to Plant, Selection of Trees and Precautions in Tree Removals

By B. R. Morton, B.Sc.F.,  
Dominion Forestry Branch, Ottawa.

The planting of any tree is best done at a time when it is making no growth, either early in the spring before the buds open or in the autumn before the ground freezes. Evergreens, such as the pines or the spruces, can be planted with more or less success during the summer months, but it requires extra precautions to be taken and should be avoided if possible. Broad-leaved species such as maple and elms should never be planted when in leaf, that is, while the leaves are still green and active. It is not necessary to wait until every leaf is shed. Some trees, like the oaks and the beech, frequently retain many of their leaves throughout the greater part of the winter. Spring planting usually gives better results than fall planting. Spring is the season of most vigorous growth, and planting at that time gives the tree an opportunity to establish itself, and the soil a chance to become thoroughly settled before the winter. There is then little danger of the trees being heaved by the frost. However, if proper precautions are taken, there is little risk of serious loss as a result of fall planting.

### *Selection of Trees.*

In buying trees, other things being equal, it is advisable to order them from a local nursery. This reduces the risk of loss during transportation, and enables one to visit the nursery and make the selection personally.

In selecting a tree, a compact root system is of great importance. The more small roots a tree has the greater its chance of surviving the shock of transplanting, and the more rapid will be its growth. A large top is desirable provided there is an abundance of roots. A tree with many branches and few roots will make very slow growth if it survives at all. A tree which has lost many of its feeding roots is unable to meet the demand made by the branches, and it is therefore necessary to remove a proportional number of the branches to restore the balance.

No matter how carefully a tree is dug up many of the roots are sure to be broken off or injured. The larger the tree the greater the loss of roots and more severe the pruning required. The removal of four-fifths of the past season's growth from all branches will be sufficient with trees not more than three or four years of age. The cut should be made just above some strong bud. Care, however, should be taken not to destroy the leader or main stem. All broken roots should be trimmed to enable them to heal. All cuts should be made by a sharp knife and be smooth.

### *The Single Leader.*

It is frequently impossible to trim an evergreen tree without permanently destroying its value for ornamental purposes. Therefore greater pains should be taken to secure

a larger proportion of the root system with these trees.

Only trees with a well-developed single leader or main-stem should be chosen. Those with two or three leaders will probably develop into crotched trees and have all the weaknesses of that type. However, by careful pruning as the tree develops, the central stem can sometimes be encouraged to become the leader.

A good straight leader like a whip-stalk or fishing pole is what is desired for the ideal street or lawn tree. For planting adjoining walks, where head room is required for pedestrians, a straight stemmed tree from one to one-and-one-half inches in diameter at breast height, and clear of branches for at least seven feet from the ground, will be found most suitable. If the tree is set near a driveway it may be necessary to gradually remove the lower branches as the top develops until there is ample clearance for vehicles. On lawns and other open situations the lower branches may be retained if desired.

One of the commonest mistakes made is in choosing large trees. The smaller the tree the less likely it is to suffer in transplanting. Small trees will often catch up to larger trees in a few years.

#### *On Arrival From Nursery.*

Trees are shipped from the nursery in bales or boxes with their roots packed in wet moss and wrapped in burlap. The stems are surrounded with straw and also wrapped and tied. If they arrive before planting time the roots should be "puddled" and the trees "heeled in." Puddling consists in dipping the roots in a mixture of clay and water about the consistency of ordinary paint. This forms a coating over the roots and aid in preventing them from drying out. The heeling in consists in digging a trench sufficiently deep to contain the roots with moist earth. If protected

from damage by rodents and the elements, they may be heeled in during the fall and left all winter for spring planting.

#### *Taking Up Trees.*

In taking up trees which are growing on the place, as much earth as possible should be removed with the roots. This prevents the roots from drying out. If the trees are to be carried any distance before planting again it is advisable to wrap the ball of earth in canvas or place each tree in a bag and tie in such a manner as to prevent the earth from being shaken off. At no stage in the taking up, transplanting or planting should the roots be allowed to become dry. This is important. The planting should be done as soon as possible after taking up.

#### *Preparing Holes.*

The hole in which the tree is to be planted should be made much broader and deeper than is necessary to accommodate the roots. Before placing in the tree, the hole should be partly filled in with good garden loam or some of the surface soil, which has been removed in the digging, mixed with some well-rotted manure.

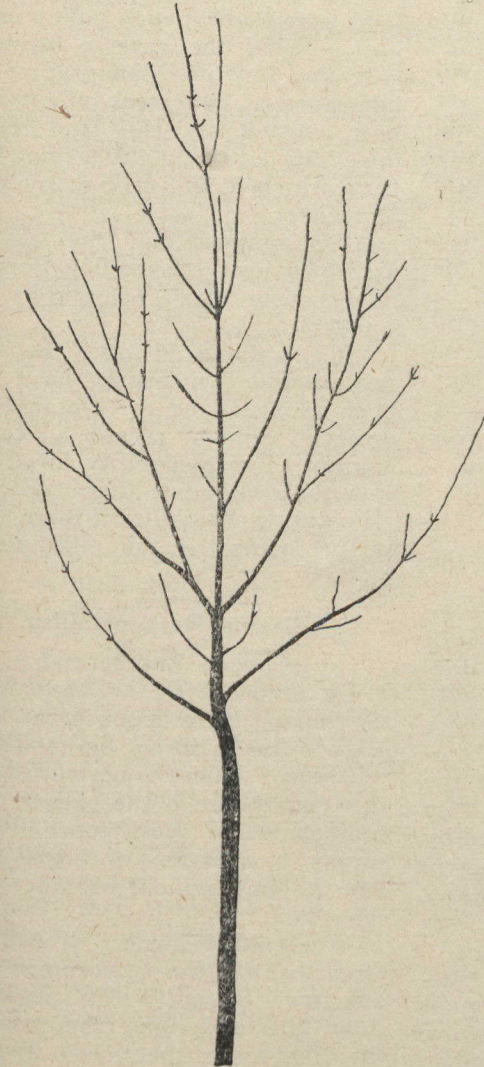
The hole is filled in sufficiently deep to bring the tree to the same level at which it stood before being taken up. The tree should not be set deeper than it stood before, neither should earth be banked up about the stem, except possibly in the case of fall planting, when it is advisable to heap it up at least a foot high until the spring. This overcomes the tendency to heave out and to a certain extent affords protection against mice.

If the tree retains a ball of earth about its roots it can then be set in the prepared hole. The remaining space surrounding it is then firmly packed a little at a time with good garden loam until the hole is com-

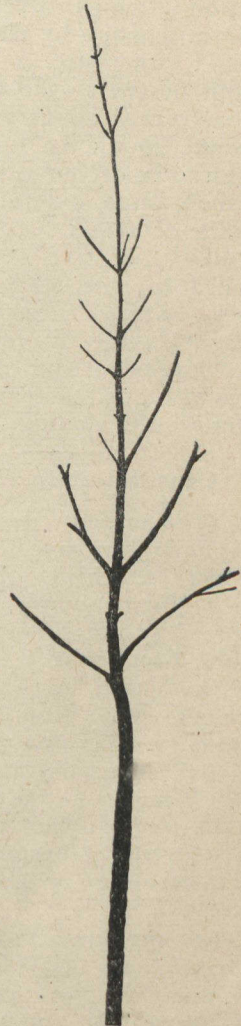
pletely filled and the tree firmly set. It is well to leave an inch or so of loose earth over the whole surface to act as a mulch.

In fall planting a layer of manure or dead leaves over the top will re-

sifted over them, a little at a time, and firmly worked in among them with the fingers or a pointed stick. This is proceeded with until the hole is filled. It is important to have the soil well packed about the roots.



Before Pruning.



Pruned Before Setting Out.

duce the chance of heaving in the early spring.

Trees without earth about their roots should be set in a similarly prepared hole so that the roots spread naturally and are not twisted or crowded. Rich soil should then be

In setting a tree care should be taken from the very start to see that the stem is kept perfectly vertical. Attempts made to straighten it after the earth has been packed about the roots are liable to injure the tree.

*Work of Staking.*

After the hole has been filled in, to prevent the tree from getting out of vertical by settling of the earth and the swaying of the top in the wind, a guard stake should be used. A single stake is sufficient for any situation in which there is little danger from damage by children or vehicles. Otherwise, a secure crate the full height of the trunk should be constructed about it. The single stake should be long and rigid enough to be driven at least two feet into the ground and still support the tree six or seven feet above the ground. The tree should then be attached to the stake in several places. A piece of manilla rope run through a piece of old rubber hose which has been bent about the tree serves as a good fastener. The hose minimizes the chafing.

**Canada's Pulp Exports.**

A Washington despatch to the New York Sun says:

"Over two-thirds of the more than a billion pounds of wood-pulp imported into the United States during the fiscal year ending June 30, 1916, and used in the manufacture of paper, came from Canada," according to a communication to the National Geographical Society from John Oliver La Gorce and issued by the society as a bulletin in connection with the government's inquiry into the increase in the cost of newspaper.

"The pulp importations for 1915-16 have been 180,000,000 pounds less than for the previous twelve months, yet the amount shipped to us from Canada during the past year was 130,000,000 pounds in excess of her 1914-15 shipments.

"During the year just closed nearly 70 per cent. of our 1,135,000,000 pounds of pulp came from our neighbor to the north, while most of the remainder came from Norway and Sweden."

**Preparedness Needed.**

(Berlin, Ont., Telegraph.)

"Manifestly what Northern Ontario needs as a permanent policy is one of preparedness against forest fires, and it is equally manifest that the villages and towns of our hinterland have had no such policy in the past. Had the reverse been the case the terrible conflagration and holocaust of last week might have been averted, and this land of promise saved from a disastrous blow from which it will take many years to recover."

After enumerating the reforms asked for by the Canadian Forestry Association, the Telegraph continues:

"It is a thousand pities that these precautionary measures have not been adopted, and the Ontario government cannot escape a certain amount of responsibility in connection therewith, but there will be a criminal responsibility if there is any further neglect in this all-important matter."

**Placing Responsibility.**

(Canada Lumberman.)

We often hear it said that the fire ranging problem is too great to be solved, that it cannot be handled effectively. There is no truth in this statement. It is the excuse of incompetence or indifference. It is simply a question of organization and the employment of experienced rangers.

"The timber owners of Northern Ontario find the Government unquestionably guilty of neglecting their duty, and alone responsible for the great losses that are so frequently sustained by the timber owners and settlers themselves. These timber owners have shown the Government how to handle the problem and they are naturally indignant at the feeble manner in which both the present and all former governments of Ontario have dealt with the situation."



## A Visit to the Devastated Claybelt

### Officers of the Canadian Forestry Association Find That Sentiment in Northern Ontario Favors Restrictive Legislation

The Canadian Forestry Association, through two of its officers, made a preliminary investigation of fire conditions in the Claybelt region between Haileybury and Cochrane on the T. and N. O. Railway during the week of August 14th. Personal observation along the main and branch lines of the railway and some miles into the back country and numerous interviews with settlers, government employees, railroad officers, merchants, etc., strongly supported the Association's contention that Northern Ontario need not suffer another catastrophe if the Provincial Government at once reorganizes its protective system on really modern lines.

