

# The Illustrated CANADIAN FORESTRY Magazine

VOL. XVIII

OTTAWA, CANADA, DECEMBER, 1922

No. 12

## *This Issue Contains:—*

*The Coming Holo-  
caust -- Can We  
Stop It?*

*By Dr. C. D. Howe*

*The Spirit of  
Christmas.*

*By Robert Stead*

*The Fire Fiend's  
Threat to the Fur  
Trade.*

*By Angus Brabant*

*A Message from  
Canada's Premier*

*A Call to Action.*

*By Hon. E. C. Drury*

*And many other  
special seasonable  
features.*



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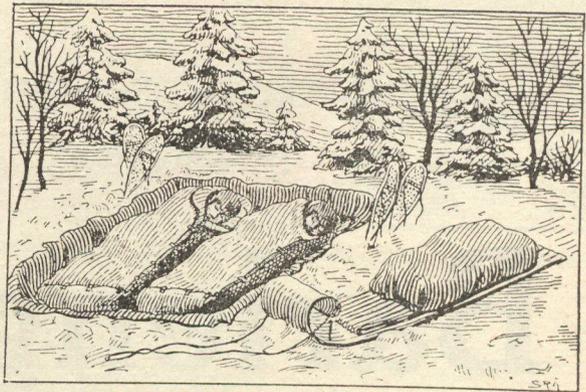
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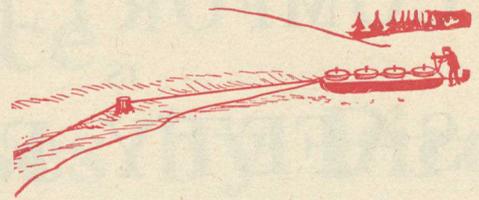
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# THE ILLUSTRATED CANADIAN FORESTRY MAGAZINE



*A Monthly Publication, National in Scope and Circulation, Devoted to the Conservation and Development of Canada's Forest Resources*

VOL. XVIII

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**Designed and Developed for Winter Hauling, in the North Woods**



Linn Tractor Hauling 62½ Cords of Mixed Spruce and Hemlock

**T**he Canadian Logger has evidenced his appreciation of the value of the Linn Logging Tractor for log haulage.

This winter the Linn Logging Tractors will be found operating as far East as Newfoundland and as far West as the Port Arthur District, and as far North as Cobalt.

**I**t is our hope that every Canadian Logger will this winter avail himself of the opportunity to see Linn Logging Tractors in operation during the haul.

As Linn Logging Tractors will be in operation this winter within easy reach of every locality in Ontario, Quebec and Newfoundland, any operator will be able to see a Linn Logging Tractor operation without loss of much time from his own operation.

*We will gladly supply any interested operator with the name of his nearest neighbour who is using Linn Equipment.*

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# The Coming Holocaust--Can We Stop It?

A Stern Warning to Canadians that a Great Forest Fire Disaster Can Only be Prevented by Immediate Public Action

By Dr. Clifton D. Howe,  
Dean, Faculty of Forestry, University of Toronto

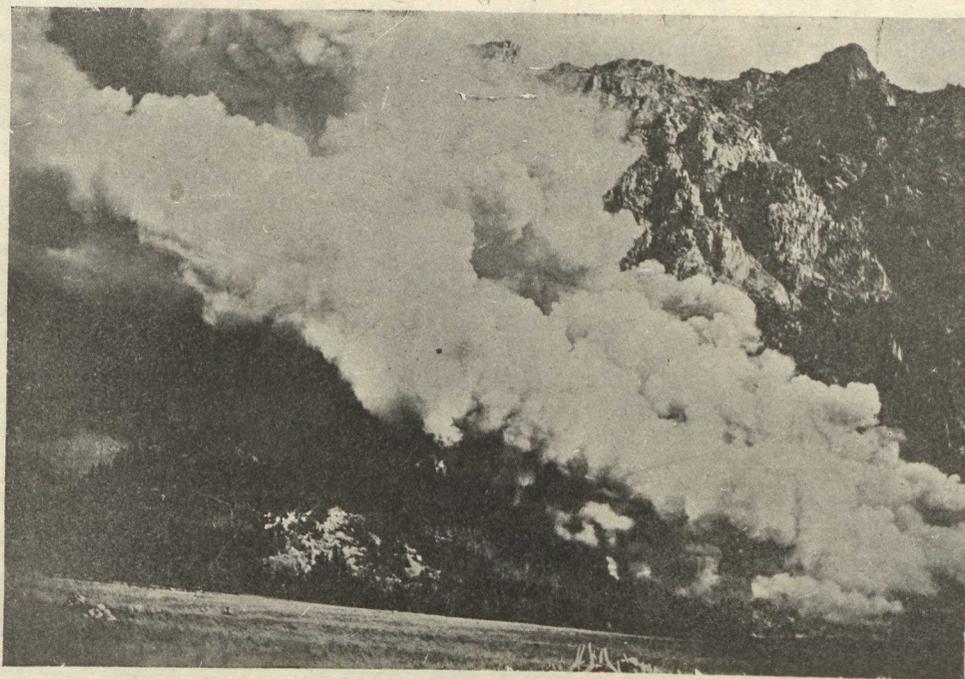
NOT long ago a man who had been through the Porcupine fire, of 1911, came into my office. He had lived and worked in the north country; he had helped, about twenty years ago, to lumber the site where the town of Cobalt now stands; he had tried his hand at farming; he had fought forest fires and settlers' fires in the neighborhood of Haileybury. We discussed the difficulties in the way of adequate fire protection, both in the forest and in the farming communities of Northern Ontario. The point was made that in the areas in which settlement is taking place it is a soil clearing rather than a forest clearing problem. It is not very difficult to control the burning of brush and uprooted stumps that result from converting forest into farm. Fires from such debris quickly burn out and get out of hand as a rule only through gross carelessness. Clearing the soil of the deep over-lying layer of peaty material and vegetable matter, however, is much more difficult. This accumulation of duff is too deep to plow under. Scraping it off and carting it away or even scraping it into piles and burning it, would make the cost of tillage prohibitive. The only practical and effective way, said my informant, was to burn the thick carpet of vegetable matter as it lay naturally spread out over the soil. This humus deposit is usually too moist to burn except in the very driest portions of the year. At best the

lower portion of the stratum burns but slowly; little progress in preparing the soil for the plow can be made if the fire is quenched every night. Therefore, it is allowed to burn for days at a time. Hundreds of these soil clearing fires are burning in the colonizing districts of the north every summer. Nearly every summer some of them get out of bounds, but are prevented from doing serious damage by the fire rangers. Periodically, however, an excessively dry period occurs and these hundreds

of a disastrous conflagration. You prohibit the settler's soil clearing fire and you prevent, or seriously restrict, the further agricultural development of the region." "That is the exact situation," my informant replied. "Well," I asked, "What is the answer, what is your solution of the problem?"

"I DON'T know. I am not sure there is one," he said. "Whatever it is only time and patience can work it out. Those who live in the older settled portions of

Ontario, before they judge too hastily, should understand the conditions of settlement in the north country, not forgetting to take into consideration the psychology of the pioneer." He re-lighted his pipe and after gazing meditatively for a moment through the enveloping haze, he continued: "It might be that some progress could be made toward the solution of the problem through a commission investigating thor-



oughly the nature of the soils on which settlement is taking place to determine what proportion of the soil is actually covered with a layer of humus too deep to be plowed under. It may be that we north-country people have over-emphasized that point. Such a commission might investigate the possibility of grouping the areas to be developed into farms. The farm buildings could be located in the centre of the cleared areas far enough from the edge of the forest to be comparatively safe. Greater security from fires would not be the only advantage of segregating the

"What is your solution?"

"AS I understand your outline of the conditions in the regions in which settlement is taking place," I said, "the situation is this: The soil can be prepared for the plow without prohibitive cost only by burning off the deep layer of decaying vegetable matter. The drier the season, the easier this duff is burned and at the same time the greater is the danger

farming population. It would lead to better schools, better churches, better roads, and, in general, to the better well-being of the community."

### The great Fire that never broke out.

My caller gazed meditatively out of the window at the purpling trees in the Park outlined in the afterglow of the setting sun. I thought the interview was ended, but he turned suddenly and said, with great emphasis: "The really big Porcupine fire never occurred. I had helped that day in collecting the bodies of the victims, some thirty or more, and in the evening I went up onto the hill back of the mine, where I counted in the adjacent territory twenty-six separate fires still burning. The country was dry as tinder. I said to myself, 'My God, what will happen tomorrow?' That night there was a drenching and soaking rain."