#### *Danger Ahead.*

It was everywhere admitted, with the possible exception of the Matheson district, where the country is stripped, that the risk of fire in future years has been greatly increased by the killing of so much green bush during the past month. The dead, and therefore very inflammable spruce forests, which now lie across so much of the farming country from Matheson northward, add an element of decided danger to the situation as it was a few months ago. It is well known that it usually takes no less than three or four successive fires to thoroughly clean up an area of standing timber. How to offset these perils to life and property is a problem which can and must be solved by the Department of Lands and Forests of Ontario. The Claybelt has had scarcely any fire protec-

tion worthy the name, except immediately along the railways, and the Department tacitly confesses that this section must take its own chances. The harvest of that policy has been so gruesome and costly that the forethought of the Government in the matter of rehabilitating the settlers will logically extend to giving their lives and their homes a reasonable guarantee of fire immunity for the future. Toward that sensible goal, all true friends of Northern Ontario are eagerly looking.

#### *A Safe Claybelt.*

The disaster of July 29th, 1916, had its origin with settlers' slash fires. That point is undisputed. The remedy for bush fires must start with the cause. Wider clearings to protect the towns are an obvious necessity, easy to accomplish. But the safety of the settler in the heart of the bush is another and more serious problem. The average settler is, to a considerable extent, an isolated unit. He must do his own clearing. After two or three years' work, from 70 to 80 per cent. of his homestead usually remains in bush. He uses fire to rid his soil of the encumbrance of slash and stumps, and fire is plainly a necessity for such a purpose. It does a valuable service in clearing that particular piece of land of the overlying debris. It does no genuine permanent service, and often does untold injury when it escapes from the clearing into his green bush, for it destroys the trees as marketable pulpwood, and quad-

rupes the perils of the next dry season. These escaped fires caused the horrible swirl of destruction that passed across 1,200 square miles of Ontario a few weeks ago, causing the loss of more than 250 lives, with a recurrence last week in the vicinity of Haileybury which took an additional toll of 12 lives and caused a further large exodus of settlers from the country.

#### *Origin of Disasters.*

Government control of all settlers' fires means a safe Claybelt. A controlled fire, as understood by forest protective systems in nearly all parts of the world, spells careful, safe, economical burning of slash, as opposed to the imperilling of thousands of lives and millions of dollars' worth of property by indiscriminate burning at any time the settler may choose.

Many settlers in Northern Ontario exert great care when burning off their slash. Others deliberately encourage the fire to do its worst for themselves and neighbors by lighting their fires in times of drought and wind, and "coaxing" the flames beyond their clearings. From these careless and thoughtless people the wise and cautious settler has absolutely no protection under present Ontario laws or administration. As an individual, he can watch only his own conduct. For the criminal conduct of other people he reasonably looks to the Ontario Government, the trustees of his lands and personal safety, the designated guardian against the menaces of forest fire.

#### *Two Evictions by Fire.*

Life and possessions are as precious to the North Ontario settler as to the southerly townsman. He is being asked to-day to return to his home in the bush, to make a fresh start after two evictions by forest fire in 1911 and 1916. Is his request excessive that he should enjoy as

good fire protection through the bush areas as his fellow settlers in parts of Quebec, and New Brunswick, or the whole of British Columbia and Nova Scotia?

Is this a reasonable proposal? Since settlers' fires are admittedly the most formidable source of trouble, the remedy must start precisely at that point. The wise and careful settler must be encouraged. His conduct must be made the standard of the whole Claybelt.

First of all, the Legislature of Ontario should pass a law—there is none in existence to-day—prohibiting the use of fire for clearing land in those spring and summer months of highest danger throughout the North Country, except by consent of a skilled ranger. How will such a law affect the settler?

#### *How the Plan Works.*

Look into British Columbia or Nova Scotia or sections of Quebec! A law is, of course, merely an instrument. It requires tactful but thorough enforcement by competent and experienced officials, to be of the slightest avail. The settled parts of Ontario's forested territory will have to be organized for patrol purposes. No one even pretends that the public-owned and partly settled bush lands of the Claybelt bordering the T. and N. O. and Transcontinental Railways are adequately patrolled, aside from the railways' right-of-way. In other provinces, fire rangers are assigned to such districts, and these men quickly make themselves known to all settlers under their jurisdiction. Their presence itself is an advertisement for carefulness. When a settler is prepared to make a burn he hails a ranger, satisfies him that he has complied with the simple conditions of safety, such as piling part of his slash or making fire guards about the edge of his clearing, and gets forthwith a written "permit," providing the weather conditions are

favorable. There is no red tape, no fee to pay, no long waiting, and the stipulations of the ranger are such as should appeal to any reasonable man.

*What Others Say.*

Wherever the Permit System for settlers has been tried, it has proved remarkably efficient in holding down

the dangers of forest conflagrations. No province of Canada, no state of the American Union, that has adopted the system could be persuaded to forego the blessings of it, and the settlers in these provinces and states would be the last to invite a return to the hapless conditions that thus far obtain in Northern Ontario.

## *\$300,000,000 for Lumber to Repair Wastage*

The Wall Street Journal recently published the following in regard to the lumber that will be needed in the reconstruction of the war-swept portions of Europe:

"When Europe begins the work of reconstruction an immense amount of lumber will be needed. So, too, South and Central America, which have heretofore been importers of lumber, must again call for the material as soon as ocean transportation facilities permit. An immense market for lumber should then develop. The man who has money to invest may find it worth while to consider this demand, and the possible source of supply.

"A bird's-eye view may be had by looking at San Francisco, Baltimore or Messina. For instance, in the year following the earthquake Italy imported lumber to the value of \$33,000,000. The amount that went to Messina district was 700 times greater than normal. Set Belgium, Northern France and Poland in opposition to Messina, and \$300,000,000 worth would seem ultra-conservative, although any figures at this time must be largely guesswork.

"It is certain that building activity has almost ceased in Great Britain and France. It is a fair infer-

ence that the same conditions exist in Germany and Austria. It would seem as if all the belligerents are too busy making and expending ammunition to find time to saw up boards for industrial use. South America is at a standstill, not because it does not want the lumber, but because of war's disarrangement of transportation.

"The United States, Canada and Russia are large producers of lumber. But in the United States there is a large population of lumber consumers. The annual cut now is 15 per cent. less than five years ago. Our share of the world export trade is above \$100,000,000 a year. Since the war it has been reduced nearly one-half. What is supplied for European rebuilding must be at the expense of our domestic needs.

"A promising source of supply is in Central Russia, Siberia, and the Caucasus. Russia itself will consume enormous amounts of lumber, but this is a source in which she is rich. The timber is there, and the market soon will be. The lumber business in Russia is, however, conducted on lines as out of date as its agriculture. If there be any Alexanders among the lumbermen of the United States, in the forests of Russia they may find new worlds to conquer."

## *What the Settlers' Permit Plan Actually Accomplishes*

*The Testimony of Hon. Jules Allard; E. T. Allen, of  
Portland, Ore.; the B.C. Forest Service and Others*

That settlers' clearing fires have been responsible for incalculable forest losses in most of the forested provinces is a fact recognized by the Governments of British Columbia, Quebec, New Brunswick and Nova Scotia, and indeed by the prairie provinces, and laws have been passed to bring private burning operations under official control.

Ontario, however, has paid little heed to these evidences of progress on the part of its neighbors, so that the holocausts of 1911 and 1916 in the North country (having their origin in settlers' fires), were allowed to pass without any assurance of improved laws and administration. The storm of protest from the Ontario newspapers and many public bodies cannot but have its effect. Indeed, it is not too much to predict that the next session of the Legislature may witness a new law providing for control of settlers' fires. If such a law is supported by an administrative system radically altered from the present outworn idea, the Province of Ontario will begin to experience the benefits of a genuine scheme of fire prevention, certain to save hundreds of lives, and millions' worth of property.

Following are some concise testimonies to the usefulness of burning permits in other parts of Canada and the United States:

### **Quebec's Experience.**

"After a careful study of the question," writes Hon. Jules Allard, Minister of Lands and Forests, under date of August 29th, 1916: "We came to the conclusion that the most efficient means to protect the forests from damages caused by fires set by settlers in their clearings, at the same time fostering the agricultural development of our Province, was the Permit System.

"This year, although we have not yet received all the reports, I can safely say there must have been over 2,500 permits granted. There has been no damage caused by fire for clearing purpose made in virtue of these permits."

### **In the Western States.**

A letter to the Secretary of the Canadian Forestry Association from E. T. Allen, Forester of the Western Forestry and Conservation Association, which administers a thorough forest protection system in the Pacific North-western States, carrying on a vigorous and successful educational work as an auxiliary, contains the following important statements, under date of August 29, 1916:

"I can testify very gladly that in our Pacific North-western States the burning permit is as accepted a part of fire prevention as patrol or fire fighting. None considers abandoning it. Its effectiveness comes in many ways besides through direct prohibition, enforcement and penalty. It affords a means of keeping settlers and forest officers acquainted and in touch. It pleases the settler because when he receives a permit and complies with its terms he is fairly immune from trouble if his fire becomes unruly. He has largely shifted the responsibility.

"As to its working, I can perhaps give no better evidence than to say that last year in the State of Washington alone nearly 13,000 burning permits were issued, and under them 118,000 acres were burned over. Here, then, were 13,000 acres in one season under precaution and control which without the law would have been set without precaution and control.

"With a good law and good administration there are practically no difficulties, and most settlers like the protection it gives them against their careless neighbors.

"The permit is an absolute essential of any serious attempt to reduce fire in a developing forest region."

#### In British Columbia.

"It is safe to say that among the settlers, 90 or 95 per cent. support this provision (issuing of a permit for clearing fires) and would resist its elimination. From experience gained in British Columbia the unqualified statement is made that unless bush burning is controlled by means of permits no real fire protection is possible in a timbered country.

"It is safe to say that in no country where permits have been used would the people go back to the old system of indiscriminate and uncontrolled burning."

#### Settlers Co-operate.

From the President of the St. Maurice Forest Protective Association of Quebec (patrolling 12,000 square miles of forested country, much of it heavily dotted with settlement).

August 31, 1916:—"We have been so successful with the Permit System that we would under no circumstances go back to the old way of handling fires. This season we have had absolutely no trouble with the settlers. They have co-operated with us in every way and their satisfaction is universal. So far we have not had a single fire caused by a settler, a most unusual and satisfactory record."

"(Signed)

Ellwood Wilson."

Grand'Mere, P.Q.

## How to Judge Velocity of Wind

The wide difference between guesses at wind velocity during time when forest fires are raging gives interest to the following table which is taken by the Journal from a report of the United States Forest Service:

Name.	Miles per hour.	Apparent effect.
Light	5 to 15	Moves leaves of trees and small branches, blows up dust.
Moderate	15 to 25	Good sailing breeze; moves leaves and other light objects along ground.
Brisk	25 to 35	Sways trees and breaks small branches.
High	35 to 50	Damages small, frail buildings, grain or hay in field.
Gale	50 to 80	Prostrates exposed trees or frail houses.



Courtesy Grand Trunk Railway System.