A few days after the conversation described above, a man who had been through the Matheson fire, in 1916, called upon me. He told me many horrible things that happened in that fire. One was his seeing beside the railway track a pair of scorched shoes, a set of corset stays and few gold-filled teeth—all that was left of what was once a woman. When he was finished with such details of the tragedy, he said: "It was a day of horror, but let me tell you that the most horrible thing didn't happen. The great Matheson fire never took place. There were settlers' fires and bush fires everywhere. The country was scorching dry. Everything was set for an astounding holocaust, but that night it rained."

The conditions preceding the recent Haileybury fire are still fresh in memory. Two weeks of unseasonably hot and dry weather. Settlers' fires by the hundreds. Then came the high wind and the disaster followed. It is obvious that the really big Haileybury fire didn't occur, for that night it rained.

### When the rain fails us.

The rain will not always lend its protecting influence. Some day there will be a disaster indeed. Not only in the colonizing areas are conditions ripening, but throughout the forested areas as well. In fact, there never has been so much slash and debris in the forests awaiting a prolonged drought to convert them into highly inflammable tinder. Lumbering operations every year are becoming more highly intensified; more trees are cut on a given area and more slash is left on the ground. Larger openings are made in the forest and the duff and litter on the forest floor are more rapidly and more thoroughly dried out—often so dry that they crumble to powder when taken in the hands. This highly dangerous condition is augmented a thousand-fold by the ravages of the bud-worm and other death dealing parasites. It is estimated that the budworm alone has killed over 30,000,000 cords of balsam in Eastern Canada within the past few years. This means that more than a half billion trees will go to the ground in the next few years and will increase by just so much the inflammability of the forest.

The rain will not always intervene.

Some day there will be a holocaust indeed. The extent of the devastation in Eastern Canada will not be enumerated in thousands of acres, nor in townships, but in whole districts and regions. The loss in human life, in farm and mill property, in commercial timber, in game and in failing water-powers will stagger the imagination. At the first shock we shall be starked and gaped with horror; upon meditation we shall be bowed down with shame and self-reproach.

### Don't Criticize—Get Busy!

This is no time for captious criticism.

This is no time for evasion of responsibility. We must spread the knowledge of public ownership in crown forest lands and we must develop the responsibility of trusteeship which this ownership involves.

We must gain the co-operation of all who use the forests for business or pleasure.

We must support our forest protection service with all the intelligence and all the means at our command.

Conditions must be made safe for the pioneering agriculturist.

Our lumbering interests, our pulp and paper business—all our wood-using industries, must not only live, but must grow in stature and wealth-producing power, or else Canada declines and becomes a weakling in the great family of nations that look up to one flag.

No obligation of citizenship rests more firmly on our shoulders than the protection of our forests from fire.



Right Honorable  
William Lyon Mackenzie King

## A Message from Canada's Premier

(Especially written for the Illustrated Canadian Forestry Magazine.)

The Canadian people have before them many onerous and perplexing problems demanding, for a wise solution, the utmost in unselfish citizenship. One of the finest tests of loyalty to the state is to be found in individual support of the cause of forest conservation. Its keynote and inspiration lie in forethought for Canada's future. Present gain should be made subordinate to the profit, comfort, and safety of generations to come. The people of Canada own more than 85% of the forest lands. The state, with its uninterrupted tenure, is peculiarly endowed to act as conservator to a timber crop that may take a century to mature. We must look upon our forest resources as a source of wealth held in trust for this and future generations.

This is emphatically the business of CITIZENS. We cannot relegate it to any control that does not focus its eyes on the legitimate rights of the people of a century hence.



# The Spirit of Christmas

by Robert Stead

Author of "Neighbours," "Dennison Grant," "The Cow Puncher," Etc.

**T**HE Widow Stately's home lay in a nook in the foothills where the sun in mornings came blazing up from the east. At noon he poured down gently among the evergreens that clothed the hillsides of her little farm, and in the evenings, before time for sunset on the plains below, he faded out in yellow splendor over stark white peaks that guarded the widow's valley from the west.

The Widow Stately had been a widow even when she came into that little nook in the foothills with her son Frank, then a sturdy lad of fourteen or thereabouts. Here they had "dug in" with their little herd of heifers, and Frank had plowed the valley field for oats and potatoes, and, with the help of a carpenter, they had built the house of spruce logs where a mountain stream gurgled lullabies in the still nights.

At the end of six years they were on their feet. The fields had extended; the herd had grown; the cream cans went down to town three times a week; there was new furniture in the log house and a lilt of song in the widow's heart. But one new pang was hers; mother-love could not quite stifle the pang when her handsome Frank rode out with the yellow-haired Allison girl from south of the ridge.

At the end of that same six years came the War. And now the Widow Stately is doubly a widow, and the Allison girl is old before her time.

Down the valley a mile or more live the Freedmans. And Freddie Freedman, at fourteen, unhappily runs to mischief, as the sparks fly upward. Was it not Freddie who left the Stately gates open at Hallowe'en? Was it not Freddie who unbolted the reach in the widow's wagon? Who but Freddie transposed the front and rear wheels of her buckboard? Who but Freddie shot the wild geese which she was taming, and drank cream in her dairy when she had gone to town?

And to-night, as a blanket of Christmas snow carpets the foothills and the valley, the widow returns from town with her melancholy parcels for Christmas cheer. To-night will the log fire burn on her hearth and strange visions wax and wane in its embers; visions of the First Frank and the Second Frank, and a nightmare of horror Over There. The fire will die out, and Christmas will creep in, wan and cheerless and alone.

But as she drives up to the log house she sees a sturdy young figure at work in the woodshed, and—can she be dreaming?—the spruce logs at the end of the house have been cut and piled for the winter's burning. And the sturdy young figure comes out and takes her horses by the head.

"Let me put your team away while you go in and warm yourself, Mrs. Stately," said a voice. "See, I have started a fire for you."

So like Frank it seemed that she dared not break the spell. Without a word she sank in her rocker, while the tongues of flame from the spruce logs leapt up laughing, curling, fondling, at her feet.

But he was so long in coming that at length she went to the door. The sturdy figure was just disappearing down the road in the grey cloud of night.

"Who are you? Who are you?" she called after him.

"I am the Spirit of Christmas," he answered.

And then she knew his voice. "You're not!" she laughed. "You're Freddie Freedman!"



Friend Husband had had a busy day at the office. And Friend Wife had moped all day at home.

It seemed to Friend Wife that her husband took business demands upon his time altogether too complacently. That is, if they *were* business demands. For a time after they were married he was always home before six; now he was frequently late. And he didn't seem properly distressed over it. That was what worried her most.

So Friend Wife learned to mope a little, and to complain a little, and to wonder a good deal. And the more she moped and complained the less did Friend Husband hurry from the office. The office had become his retreat.

Moreover, there was the Party of the Third Part. Friend Wife had never seen the Party of the Third Part, but she could not doubt her existence. For a year back her husband had forgotten to kiss her when he went to the office, and when he came home. And on those rare nights when he stayed at home he read the newspaper, and yawned, and found the time heavy on his hands. So you see there must be a Party of the Third Part.

This fear gripped the little woman so deeply that one night she determined she would know the worst. Her husband had not come home to dinner; he had telephoned that he was very busy in the office. He would just slip out and have a bite. And he would likely be late—don't sit up . . . She would know the truth!

So she put on a long cloak, and a veil affair that she could draw over her face, and she went straight to his office in time to intercept him before he left for his appointment. A light shone through the frosted doors, but all inside was silent as the tomb.

"He has gone already!" she exclaimed to herself. Then she gently tried the door. It opened to her hand. Her eyes swept a vista of deserted desks. How forlorn and irksome they looked! But everyone was gone. NO! There at the end sat an oldish man. It was her husband! It had never struck her before that her husband was beginning to be an oldish man. He had not heard her. He was intent upon a statement with a long column of figures, and he was making calculations on a pad of paper before him.

From where she stood she could see the grey tinge about his temples, and the thinning hair on the top of his head. His brow was set in deep furrows. And suddenly Friend Wife found herself swallowing desperately at something in her throat. Suddenly she knew that there was no Party of the Third Part, and never had been a Party of the Third Part, and that she was a foolish, wicked woman.

She drew the door shut, gently and guiltily. In the basement of the building was a restaurant, where also was a waiter, who, for a consideration, would carry a meal to her husband's office. Quickly she gave the order, for two; it was to be a modest meal, not too expensive, but healthful, and garnished with love.