Lady Evelyn Falls, Lake Temagami, Ontario.

### This Is Worth Insuring.

According to United States Consul Willrich, of Quebec, that province exported over \$5,100,000 worth of news-print paper to the United States in 1915. Two years ago, or in 1913, the export of this commodity to the United States was little over a million, so that there has been a remarkable increase in the two years. The consul is of the opinion that the increase will continue, pointing out that the Province of Quebec possesses an abundance of undeveloped water power and practically unlimited forest resources.

The report of the U. S. consul once more brings before Canadians the vision of two choices: a protected and developed forest, adding millions of dollars to the national wealth, or an unguarded forest wherein flames are given freedom to undermine the revenues of present and future.

### "The Scythe Tree" of New York.

One of the most unusual incidents of the American Civil War is connected with what is known as "The Scythe Tree" in New York State. When Lincoln made his first call for 75,000 volunteers, James W. Johnson, a farm lad, was mowing grass in a field. Johnson hung his scythe on a Balm of Gilead tree, bade his parents leave it there until his return, and went to the war. All that year and the next, and still another, the scythe hung in the tree until Johnson was killed at Plymouth, N.C., April 20, 1864. The scythe was still left in place in the tree, and meantime the tree grew until but a very small part of the blade protruded from the large trunk about eight feet from the ground. The tree was damaged by lightning during an electric storm this month, but the blade is still embedded in the shattered trunk.

## *Observations on a Hudson Bay Trip*

That some of the territory bordering Hudson and James Bay has been badly swept by forest fires this year is the word conveyed to the Canadian Forestry Journal by Lieut. Chas. McCarthy, Police Magistrate of Elk Lake, Ontario. Lieut. McCarthy recently concluded an enterprising journey from Cochrane to Hudson Bay in search of recruits. He was highly successful, and brought out forty-five.

The journey to Moose Factory took five days, the return journey eight days. The route followed was along the Ground Hog river, past the junction of the Kapuskasing, into the Matagami, and thence past the junction of the Missinabie to the Moose River, which carried the party to the Bay.

Along the Little French river bad fires were visible, and reports of Indians from other districts seemed to indicate that large areas would be burned over in 1916. Lieut. McCarthy confirms the reports of most other travelers passing along the same route, that the tree growth is heaviest at the edges of rivers. Examination of the interior of the country from tree tops and high land showed no forests of large size wood. A report of Explorer La Duke to the effect that beyond the range of vision, some miles back from the rivers, the forests again approached merchantable size, and that the small growth in the muskeg immediately visible was no indication of what the country held, was admitted by Lieut. McCarthy to be easily possible, as he had not examined the interior.

The officer mentioned seeing numerous evidences of wholesale burning in past years. Fires had done their utmost to clean out the country for hundreds of miles, and as the

country was settled only by three or four thousand Cree Indians, no attempt had been made by any government to even educate the natives in guarding against conflagrations. The influence of the tribal chiefs would prove of the highest value in fire guarding, said Lieut. McCarthy, and if the present leader of the Crees at Moose Factory, Chief Wemistagoosh, could be placed on an annual honorarium of a few hundred dollars, he could reduce fire risk better than a staff of imported rangers. The chief was keenly aware of the great damage done annually to the game haunts by fires.

### **Lumbering Activities.**

Says the Canadian official Labor Gazette for August: "Most lumbering districts reported continued activity, although in Northern Ontario considerable damage was done to the industry through ruinous forest fires which destroyed timber and sawmills. At Newcastle, N.B., mills were very active and provided a great deal of work for unskilled labour. In the St. John district, also, active conditions prevailed. Quebec reported mills running to capacity, and on account of a late start owing to high water likely to run on well into the fall. At Three Rivers mills were busy. At Prince Albert, Sask., mills were running day and night and were expected to continue so until freeze-up. Edmonton reported an increased demand for all classes of finished lumber and higher prices. At Fernie, despite the difficulties of fires and floods, the outlook was reported favourable. Post and pole dealers reported the demand keeping up well. New Westminster reported mills active, with a good demand for lumber and shingles."

## The Timber Markets of India

By H. R. MacMillan,  
Timber Trade Commissioner of Canada.

The use of timber in India is extremely limited. The annual per capita consumption of timber, including all forms of rough wood used for fuel and other purposes, is estimated to be  $1\frac{1}{2}$  cubic feet, of which four-fifths is used for fuel. The total quantity of timber used, aside from fuel, is 96,000,000 cubic feet, equal to about 960,000,000 feet board measure, or three board feet per year per head of the population. By far the greater part of this is used in the form of rough logs and poles for building purposes.

This extraordinarily sparing use of wood is due to several causes. The earning power of the population does not exceed 80 cents per head per month, and buildings are therefore small and consist of mud, grass and bamboo supported by a minimum of timber for posts and rafters. Wherever there is population white ants are destructive. Only ant-proof woods can be used for building purposes in India.

### *Ant-proof Woods.*

Ant-proof woods are restricted to a very few native species, chief amongst which are teak, deodar, and sal. These species are high in price both because of the great demand and because of the extremely costly methods of handling timber in vogue in India. Even in a sparsely settled, forested portion of Assam, sawn joists three feet by four inch by 12 feet sold for \$48 per thousand feet board measure. Ordinarily rough hardwood logs eight inches to 14 inches diameter sell at the railroad station in the treeless Punjab, India's great wheat-grow-

ing district, for \$40 per thousand board feet. Teak, which is the universal building timber in the cities, sells at the coast ports at \$100 to \$110 per thousand feet for small dimension boards and planks. Such prices in a country where the average daily wage is about 4 cents necessarily restrict the use of timber. India is not an industrial country. Fully nine-tenths of the population live directly or indirectly by agriculture. The Indian agriculturist makes his own few tools, has no barns or outbuildings and lives in a mud or grass hut. He gets along without timber.

### *The Results of Forestry.*

The use of imported timber is confined exclusively to the industrial centres, railroads, public works and military necessities. The agricultural population uses absolutely no imported timber.

That Indian forests are able to almost completely meet the requirements of the country for timber is due to the splendid forest administration inaugurated by the British government half a century ago. About 40 per cent. of the country is under forest. The whole of this area is administered carefully to prevent destruction by fire and over-cutting, and although at the time of British occupancy the more accessible forests had been almost ruined, wise management has already greatly increased their productivity. There still remain in some provinces, notably in Burma, large areas of hardwood forest, suitable for industrial purposes, which through lack of capital, suitable machinery and equipment have not been rendered accessible.



*Matches Are Popular.*

It is natural to find, therefore, that the timber imports of India, aside from teak, which is brought in from Java and Siam to the extent of \$800,000 to \$1,250,000 yearly, consist almost entirely of rough lumbers for temporary uses only, or manufactured wooden articles introduced by Europeans or rendered necessary by the development of industries.

India is probably the only country in the world in which the imports of such articles as matches, boxes and railroad sleepers exceed greatly in value the importations of rough lumber. Matches are the only wooden articles the population can afford to buy. The other articles, together with the common lumber, do not pass into the hands of the Indian population, but are used exclusively in industries, public works or by transportation companies.

**Chittenden's Folly.**

"In a long editorial the Toronto World gives publicity to a statement by General Chittenden of the United States army that forests are not of use as storage reservoirs for rainfall. Because General Chittenden denies that the forests retain the snow, causing it to melt gradually, denies that the forests absorb more rainfall than the cultivated fields, and takes no stock in the argument that springs and wells dry up when forests are cut down, and calls that part of the forestry propaganda, which goes further than asking for the protection of forests for wood the crop a good deal of humbug, the World innocently considers that a myth has been exploded, and that possibly forest fires are rather an advantage. It is fortunate that the conclusions of General Chittenden are so very obviously wrong, that little harm will be done by the publicity that has been given them, or by their acceptance by folks who have never had the opportunity to

judge these natural forces for themselves. Our Canadian forestry service is run by very capable men. Men who are living in daily contact with these things and who have splendid opportunity to make a scientific study of them. The same is true of the United States forestry service, and both services are doing their best to convince the nations of the advisability of keeping the land which cannot be advantageously used by agriculturists covered with forests, so as to preserve our streams and our rivers, and to prevent our country becoming, like northern Mexico and the plains of South Africa, hills denuded of soil and a country seamed with dry gullies, aroyas or kloofs."—Montreal Witness.

**Saving Lives and Dollars.**

(Kamloops, B.C., Standard.)

The great benefit which the Province of British Columbia is deriving from the systematic work done by the Provincial Forestry Department on Provincial lands, and by Dominion foresters in the lands controlled by the Federal Government, can hardly be estimated by one not familiar with the appalling havoc which fire can produce in a forested country.

The recent conflagration in Northern Ontario points to the fact that the British Columbia system of forest protection is well worth every dollar expended upon it. There have been some serious outbreaks in this country, but in each and every locality the fire has been put under control before it gained headway. Millions of dollars have been saved to the province and to the lumber industries by the British Columbia staff of fire wardens and rangers, and millions of dollars and many precious lives would have been saved to Ontario if that province had any such system of fire protection as we have in this province.

## A Comparison of Provincial Laws

### The Nova Scotia Law.

No person shall make, kindle or start a fire for the purpose of clearing land, or other like purposes, nor set up nor operate a portable steam engine within sixty rods of any woods, between the fifteenth day of April and the first day of December next following in any year, without first having obtained leave in writing from the chief ranger or sub-ranger. It shall be the duty of such chief ranger or sub-ranger on being requested to grant leave to start such fire, or to set up or operate such portable steam engine, to examine the place at which it is intended to start the fire, or to set up or operate the steam engine, and the adjoining lands, and the timber, trees and other property thereon, and to refuse such request and decline to grant leave, or to grant it only on conditions to be performed by said persons, if in his opinion it would not be safe by reason of the danger of fire spreading thereon or otherwise.

### British Columbia.

During the close season (between May 1 and October 1) no person, firm or corporation shall set out, or cause to be set out, fires in or near slashings or forest debris, standing or fallen timber, or bush land for the purpose of burning slashings, brush, grass, or other inflammable material, or for any industrial purpose, without first obtaining a permit therefor: Provided that no person shall be convicted who shall have set in good faith and with reasonable care a back-fire for the purpose of stopping the progress of a fire then actually burning.

### Quebec.

No person shall, in the forest or less than a mile from a forest, set

fire to, or burn, any pile of wood, branches or brushwood, or any tree, shrub or other plant, or any black loam or light soil, or any tree trunk or tree that has been felled, at any time, except for clearing purposes between the 16th of November and the 31st of March of the following year, but between the 1st of April and the 15th of November, it is necessary to first obtain the written permission of the Minister, or of any other officer of the Department thereto authorized by the Minister, or of the fire ranger.