The waiter carried it in and set it down on the little correspondence table beside Friend Husband's desk. And a Beautiful Woman sat down beside it, and held out her hands to the troubled man with the long column of figures, and smiled.

"Who are you? Who are you?" he demanded.

"I am the Spirit of Christmas," she said.

"You are more than that!" he cried. "You are my wife . . . my . . . my love!"

# Canada's Northern Heritage

The latest Arctic Expedition was another Step Forward in the Development of that little known Region.

By J. D. Craig, M.E.I.C., Advisory Engineer N. W. T., Ottawa.

The accompanying article having reference to the expedition recently returned from the Canadian Arctic regions is particularly interesting in view of the fact that it is the first magazine story of the Expedition to be published. To Mr. Craig, officer in charge of the Expedition, we are indebted for this interesting narrative; also to the officials of the Northwest Territories and Yukon Branch of the Department of the Interior, by whom the Expedition was organized, who have made the publication of Mr. Craig's story possible.—  
Editor.

CANADA, in her Arctic Islands, has a wonderful heritage in the north, the full value of which time alone will reveal. Then the wonder will be that its possibilities were so long overlooked. Like Alaska previous to its purchase from Russia by the United States, it is comparatively unknown, and to the



J. D. Craig, M.E.I.C., D.L.S., officer in charge and Commander of Canada's latest Arctic Expedition.

man in the street, and probably to many who should be better informed the idea that the country north of Hudson Strait is other than a treeless barren waste, comes as a distinct shock. Treeless and barren it may be in parts, but it has other compensating features in its fisheries, its fur trade, its big game and its mineral possibilities.

Proof as to the importance of its fur and fisheries is seen in the numerous trading stations of the Hudson's Bay Company, and other companies, as well as of individual traders, established at various points, each station taking its annual toll of fur, oil and ivory. The majority of these stations naturally are in the more southerly and easterly, and so

archipelago but it is only a matter of a short time until the activities of these companies result in the establishment of trading posts in parts that are at present considered inaccessible. It is only a matter of a short time also until public interest awakens as to the mineral possibilities, and the result will be a demand for detailed geological information concerning the region, followed by or co-incident with an influx of prospectors, whose intensive work is recognized as one of the best means of acquiring mineralogical information. As a matter of fact inquiries regarding the northern islands and their mineral possibilities are not infrequent.

Coal, some of it of excellent quality, has already been found in many places, and has been used for years by traders, whalers, and others. The geological information in certain parts indicates the possible presence of oil, and among other possibilities are certain economic minerals that are known to occur in rocks of other parts of North America similar to those found in the Arctic Islands, for instance, iron, nickel, silver, gold,

pyrite, magnesite, molybdenite, graphite, mica, and many others.

Another important feature is the possibility of making the north country one of the great future sources of the world's meat supply. The reindeer industry has for several years been successfully carried on in Alaska. Many of the natives there



Capt. J. E. Bernier, Commander of the C. G. S. "Arctic".

have large herds and are real capitalists of their kind. Experiments are now being carried on in our Arctic islands with imported reindeer and certain islands and districts have been reserved as game sanctuaries suitable for further experiments along this line in the future.

## The Voyage North.

One speedily leaves behind what is generally understood as summer weather when sailing north on a voyage such as that of the past season. Leaving Quebec about the middle of July with the thermometer in the 80's and 90's, ice was first seen in the Strait of Belle Isle nine days later. It was only a small berg but an object of great interest to