### Ontario.

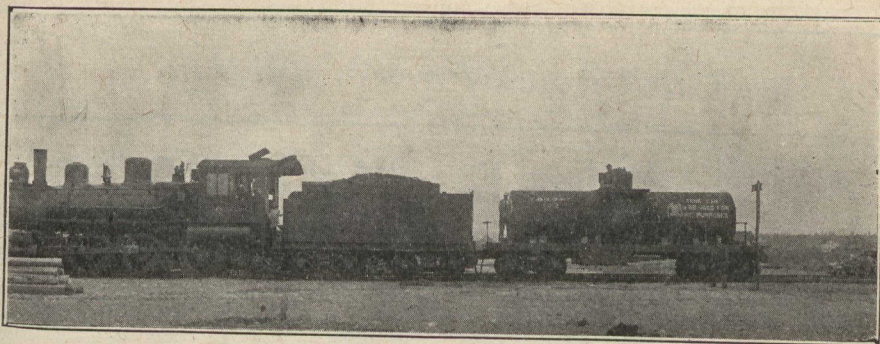
Every person who, between the 1st day of April and the 1st day of November, sets out or starts a fire within a fire district for the purpose of clearing land, shall exercise and observe every reasonable care and precaution in the setting out of starting of such fire and in managing of and caring for it after it has been set out or started, in order to prevent the fire from spreading.

### Entirely Reasonable.

St. Thomas "Times," Aug. 7, 1916: The reforms pressed upon the Ontario Government by the Canadian Forestry Association, look entirely reasonable, and it is hoped will now receive earnest consideration and result in early and effective action.

### What Ontario Needs.

Brockville "Recorder," Aug. 5, 1916: The Ontario forest protection service stands urgently in need of three main reforms which year after year have been urged upon the Government by the Canadian Forestry Association, Commission of Conservation and other bodies.



PROTECTION ON THE T. AND N. O. RAILWAY LINES.

The vigilance of the Temiskaming and Northern Ontario Railway Commissioners in matters of forest protection has received much well-deserved testimony. Above picture shows one of the four tank cars used on the line between North Bay and Cochrane, Ontario. Each car holds between 7,500 and 8,000 gallons of water, and can be easily re-filled at the water tanks. Good service was done by one of the cars at Mileage 133, main line (previous to the holocaust of July last) in extinguishing a fire caused by a settlers' slash. In the judgment of the commissioners the tank cars have already paid for themselves, and will eventually become a piece of standard railway equipment in forested country.

### What Guarantee?

Hamilton "Times," Aug. 10, 1916: Despite this devastating fire, the clay belt will be repopulated. Those who escaped are already being persuaded to go back. But what guarantee have they that another fire will not sweep across their land next year or the next? The Government must see that precautions as good as in other provinces are taken in Northern Ontario. Our Government cannot afford to have our settlers burned up in this way when prevention is possible.

### Opinion in Peterboro.

Peterboro "Examiner," Aug. 5, 1916: Here we have expert opinion to the effect that forest fires are preventable or possible of great restriction by the simple passing and enforcing of legislation prohibiting the crime of setting out "slash" fires in the height of an unusually dry period. The neglect to take action is little short of criminal.

### Community Interests.

Dundas "Star," July 27, 1916: The interests of the community are of more importance than those of the individual and we must legislate accordingly.

### "The Clay Belt's" Opinion.

From the Cochrane "Claybelt," Aug. 18, 1916: If the Government should not see fit to introduce legislative measures during the next session to reorganize the obsolete fire ranging system and inaugurate sane fire protective service, the entire North will not rest until they see men at the helm of the Government who are capable of stopping a repetition of the horrors accompanying such devastation as we have now experienced for the second time within five years.

### Can Fires Be Prevented?

Winnipeg "Post," Aug. 5, 1916: One-tenth part of the losses sustained annually by forest fires would provide an army of forest rangers and other means of preventing forest fires or of arresting them when they get beyond control.

### Opinion in Woodstock.

Woodstock "Sentinel-Review," Aug. 7, 1916: In the light of the statement presented by the Canadian Forestry Association the recent disaster was not merely a disgrace to the province but a crime.

## Great Forest Fires of History

It will interest readers of the Journal to know that the Northern Ontario forest fires of 1916 rank as the third greatest disaster in the history of the American continent.

The worst fire of all occurred in October, 1871, in Wisconsin, and was known as the "Peshtigo" disaster, when 1,500 lives were lost and 1,280,000 acres burned over.

In point of lives lost, the Hinckley fire in Minnesota in September, 1894, ranks second, with 418 deaths and 160,000 acres devastated.

The Northern Ontario fire of 1916, including the 12 lives lost near Hailybury in the second conflagration in August, account for probably 260 deaths. About 800,000 acres were burned.

In the famous Miramichi disaster of 1825, 3,000,000 acres of New Brunswick and Maine were cleaned out and 160 lives lost.

The Porcupine disaster in Northern Ontario in 1911 accounted for a loss of about 84 people.

## Prompt Action by a Board of Trade

An example of the courageous stand taken by so many of the Ontario Boards of Trade in advocating an overhauling of the Ontario Forest Protection System is contained in the following telegram sent by the London Board of Trade to Hon. G. H. Ferguson, Minister of Lands and Forests, Toronto:

"Minister Lands and Forests, Parliament Buildings, Toronto:

"Concerning Northern Ontario disaster and this Board's resolution previously communicated to you, urging adequate control of settlers' fires, Board asks what immediate steps are being taken to protect lives and property.

"Secretary London Board of Trade."

The Carleton Board of Trade took similar action, and the Fort William Board, the Prescott Board, and others addressed letters to the Minister at Toronto urging a study of forest protection systems in other parts of Canada and the United

States, and the application of radical reforms to the Ontario forest service. This action by the Boards of Trade is certain to exert a powerful influence.

### Co-operate with Settlers.

(New Liskeard Speaker.)

"There is but one way to proceed in order to reduce the danger from forest fires, and that is by asking the assistance of the farmers. Consult them. Ask their advice. Let them be represented on a Commission to be appointed to give permits to burn over the land intended to be cleaned. This plan would elicit the support of the farmers, and they in turn would help enforce the law. Briefly put, these are the Speaker's views."

[Note: The Permit System of controlling settlers' fires proceeds exactly on the principle advocated above—co-operation with the careful settler.—Editor Canadian Forestry Journal.]

## *Holding the Camper in Check*

The demand throughout Canada that the reins of law be drawn tighter on all users of fire in timbered territory is bound to drive our Governments to more vigorous action. Taking the country as a whole, the great lack is not laws and regulations, but determined enforcement.

Complaints by licensees regarding the failure of provincial governments to deal with the annual peril from campers, fishermen, etc., are too often met with a mailed copy of "Rules and Regulations." The licensee, of course, knew all about these printed prohibitions and cautions, but he likewise knew that a printed law is without effect unless closely administered. Willing to pay for his own rangers and costs of fire fighting, he legitimately protests against the indifference shown to the fire patrol beyond the edge of his limits. Forest protection cannot be effected by patchwork. A mile of carelessly patrolled forest may, and does every summer, threaten the precautions taken on neighboring property. How illogical it is for a provincial government to protest against the cost of forest guarding may be estimated by one instance, when in 1913 a single lumber company lost fully \$300,000 of pine and spruce and \$19,000 of camp equipment, caches, logging gear, etc., by fires that were started in Algonquin Park, Ontario, presumably by careless campers or other persons on a summer outing.

Complaints from Ontario licensees whose holdings are imperilled by their proximity to the tourist routes in Algonquin Park, have been submitted to the Ontario Department of Lands and Forests, but thus far without promise of better conditions.

A letter received from the chief ranger of one of the largest limit holders is given below:

"I want to impress on you that if some steps are not taken by the Government to enforce stricter rules on these tourists going through the Park, some day you will have a big fire. Tourists are allowed to go through the Park without any guides, and half of them know nothing of the danger of fire, and more of them are careless.

"There should be some stringent regulations made and enforced by the Government either to prohibit travelling by these parties in the Park without guides or to put on enough men to police the canoe routes; otherwise you are going to lose that country some day."

Perhaps the compulsory engagement of guides by every party would be too severe in a public playground, but there is nothing to prevent the building of safe fire places along the canoe routes. In Northern Minnesota not only are scores of these fire places built by the rangers but signs are erected to indicate just where they are. Another simple but most effective precaution is to have every party of campers entering the Park, not only at Algonquin Park Station but at all the inlets, indicate the route they intend to follow, and, as these routes are more or less standard with all travellers, rangers could keep close tab of their movements, instruct them when necessary in the danger of carelessness, and exercise in general the functions of police. There is at the present time a system of supervising visitors to Algonquin Park for fire protection purposes. It proves quite efficient as far as it is exercised. But the trouble encountered by licensees in guarding their

property from fires originating with cigarettes, matches, camp fires, etc., indicates how far distant is the full object for which the "Rules and Regulations" were framed.

#### *What the Limit-holder Faces.*

The following letter was written August 3rd by a chief fire ranger on Quebec limits to his employers, a well-known lumber firm:

"Where are the fire inspectors and fire rangers for Ontario? I have not seen one since I came on the job, and this A.M. I found a fire that has been smouldering for eight days yesterday, left by a gang of men on a Government job, with a man in charge, or supposed to be. I have all proof that they left it as I see where they boiled their tea and fed their horses. This is the third fire I know of inside of four days.

"I don't know as it is my business to say anything, as it is not in my jurisdiction, being in Ontario; but it is things like this that were the cause of hundreds of lives being lost only a few days ago, and still the fires are not out.

"I am going to get a team to draw some water to put on this fire, as I have it all covered over with earth. It is right in the edge of a heavy slash, and a spruce bush. There is no danger now, until I get the water. Had it got a good start it would with a west wind be on the limits in a few hours."

#### **Helping the Settlers.**

The Ontario Government has set aside \$100,000 as the first instalment of the money the province is to loan to the settlers of Northern Ontario to enable them to develop their farms. The money has been appropriated under the legislation of last session, and will be turned over to the account of the Northern Loan Commission. Armed with the sinews of war, Loan Commissioner Fred Dane left for the north recently to commence the distribution of loans.

Under the legislation of last session the Government adopted the policy of advancing money to settlers on the security of their cleared land, a limit of \$500 per settler being fixed. Hon. G. Howard Ferguson, Minister of Lands, Forests and Mines, who has the new work in charge, had proposed to put the legislation into effect this summer, and was making the necessary arrangements when the great fire in the north broke out. The Government at once appointed Mr. Dane as commissioner and sent him north. Since then he has been engaged upon relief work, for which the Government set aside \$100,000.

With this work well in hand Mr. Dane is now ready to deal with the applications of the settlers for loans. It is estimated that nearly two hundred applications have been received so far.

"The present appropriation of \$100,000 is only the first," stated Hon. Mr. Ferguson. "Other amounts will be provided as they are required."

#### **Death of Senator Frost.**

Senator Francis Theodore Frost, president of the Frost & Wood Agricultural Implement Company, and a devoted member of the Canadian Forestry Association, died very suddenly at Smith's Falls on Aug. 25.

Senator Frost had been in his office as usual during the day, and had not complained of feeling ill. About 9.30, after spending the evening quietly at home, he was sitting playing solitaire when his wife, who was close by, noticed him topple over in his chair. Medical aid was promptly summoned, but he expired at 1 o'clock next morning.

It was a stroke of paralysis. He suffered one some years ago when attending the session in Ottawa, but then recovered. Hon. Mr. Frost was appointed to the Senate by the Laurier Government in 1903.

## Fort William's Energetic Protest

The following letter was addressed by the President of the Fort William Board of Trade to the Minister of Lands and Forests at Toronto:

Fort William, Ont.,  
August 11th, 1916.

To the Honorable G. H. Ferguson,  
Minister of Lands, Forests and  
Mines, Parliament Buildings,  
Toronto, Ont:—

Dear Mr. Ferguson,—The recent forest fire tragedy in Northern Ontario, entailing such frightful loss of life and property, has served to remind us very forcibly of the representations made to your Government by this Board in the spring of this year, as embodied in memorandum dated 14th February. We feel impelled to renew our solicitations of that date with increased earnestness, that some remedial steps may be taken at the earliest possible moment by your Government to reduce the hazard of devastation by forest fire, and to prevent as far as is humanly possible a repetition of the holocaust which recently occurred in Northern Ontario.

In years past, constantly recurring forest fires have seemed to indicate that our forest protection service had not kept pace with the needs of the province, the need of forest protection has grown from year to year, and will continue to grow just as long as settlers can be induced to locate on timbered areas. The location of settlement on the timbered areas of Northern and North Western Ontario is greatly to be desired, but with their location there comes an added responsibility to those who are charged with the

protection and preservation of our forests. As we hope for the settlement of the timbered areas of Ontario, so must we prepare to protect the settler, and teach, or force, if need be, the settler to protect himself from the catastrophe of forest fire. No word of ours can adequately describe the need of the situation, the tragedy recently enacted in Northern Ontario is sadly eloquent.

While it may be true that forest fires cannot be entirely eliminated or their causes entirely removed by legislation, we are convinced that the laws relating to the prevention of forest fires, and the regulations at present existing in the Province of Ontario are inadequate to the needs of the province, and that legislation should be enacted which would prevent many abuses of existing privileges, and remove at least a great number of the causes of forest fire.

Our Memorandum to you of February 14th dealt largely with the commercial loss sustained through forest fires. The commercial loss is indeed great, and it is not our desire to minimize it in the least, but recent events have fixed our attention on the enormous possibilities for the loss of life as well.

We have your assurance, per your letter of May 31st, that the question of fire protection of our forest reserves is receiving the best consideration of your department.

We trust that in the very near future Ontario will be provided with a modern and efficient system of forest protection.

Fort William Board of Trade,  
authorized by resolution in  
Council, August 10th, 1916.

*The Canadian Forestry Journal will be sent to any address for one dollar a year.*

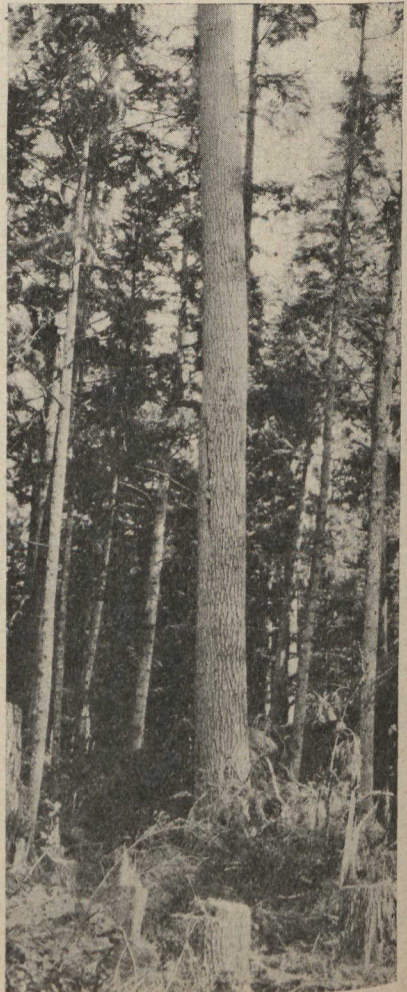
*The Queen Charlotte Islands of B. C.*



Klun Kwot Bay, Moresby Island, Queen Charlotte Group. Hemlock and Spruce Stand.



Naden Harbor Spruce, Graham Island, Queen Charlotte Group.



Masset Inlet Hemlock, Graham Island.



## *With the Canadian Forestry Battalion*

*An English Impression of Their Methods and Skill as Recorded by  
The London Times*

"If you would know the lumberman of Canada and how he works, go to the edge of Windsor Great Park, where the cross-road from Virginia Water Station strikes the main road between Egham and Sunningdale. There, on the Clock Case Plantation, you will see over 150 men of the 224th Canadian Forestry Battalion converting trees into railway sleepers and boards at the rate of anything from 15,000 to 20,000 board feet a day.

"The plantation, which forms part of the lands owned by the Crown and administered by the Commissioners of Woods, and Forests, includes a considerable area covered with spruce, fir, Scots pine, and larch, with an undergrowth of chestnut. Not very long ago a party of experts looked at the trees with the dispassionate measuring eye of the undertaker and gave it as their opinion that from this wood it was possible to get 3,000,000 board feet of timber. To-day whole tracts of it have been swept clear by the axe, and the quaint square tower of the old royal lodge, which stands deep-set in the wood, and which, so the story goes, by its resemblance to the case of a grandfather's clock gave the plantation its curious name, is visible from the roadway for the first time, perhaps, in a hundred years. And still the Canadian woodsmen go on, eating their way through the wood with a thoroughness that knows no mercy.

### *An All-Canadian Venture.*

"The lumber camp is all Canadian—men, machinery, and methods.

The men, who are drawn from all parts of the Dominion, have the bronzed, healthy look and the easy, confident swing which we have learned to look for in Canadians. The khaki under their blue overalls proclaims them soldiers; they draw military pay and they know the rudiments of military drill; but first and last they are woodsmen, with their craft at their finger-tips. Every man knows his task and does it with an enviable independence of orders or instructions; yet from the first stage to the last the work proceeds smoothly and harmoniously. Let us follow the process, under the guidance of the officer in charge and the sergeant who is 'foreman of the bush.'

"Facing the main road stands the mill—'home,' the men generally call it—flanked on the one side by piles of logs and on the other by stacks of sawn timber. Walk along the winding track of a light railway, not yet completed, which passes behind the mill, until you come to a clearing, where burning heaps of 'brush' lopped from the tops of the fallen trees are filling the air with the refreshing scent of the pine. Here and there through the blue smoke you catch a glimpse of a lumberman in a picturesque slouch hat. A little further and you are among a gang of 'fallers.' Watch how they fell a tree, 70 inches or more thick at the base.

"A man with an axe kneels at its foot, and with a few dexterous strokes cuts a deep notch in the trunk a few inches from the ground. Two others with a cross-cut saw

cut through the stem on the opposite side. In half a minute the tree begins to lean, and there is a warning shout. A second or two later, with a loud, cracking and rending sound, it topples and crashes to the ground. Without any apparent effort, the 'fallers' have controlled the direction of its fall almost to a foot.

#### *The "Swamper" At Work.*

"Next, without any ado, half a dozen 'swampers' set to work with the axe clearing the limbs and straightening up the tree. Simultaneously a 'fitter,' with a wooden rod, divides the stem in suitable lengths, marking the cutting points with a notch; while two other men, one carrying a paint pot, measure the tree, enter the size in a book, and mark the stump and the butt of the severed trunk with a blob of red paint to show that their work is done. Sawyers then cut the stem according to the 'fitter's' marking, and the sections are ready to go to the mill. They are dragged there by horses over deeply scored 'trails' and 'sloopways,' and take their turn to come under the saw.

"The mill itself is a stoutly built structure, made of timber cut and prepared on the spot, and saws and engines coming from anada. It is practically a raised platform covered by an iron roof, but open at the sides. A log to be sawn is rolled into position on a 'carriage,' which moves backwards and forwards to carry it through a circular saw. Two men, standing on the carriage, control its movements and the position of the log by a number of levers. Opposite them stands the most important man of all, the 'sawyer,' whose trained eye sees at a glance what can be made of this or that log. The hum of the engine and the screech of the saw would drown his voice, so he gives his decision by signs. As the carriage brings a log back through the saw with the bark removed, he will hold up one finger

or two, and the 'setter' on the carriage, by the movement of a lever, adjusts the log so that the next cut shall be one inch or two inches thick.

"It is all done without a pause. For hours the saw screeches and throws off a spray of sawdust as it slices up the logs that a short while before were splendid living trees, and all the while other saws, trimming the edges of the boards and cutting off the ends, join in the chorus. Is it surprising that the daughter of the keeper of the wood was reduced to tears when she stood by the mill?"

#### **"The Next Dry Summer."**

(Berlin Record.)

"In making the effort to have the survivors return and again begin the task of establishing themselves in the burned district the question arises: What protection is to be given them against another conflagration in the next dry summer?"

"When, a few years ago, the Porcupine fire occurred with its accompanying horrors, the public felt that it would lead to laws being enacted and enforced which would prevent the occurrence of destructive fires. It has not done so.

"The latest horror was the product of numbers of settlers burning slash, uncontrolled and unheeded for weeks, until they spread and united into one great furnace of flame which nothing could stop."

#### **Changed Positions.**

"I feel the same interest in taking part in this conference," said Sir R. Munro-Ferguson, Governor-General of Australia, recently, "as the French ambassador spoken of at a great forestry conference in Washington when I was a little boy. Said the French ambassador: 'I sowed some seed, and they came up so small I could hardly see them; now they are so tall they hardly see me.'"

## Bird Protection in Canada

### *Extermination Threatened for Some Valuable Species— Public to be Won by Aesthetic Appeal*

By *W. E. Saunders.*

Birds, in common with all wild life, are reproducing annually in excessive numbers, and the amount of that excess is governed by the amount of destruction that takes place in the individual species under consideration. As a general rule it may be stated that the total annual death-rate corresponds almost exactly with the annual rate of increase. When it is considered that the annual rate of increase in common birds, such as the robin, is perhaps two, three, or even five hundred per cent., it follows that the annual death-rate is the same. Were it not so, an enormous increase in the number of these species would take place until eventually they would themselves check their increase by their very abundance. This destruction takes place in very many ways. The birds migrate, covering thousands of miles, exposing themselves to very great dangers, often fatal. Besides there are the other fatal conditions to the birds, exclusive of migration.

#### *Aesthetic Importance.*

While we have in the past given very great consideration and thought to the economic side of bird protection, yet the aesthetic side is equally worthy, perhaps even more worthy, of consideration than the economic side. A comparatively small proportion of the population is interested personally in birds from the economic side, while there is a large and rapidly increasing number of the residents of Canada and of the civilized world who are taking great in-

terest in the study of bird life, and this study is of very great benefit to the individual as well as to the nation at large. It has a refining influence upon the student and yields an amount of enjoyment which I hesitate to estimate because it is such a personal matter with me. To one who has made a life-long study of birds, it is a very pleasant thing to go into the country and meet at every turn friends whom one knows; it is like going down street and meeting all one's most pleasant acquaintances in one afternoon.

#### *Domestication of Birds.*

Probably every bird is capable of partial domestication while in the wild state. I was very much interested a couple of years ago at a meeting of the American Ornithologists' Union in a paper by Miss Sherman on "The Taming of the Wild Humming-bird." I suppose the small size of the humming-bird and its almost insect-like character had given me the feeling that it was incapable of domestication or of knowing its friends, but she demonstrated that she had domesticated them to some extent. She actually tamed them so that they came and buzzed around her head for food. She began with bottles of syrup hidden in the base of a gaudy artificial flower; from that she progressed to the bare bottle, and the humming-birds came most freely; they quite expected the syrup, and promptly demanded it from her if the bottle were found at any time empty.