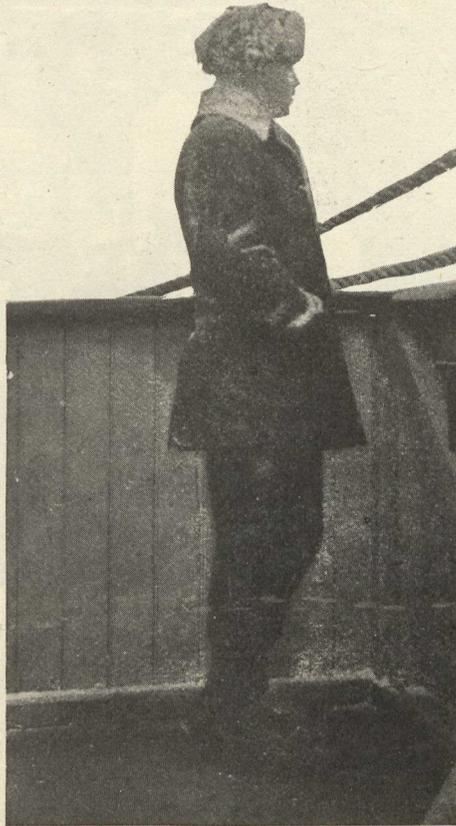


C. G. S. "Arctic", in the ice at Pond's Inlet.

those of us to whom it was a novelty. Later when bergs of giant proportions could be counted round the ship by the score, the novelty wore off, but not without leaving a feeling of awe engendered by their vast proportions, their wonderful beauty of formation and color, and their serenity under all conditions. An iceberg is an object of admiration when the rays of the setting sun tint its summits a wonderful pink in glorious contrast to the peculiar greens and blues of its caverns and underwater spurs, but they are more impressive than ever when, under the influence of some deep current they plow their way serenely to windward through a sea covered with pack-ice leaving a comparatively open trail behind them. Woe betide the vessel caught in the ice in the path of one of these Behemoths of Nature. Once in the ice or in the vicinity of bergs a constant watch is kept, and by repeated compass bearings the movements of the neighboring bergs are ascertained lest the ship should be overtaken by one while unable to extricate herself from the ice packed solidly all round. It is on occasions like this that one sees the futility of setting up a few hundred horsepower against the vast forces of Nature.

We ran into our first snow storm early in August though we had had several flurries previously. It was only rarely that there were more than five or six degrees of frost, but in those high latitudes even a light breeze is so penetrating as to necessitate fairly heavy clothing until one has become acclimatized. As there was continuous day-light throughout the twenty-four hours, the temperature remained fairly constant all day, there being a surprisingly small diurnal range.

THE SENTINEL OF THE NORTH



One of the "Mounties" on the Bridge of the "Arctic"

The "Mounties" In Command.

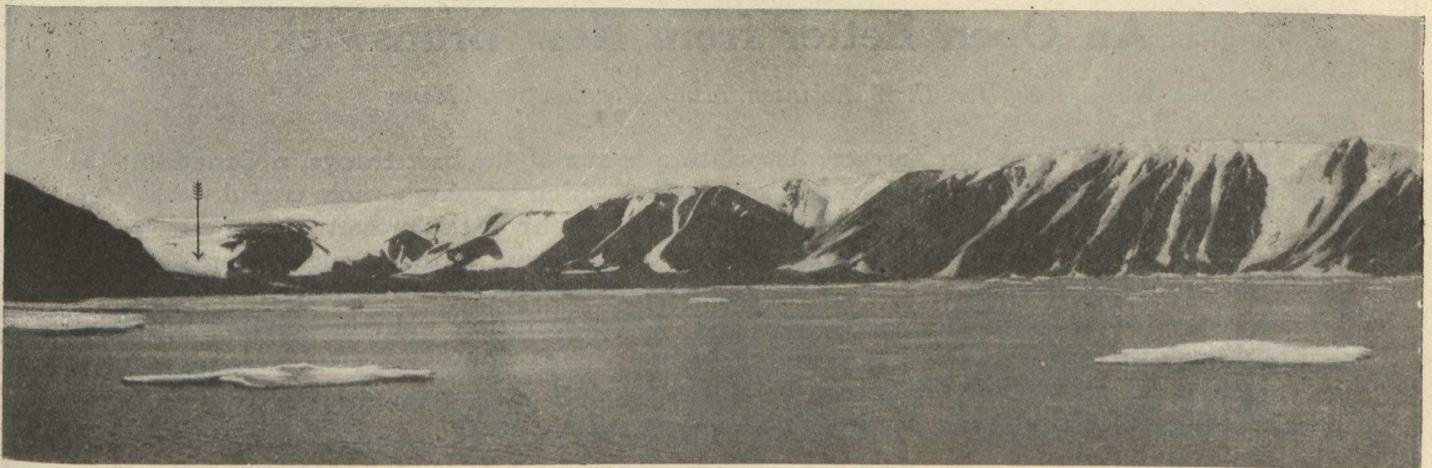
The members of the Royal Canadian Mounted Police, or more familiarly the "Mounties" were taken north on this occasion for the same reasons that they have been sent into so many other parts of Canada at different times. When the great plains of the west needed policing and the inhabitants needed protection, the North West Mounted Police were organized, and as settlement extended further north into what had