*Jack Miner's Experiments.*

From the humming-bird perhaps the longest step we can take is to the wild goose, one of the wildest as well as largest of our birds. Jack Miner at Kingsville has the most spectacular demonstration every year on his farm of the possibility of temporary domestication of this bird. One morning last April, 1,000 wild geese came to his farm, all of which lit within 150 yards of his house. Many of them—by actual count 425 geese—were in the small enclosure right in front of his dining-room window. I went into the enclosure with him, and found it quite possible to walk to within fifteen or twenty feet of the nearest goose; but, when those geese were out on the lake, two miles distant, it was exceedingly difficult to get a boat within half a mile of them. In one case, they knew absolutely they were on safe ground, and in the other case they suspected danger, because man is a dangerous animal. To them, however, the man who goes around Jack Miner's place is safe, and, therefore, they are not in the least alarmed. It seems that the birds have methods of communication, not only between members of their own species, but with others, because one day during last year's migration, while the geese were visiting Miner's place, on four different occasions flocks of wild swans flew over, apparently to see if these stories the geese were telling about the safety and pleasant conditions on Miner's farm were true. But while the swans found they were apparently true, because the geese were down in the ponds on the farm, they felt like the farmer who, seeing the giraffe at a menagerie, said: "There ain't no such animal." The swans looked at the geese and said: "It looks safe, but cannot be"—and went away. And now Miner's ambition for next year is to have some swans there in order to assure these wild fellows that it really is all

right on his farm. Perhaps I might take it upon myself to urge upon the members of the Committee on Fisheries and Game that probably the most spectacular demonstration of protection that you can see on the continent of North America is at Jack Miner's place in Kingsville any day in April while the geese are there. They come in March and leave in May, and the number is limited only by the amount of corn that Miner, who is not a very wealthy man, can afford to feed them. During the migration season last year I believe he fed them about three hundred bushels of corn. That does not cost a great deal of money, but then he is giving it to wild geese and for the benefit of the country at large. I am not sure that in any year I have spent out of my own pocket the value of three hundred bushels of corn for the benefit of the country at large. Of course, Mr. Miner gets personal enjoyment out of it, or he would not do it, and his work with the geese has resulted in an entire change of condition in his township. Settlement banished them, and twenty years ago there were none. When he began his experiments about twelve or fifteen years ago, he obtained a few domesticated Canada geese and kept them in an enclosure, hoping to lure wild geese to visit him annually, but he had the tame ones there for a number of years before the wild ones came. Eventually they did come, seventeen visiting him the first year. The next year there were thirty, then one hundred and fifty, then five hundred in the fourth year, and after that Miner said he could not count them, that he had about "five acres" of geese the year following. It is all very well for a person to talk about quantities of wild geese, but nothing is so convincing as to see them for yourself, and if the members of the Committee could spare the time to visit Kingsville next April, I am sure they would be im-

pressed with the value of even individual effort, though much more could be accomplished if the matter were handled on a little larger scale. On Miner's farm there are two ponds, one, thirty-five yards across, the other thirty by fifty or sixty, yet they accommodated between 1,000 and 1,500 wild geese last spring.

#### *Birds Near Home.*

Coming down to smaller things, the protection of the ordinary birds around the home, it is not often that we can get figures that are exact and reliable. In fact, not very many people have tried or have made serious effort to encourage the birds and increase their numbers. But I was told the other day about what seemed to me to be really a very spectacular result. A family, residing in the summer on a little island, about three-quarters of an acre, in the Rideau Lakes, had one or two cats. A visitor there induced his friends to leave the cats at home. Then he began to put up nesting boxes to attract the tree swallows, and they came at the first invitation. Up to 1915, he never got enough boxes up on that island to accommodate the swallows who came. But this year he got up a few more boxes than were needed, and, in seventeen boxes, he had fifteen pairs of swallows on an island that formerly had two cats and five pairs of birds. In addition he had three pairs of orioles, two pairs each of five other species, and one pair each of five others, a total in five years of thirty-three nesting pairs on three-quarters of an acre from a beginning of five pairs. I think that was a very creditable result indeed.

#### *Extermination Imminent.*

In North America it has been the habit to await practical extermination before anything is done for the wild things, either animals or birds, with the exception of the game which is so highly thought of by

the hunter. In fact there has been so little done for birds that, in the United States, practical extermination has actually taken place in the case of some birds. There are some birds that really require immediate assistance, and, if one ventures to make a prophecy, it must not be considered as exact in terms of years. We can never tell when the last of a species is with us, and, though a species that seems to be in danger of extinction may remain in fair numbers for years without apparent diminution, it may then come to a time when it practically drops out of existence all at once.

#### **Borers in Stanley Park.**

(From The Western Lumberman.)

"The destruction being wrought to trees in Vancouver's magnificent natural park by the voracious bark beetle is showing little, if any, diminution as a result of prevention measures carried out during the past two years by the park commissioners, who were guided by the advice given by experts sent here by the agriculture department of Ottawa.

"A more determined effort is now being made to cope with the danger, Dr. Gordon Hewitt, the head of the entomological section, having arrived in Vancouver early in August with four trained assistants, their mission being to make a closer investigation of the extent of the damage already done preparatory to advising the parks board as to the best measures to be taken under the circumstances.

"Dr. Hewitt suggested that the affected trees should be cut down and that Douglas firs should be planted in their places. In a few years, as he pointed out, there would be as fine an array of trees as the citizens of Vancouver could wish for, but under existing conditions there was the probability of nearly every tree being rendered dead, so far as Stanley Park is concerned."

## Plain Facts for Coast Lumbermen

"The recent return of Mr. H. R. MacMillan, provincial chief forester, from an eighteen months' tour of many countries as special lumber trade commissioner for Canada, very naturally whetted the curiosity of our leading manufacturers, and no time was lost in affording that gentleman an opportunity to place before them in concrete form the valuable information he had acquired relative to export possibilities by personal enquiry and investigation in the world's leading lumber marts," says the Western Lumberman. Their eagerness to hear the report was only natural, Mr. MacMillan's appointment being the result of representations repeatedly made to both the Federal and Provincial governments that the British Columbia export trade in lumber was steadily dwindling, and that this constituted a grave danger to the prosperity of the industry, the prairie provinces and Eastern Canada being unable at the best of times to absorb one-half the possible cut of the existing mills.

"Mr. MacMillan made plain the fact that it is going to be an uphill fight to increase the sales of British Columbia lumber in the countries already visited—England, France, Holland, Africa, India, Australia and New Zealand, and no doubt the same difficulties will be met with in China and Japan, yet to be covered. The adverse factors are serious indeed, but should not prove insurmountable if our lumbermen are really in earnest in seeking a larger share of the world trade in lumber. Mr. MacMillan declared that almost everywhere the prospects for business were very bright, and that following the war there was bound to be a tremendous demand for forest products, but unless the British Columbia manufacturers are able to sell

their lumber on a competitive price basis they need expect no considerable share of the prospective large cargo trade in lumber. Referring to this phase of the subject Mr. MacMillan said:

### *Must Co-operate.*

"To summarize the result of my investigations so far as the export trade for British Columbia mills is concerned, I believe that unless the mills here can get together and by co-operation in the supplying of lumber, by close study of market conditions—the lumber business is a speculative one to a great extent—and the securing of cargo space, we will not be able to compete with the exporters to the south. In every British territory I visited I found a unanimous disposition on the part of the firms handling lumber to keep their business within the Empire. But they expect, and rightly so, that this inter-Imperial trade shall be done on a business basis, that is, that the British Columbia exporters must give competitive prices; must fill orders according to the specifications, and that the quality shall be what is being paid for."

"Assuredly the lumbermen must have listened to the following with regret that our fair province is being cheated of the credit which is its due:

"We, here in British Columbia, are wont to believe that British Columbia lumber is the standard of the world, that everywhere this province's name is known. It will doubtless be a keen disappointment to many to learn that so far as the lumber trade, at least, is concerned, by far the great portion of our exports—I am talking now of ante-bellum export business, for there has been virtually none since war broke

out—were shipped through United States firms, billed as American lumber. Another fact which impressed itself upon me was that the San Francisco firms which do the great bulk of the export business from this coast are steadily going after the business and getting it.

#### *U. S. Uppermost.*

"I must confess it made me almost indignant when I saw, practically everywhere I went, that the lumber, including British Columbia's product, is sold through United States firms. The importers of the countries did not know that any of it came from this province. We have the raw materials, but sadly lack organization to sell it to the world. In the last twelve years in Australia our lumber exports have fallen from 32 per cent. of the total imports to less than three per cent. Then the business was done by schooners, and the mills here could take the risk of chartering such vessels. Now the business is done in steamers operating by the trip or on time charter, and carrying a large shipment on each trip. In San Francisco and other Pacific Coast ports in the United States the exporters have organized and made a study of the export situation; have steadily gone after the business of the entire Coast. They control the charters, and practically what business British Columbia gets is by their consent."

#### *Empire Sentiment.*

"Concerning the future Mr. Mac-Millan had this to say:

"My trip convinces me that the chief competition will come from the Puget Sound, especially for our staple product, the Douglas fir. In Europe such countries as Norway and Sweden will be strong competitors in some lines, but in the bulk of our staple lines their competition will not be serious. Russia is as yet an unknown factor in the export

trade. My trip has showed me that everywhere under the flag the people are anxious to buy British products, and if a reputable firm comes along with a product which appears to be equal to what they have been getting they will give that firm the preference over an alien concern."

#### **Benefit of Brush Disposal.**

(From R. H. Campbell's Address before B. C. Forest Club.)

"British Columbia has done some brush disposal, as has also the Dominion. The value of such work in protection is very great. Slashes left from timber operations in many cases make protection an impossibility. We have tried to enforce brush disposal in spruce and jack pine, and in all operations under our control the clearing up is now done fairly well. While there was and is objection by the operators to the disposal of brush, they are learning in the doing of it that it is economically possible and is a great safeguard, and the opposition is growing less. In regard to reproduction the method for securing it has not been thoroughly studied, and in our anxiety to get rid of brush we may at times have interfered with reproduction, but at present we think it better to err on the side of safety against fire.

Another branch of our work is forest investigations. Mr. Miller spoke to you about that work in the Dominion Forestry Branch, and we hope to give that division more attention so as to establish a scientific basis to work on. Most of the investigations at first will, of course, be on Dominion lands. In those provinces where there are organized forest branches they will doubtless handle this work themselves, but we will be equipped to co-operate with them and help them in their work. Then again, we will have to attend to the work in those provinces where there is no forest service."

## **Forest Fire Damage from Coast to Coast**

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### ***A Strong Testimony to Thorough Organization and an Indictment of Loose Methods in Forest Protection***

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The fires in the Lake St. John and Saguenay districts of Quebec undoubtedly have been severe. A statement received by the Journal from a Quebec forest service official asserts that the origin of the trouble was not settlers' fires, but berry pickers. A proposal is now before the Department of Lands and Forests at Quebec to prohibit trespass on timber limits for the purpose of gathering balsam gum and berries.

A series of reports reaching the Canadian Forestry Association indicate that almost the whole Lake St. John region has been on fire, and there has been a fire nearly sixty miles long on the Transcontinental, west of Escalana, and another at Escalana. A fortunate rainfall prevented contact with the limits of the St. Maurice valley. The extent of the timber damage is now being ascertained by officers of the Quebec Government.

#### *Action Needed Here.*

Beyond any doubt the ravages of the 1916 forest fires outside the borders of the closely-organized associations (the Lower Ottawa and the St. Maurice) will prompt the Department to take yet another forward step in protecting the timber resources of the province. Hon. Mr. Allard has shown not only a keen appreciation of the importance of the timber assets, but anxiety to apply the most modern and reasonable methods of protection against fire. It is but logical, therefore, that conservationists should look to him for whatever remedy will fit the in-

equalities now existing in the forest areas beyond the association territories. The Lower Ottawa Forest Protective Association and the St. Maurice Forest Protective Association have built up excellent systems of timber guarding. Their authority, however, applies to their own territory, and fire is no respecter of human jurisdictions. While these associations can cope with their own troubles, it does not seem fair that they should be constantly on the quiver, and put to heavy extra expense to save their timber from fires originating in loosely patrolled territory nearby. These protective associations cannot erect a fire wall about their borders. They are continually exposed to fire risks coming from outside. Whether the Minister would favor compulsory organization of all licensees into mutual protective bodies, or prefer to strengthen the present plan of fire prevention everywhere in the "non-mutual" territory is a matter that can safely be left to his consideration.

#### *Thoroughness Wins.*

The great point to bear in mind in considering the year's fire record in Quebec Province is that where patrol was thorough, with close inspection of rangers, and aided by the wise Quebec law obliging settlers to secure permits before setting out fires, the degree of protection was excellent.

*On 12,000 square miles of the St. Maurice Forest Protective Association, from April to September, this year, only one fire could be traced to*



human hands. The balance were due mostly to lightning. Considering what this territory has suffered in the past by settlers, river drivers, berry pickers, etc., starting fires when they pleased, and taking no precautions, the showing is nothing short of amazing. The cost of extinguishing fires has been only one-sixth of what it was in 1915. The reader will bear in mind, too, that such a degree of protection has been procured by thorough organization alone, for the territory is as much subject to fire damage as most other parts of Quebec.

#### *Real Fire Fighting.*

In the territory of the Lower Ottawa Forest Protective Association, the season's experience has been equally an endorsement of sound organization and muscular management. In August, 35 fires were encountered. Dangerous as these were, they were promptly reported by the rangers, and a body of five hundred men, composed of settlers and lumber companies' employees,

were set to work in small detachments. They succeeded in isolating each fire, thereby preventing an amalgamation of fires, and eventually put out all of them. This involved, of course, a heavier account for fire fighting than in 1915, but the fact of first importance is that a negligible amount of green timber was burned. As on the St. Maurice limits, most of the trouble came from lightning, an abnormal condition due to excessively dry weather and a multitude of storms.

Some highly destructive fires are reported by licensees in the Black River and Kippewa district of Quebec. Some of the finest pine in Canada has been cleaned out, and companies are rushing in camps to salvage whatever is possible.

Ontario, outside the Claybelt section, has enjoyed comparative immunity from fire losses this year, and it is doubtful if the total timber damage in the more southerly territory will be any heavier than in 1915, a very light fire year.

## *Fires in the Prairie Provinces*

The fire situation in the provinces of Manitoba, Saskatchewan, Alberta and in the Railway Belt of British Columbia has on the whole been exceptionally good throughout 1916. Wet weather has in nearly all regions prevailed throughout the season, at least up to the end of July. The regular reports do not cover any time later than the end of July, but no word has been received of any serious fire situation occurring in any region during August. The only exception to the above statement has been the district in the vicinity of the Pas, Manitoba, and along the Hudson Bay Railway, where it was rather dry during the middle of the summer, and a num-

ber of fires occurred. It has also been dry along the route of the E. D. & B. C. Railway in the vicinity of Lesser Slave Lake and Fort McMurray. There are indications also that unfavorable weather conditions obtained in August in parts of British Columbia, but detailed reports have not been received. On the whole the damage due to forest fires in the territory under the jurisdiction of the Dominion Forestry Branch has been much less this season to date than in any recent year. The wet weather has promoted a very heavy growth of grass and vegetation, and when this becomes dry in the fall, an absence of rain at that time might make the fire situation serious.

## The Fire Season in British Columbia

By R. E. Benedict,

*Assistant Forester, Forest Branch of British Columbia, Victoria, B.C.,  
Sept. 8, 1916.*

The late spring throughout British Columbia, retarding the growth of vegetation cover, marked an ominous opening of the fire season. These conditions were alleviated by general rains during the middle of May, although the northern interior did not participate in this to any degree, experiencing hot weather with high winds, and only light and local showers. By the end of the month the situation had become critical, notably in the Fort George division, and to a lesser extent in the Hazelton forest district, a large number of fires being reported, taxing to the utmost the forest protection organization in the two affected districts. Much timber was destroyed or damaged, some fifteen million feet in all, and several settlers were burnt out.

Many outbreaks having been traced to the work of incendiaries and to persons violating the fire law, prosecutions were set on foot and penalties inflicted, while as a precaution all fire permits in the dangerous areas were suspended. In the southern interior and in the coast districts a cold, wet spring reduced the hazard to a minimum, a rich growth of vegetation acting as a check upon the spread of fires, and by the middle of June danger from the spring fire season was over.

### *Guards on Improvement Work.*

During the spring much activity was shown in disposing of slash under permit, throughout the province, and a satisfactory reduction of this particular class of hazard by settlers, logging operators, road and telephone officials, was made. Not

until August did dangerous conditions again manifest themselves, a succession of hot spells occurring, fortunately with rain following, and although several fires broke out in the coast and southern interior districts, they were easily controlled. The comparatively light hazard enabled many of the guards to be transferred to improvement work in their respective districts, cleaning out and constructing trails, repairing cabins and telephone lines, and attending to work of a like character. The cooler nights and heavy dews experienced at the end of August constituted a check upon the spread of fires and caused an absence of other than small outbreaks. In the early part of September a large number of fires in old slashings were reported by the Vancouver district, but these were under control, and, far from doing any damage, were cleaning up logged-off areas.

### *A Favorable Season.*

Barring the rather serious outbreak of fires in the spring along the Grand Trunk Pacific Railway, the season has been a remarkably favorable one from the fire protection standpoint. The reduction in the number of regular long-term fire wardens, rendered necessary through enlistment of many members of the force, and through necessity for economy, was partly balanced by the lessened human hazard, due to the war and economic conditions, and the decrease in transient population. However, the long-term men are only considered as a skeleton force, sufficient to handle the normal hazard, and arrangements were

perfected to employ a large number of extra patrolmen if the weather became dangerous. The need for such an increase in force fortunately did not arise and the regular force were able to readily meet all demands made on it.

In 1915 the cost of fire-fighting, with claims, amounted to \$19,449; this year it will, from present indications, not exceed \$5,000. Last year the cost of patrol for the sea-

son totalled \$157,432; this year it will be covered by \$135,000. In 1915, the forest protection force, consisting of rangers, forest guards, patrolmen, lookout men, etc., numbered 254, as against the 1916 force of 210 men. The fires reported in 1915 numbered 1,031, but it is not anticipated that when the final returns for 1916 are received the number of outbreaks will reach half this number.

## *A Northern Ontario Point of View*

### Absentee Landlords.

It seems rather significant that the settler who has the beginning of a nice clearing with house in it, crop growing, and his family living with him, is becoming insistent that some sort of supervision of setting fires to slash should be made by the government, and that it is the absentee settler who insists on indiscriminate burning of the bush; the man whose family is safely housed in town, and who does not appear himself on his farm, but only to set some more brush on fire when the season is driest and the wind strongest, the man whose sole possessions on the farm consist of a little two-by-four log shack, unfurnished, and like as not half falling to pieces, the man who is holding the land for the unearned increment, and we have rather too many of them around here. We venture to say that if the government would place sane laws regarding fire supervision and fire ranging on the statutes which would make it a criminal offence to set out fires without permit, it would not be the bona fide settler, but the land shark who would have to pay the penalty, and it should be heavy enough to deter others.—Cochrane "Claybelt," Aug. 25, 1916.

### What Compensation?

But why should we be so over-anxious to want this country denuded of all bush? Where does the compensation come in of wantonly destroying every stick of timber, even if some of it is only scrub, which nevertheless comes in mighty handy for fence work and even fuel. Why not go at once to the prairies, where at least we have the redeeming feature of still having some loam and humus to plow under the clay. Perhaps even around here at Cochrane, where still a lot of green bush is in existence, we do not quite realize what it means to have the country totally denuded right down to the bare clay, but one has only to go as far as Matheson to fully understand what havoc and what devastation the continued burning over of the land really means. When we see settlers there who actually have to buy fence posts from afar, not to speak of building material generally, who have to buy, in some instances, even this winter's fuel, who have to start in at once to manure their land if they want to get any crop at all next year, then we wonder, even making all due allowances for that ambiguous "if," where the added value to the land comes in.—Cochrane "Claybelt," Aug. 25, 1916.

## Fire Situation on the Railway Lines

By Clyde Leavitt,

*Chief Fire Inspector, Board of Railway Commissioners.*

The experience of the present season has proved conclusively that, with very few exceptions, the Dominion chartered railways of Canada have faithfully observed the requirements relative to fire protection imposed upon them by the Board of Railway Commissioners. The proof of this lies in the fact that, notwithstanding the exceptionally dry season, practically no forest fires of any serious consequence have occurred which could be attributed to railway agencies. It is true that a good many fires have started, many of them resulting unavoidably from the operation of trains, but the records show that, in general, the railway employees have been prompt in discovering, reporting and extinguishing these fires before they had time to cause serious damage.

Especial care has been taken by the companies in keeping the fire-protective appliances of engines in good order, and a large amount of work has been done in disposing of inflammable debris on rights of way. Special patrols have been maintained in forest sections, supplemented

on all lines by the observance of special instructions to all regular employees relative to the reporting and

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extinguishing of fires in the vicinity of the track.

Not only have the railways been remarkably efficient in handling their own fires, but they have extinguished or aided in extinguishing many fires that originated at a distance from the track, due to all sorts of outside agencies. They have co-operated, wherever possible, with governmental or private fire-protective agencies, with beneficial results which, a few years ago, might have been thought impossible.

Reports indicate that, in many sections, settlers' clearing fires are the most serious source of fire danger. The experience of this year indicates the extreme importance of controlling this hazard, through the strict enforcement of existing legislation in Quebec, New Brunswick, Nova Scotia and British Columbia, and the enactment and enforcement of similar legislation in Ontario.

#### *Society's Debt To the Settler.*

"Catholic Register," Aug. 10, 1916: It is a sad lack of organization in the pioneer life of our outlying district that exposes such numbers of people to loss and suffering and death.

The appalling result shows how urgent is the need of establishing and rigidly enforcing the very strictest laws on the subject of bush fires.

#### *Community Interests.*

Dundas "Star," July 27, 1916: The interests of the community are of more importance than those of the individual, and we must legislate accordingly.



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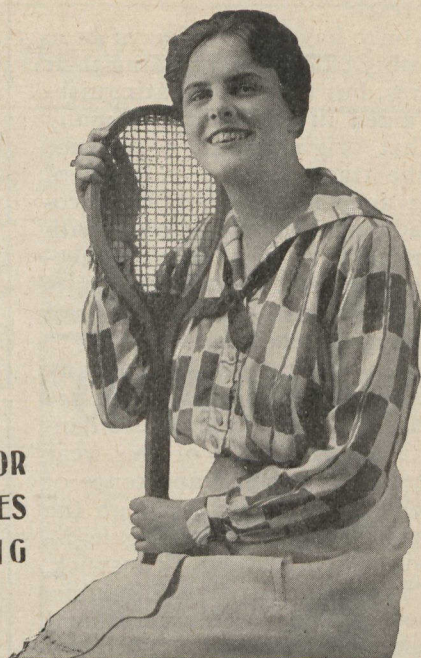
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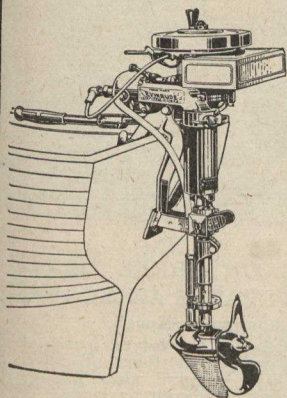
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### Forest Fires May Make Pulpwood Dearer

(From "Paper," New York.)

Watertown, N.Y., Aug. 29.—The destructive forest fires that have been raging in the pulpwood tracts of the forest of the Provinces of Quebec and Ontario during the past several weeks may prove a factor in forcing up the price of pulpwood this fall. The cutting for this year was unusually small, being several thousand cords less than that of a year ago, and this, coupled by a loss by fire, will probably make a material difference in the price it is said.

E. W. Elsworth, the controlling factor of the Summerville-Elsworth Company, which deals in Canadian wood purchased in the lower part of Quebec, is of the opinion that the price of wood will be much higher this fall than it now is. Where peeled wood is now bringing \$13.50 he is of the opinion that it will go to at least \$15, and roused wood that is now selling for \$15 he believes will go close to the \$17 mark.



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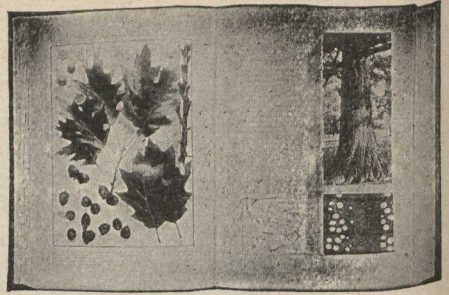
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### A Boy's Plucky Act.

The following letter is commended to the attention of every reader of the Journal. It was written at Danford Lake, Quebec, by Arnold Heeney, 14 years of age, to his father, Rev. W. B. Heeney, Rector of St. Luke's Church, Winnipeg, and testifies to a genuine conservationist spirit in the lad, as well as to his courage and unselfishness.

After telling his father of the excessively dry weather, the boy proceeds:

"You almost lost your Holmes' place by fire. Uncle Percy went to Ottawa yesterday, and as he passed the place where the creek used to be, on the way to the station, he noticed smoke coming from the bush away to the right of the hill. He jumped off to investigate, and found fire in an old pine stump quite a way into the bush. He met Uncle Willie Rogan and asked him to see that we hired some men to put it out. As soon as we received the message I tried to get a man to help me, but as I couldn't I had to go by myself, and set out with an axe and a shovel. By the time I reached the fire it had burnt out of the stump about twelve feet, and was catching on the lower bows of the spruce and cedar. The flames were quite high, and the smoke choked me. The first thing I did was to quell the flames, and then I cut down all the trees in the fire area (about 7). As there was no water near, I threw sand on till the fire was extinguished. It took me about two to three hours. I have gone back to look at it several times since, and all danger is past, so don't worry. I was pretty tired when I finished, and was absolutely black."



### HANDBOOK OF TREES OF THE NORTHERN STATES AND CANADA

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"The most valuable guide to the subjects ever written."—Springfield Republican.

### AMERICAN WOODS

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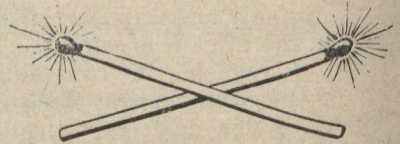
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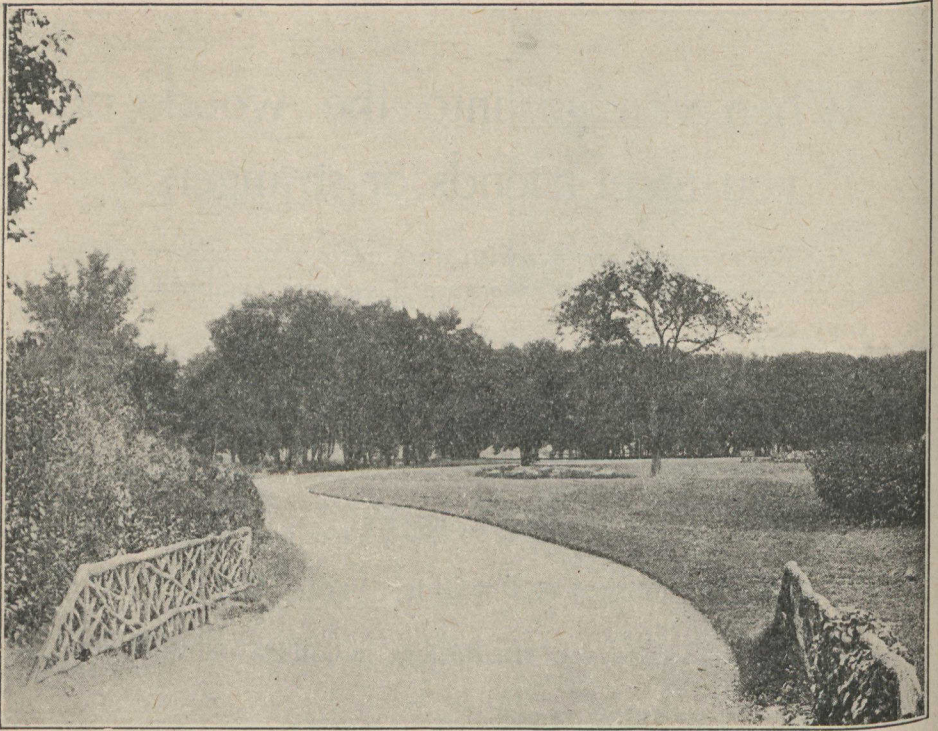
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## *An Appreciation of the Pine*

"The pine is evidently typical of a bleak and inhospitable climate. It is associated in our minds with the gray skies and the rude winds of the North. It forms an essential element of the grandest mountain scenery; and enters into the composition of some of the most magnificent scenic pictures, which the great artist has painted on the canvass of this world, for the admiration of his creatures.

"To the offices which, in bleak and elevated situations, the pine performs, may be traced much of the beauty and fertility of the earth, and much even of the happiness of man. Standing on the mountain tops, its fringed forests catch and condense the passing clouds, which

distill from their branches into the shaded soil, and, percolating moss and grass into the heart of the rocks, flow down by an appointed channel a rejoicing stream into the valleys. When the pine forests on the mountain heights are cut down, the springs and rivulets of the low grounds are exhausted, and the climate is rendered hotter and drier.

The destruction of the grand pine woods that once clothed the Appenines, has rendered the Papal States a region of poverty, disease and wretchedness. In Greece the traveller looks in vain for the old legendary fountains, rivers and lakes, with which the classic poets had made him familiar; the water nymphs have vanished along with their sorrowing sisters the Dryads.

**The Picture Abroad.**

To put under forest all land not under annual crop is the dream of the conservationist. Even in that land of intensive cultivation, China, there are large areas which, having been denuded of their trees, have been subsequently washed by heavy rains until all the surface that had been enriched by plant life has been eroded and the rolling clay hills are dead land on which the water falling immediately runs off to the rivers, to cause floods in wet seasons far away. Any one who has travelled through such deforested areas as South Africa and seen its dry kloofs transformed by an hour of rain into dangerous torrents, gets some conception of the extent to which forests act as reservoirs. Is the wilderness of Sinai dry? One traveller tells how he saw a torrent in those bare mountains rise thirty feet in half an hour. The world is full of glaring examples of the devastation caused by de-

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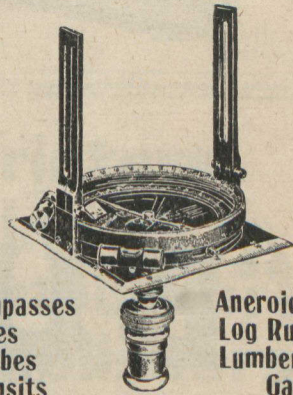
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nudation. One is being forced upon us strongly just now by the campaign in Mesopotamia, once the seat of the world's greatest empires and most teeming millions. Our campaign there has been a moving picture of calamities caused by nature. At one time the tale is of heat and sunstroke, and of long marches to where no water was. At another it is impassable floods. Almost never have there been even tolerable conditions. Yet there is the traditional site of the Garden of Eden. "There the fair tree of knowledge grew." There civilization reached astonishing heights in history's dimmest distances. Or take the Holy Land, which was once the paradise of a people's hopes, the summit of the world in the people's conception. In the days when it was the promised land, full of crowded cities, a man was famous, according as he lifted up his axe upon the thick trees. Who that sees it now can realize what it was? Spain, once the garden of the earth, has relegated much of its surface to wilderness of bald rocks.—Montreal Witness.

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### Bird Protection.

New York.—Persons and organizations here who are interested in the protection of migratory and game birds are elated by the ratification of the treaty between Canada and the United States intended to insure the co-operation of the two countries in bird protection.

Wm. Thornday, of the New York Zoological Society, and a campaigning trustee of the Permanent Wild Life Protection Fund, says the treaty is the most important step ever taken to protect birds.

"It means," he said, "that virtually 1,022 species and sub-species of our most interesting American birds will be protected from the Gulf of Mexico to the North Pole.

"It is of prime importance to the farmers, the forest owners, and the fruit growers, since it means that the birds which kill the insects will be conserved."

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### The Paper Famine.

Many Canadian newspapers received notice this week from American publishers notifying them that there would be no further exchanges sent out. This stopping of all exchanges is part of a plan to save paper. Other publishers are cutting down the size of their papers and effecting various other economies in an effort to save white paper.

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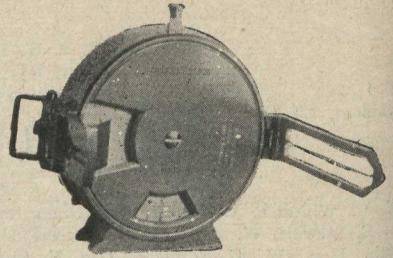
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