once been considered the wilderness they, then the Royal North West Mounted Police, advanced with or ahead of the settlers and gradually earned such a reputation for coolness and bravery in times of danger and for fairness and firmness in dealing with the whiteman and the redskin alike that their name became a synonym for all that is brave and fair and square. So, too, this year when Canada needed men to administer the law in her newest north and to afford protection to the native, to the trapper, to the trader, and to the game alike it was to the Royal Canadian Mounted Police, the same splendid body of men under a newer name, that the government looked for the right type of man, well-knowing that there they would surely not look in vain.

Nine men under Inspector Wilcox were taken north, six remaining with him at Craig Harbour, on Ellesmere Island and three joining Sergeant Joy who had already been at Ponds Inlet for twelve months investigating an Eskimo murder case.

The days spent among the icebergs and ice-floes were most interesting to those of us who had no responsibility concerning the safety of the ship. To those on whom this responsibility did rest, however, the navigation of the ship was a constant anxiety. The veteran Captain Bernier bore the brunt of most of this and it may be said truly that he took practically no rest unless he knew that the ship would be free of ice for a few hours. On one occasion while the ship was discharging stores at Craig Harbour he was on duty for fifty hours at a stretch.

We were seven days at this port discharging, and during this time the ship's carpenters, assisted by



Craig Harbour, Ellesmere Island, site of R. C. M. P. post and of probably the most northerly post office and customs house in the world. Arrow shows location of post.



**A GROUP OF GREENLANDERS AT GODHAVEN, GREENLAND**

These people while somewhat of the Eskimo type are much superior to the ordinary Eskimo. Their costumes and general appearance are most attractive.

members of the Police, practically completed the erection of the Police living quarters and erected the frame of their storehouse, leaving it ready to be sheeted. All other members of the Police and the ship's crew, and those of the technical staff who could be spared from their special duties assisted in discharging stores and piling them on the beach above high water mark.

At Ponds Inlet, where a post was also established, ice conditions were so unfavourable that less progress was made with the buildings, the ship

remaining in the harbour only thirty-six hours. Various members of the police at these posts are justices of the peace, coroners, post masters, and customs officers as well as game and fisheries officers, and it is quite apparent that Canada's interests in the north will be well looked after and that the natives will receive all necessary protection.

#### **A Visit To Greenland.**

On the return trip a short stay was made at the Danish Colony of God-

haven, on Disko Island, Greenland. We were given a warm welcome there both by the officials and the inhabitants and received a hearty invitation to repeat the visit whenever possible. The natives in their picturesque costume were a source of great interest to us, and incidentally we appeared to be of quite as much interest to them. The settlement is a great credit to the Danish Government and is a splendid example of what continued concentrated well-directed effort can do for the inhabitants of the North.

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## **An Open Letter from New Brunswick**

*By Hon. C. W. Robinson, Minister of Lands and Mines*

I feel that the Canadian Forestry Association is one of the best things in Canada at the present time. I do not know of any other organization which is doing a more useful work.

Our future welfare is wrapped up to a very large extent in the preservation of our forests. It is of such vital importance to future generations that it cannot be too strongly impressed upon the minds of the public and particularly the children. There is a work that Governments cannot do, and I have no hesitation in saying that from my observation, your Association is getting results though we may not see them so plainly at the present time.

I could not suggest any better methods than you employ, and our Government is anxious to co-operate with you in every way possible.

**C. W. ROBINSON.**

# SAVE OUR FORESTS

By Robert W. Chambers

(Reproduced with permission of the Author from McCall's Magazine)

**A** TREELESS NATION is a decadent nation.

When the forests of a country are neglected the mental and moral health of the inhabitants begins to decline.

Nations made treeless by the hand of man are dying nations. Nations which once were great and which no longer count are those the forests of which have been ruthlessly exterminated.

No matter what political cataclysm has overtaken and submerged peoples whose governments foster and care for forests, their potency remains, their vigor still endures, their racial resurrection is certain.

*Take a map of the world and look upon the peoples who gradually are perishing. Those doomed lands are treeless. They are nations which, once mighty, have become negligible.*

Neither in industry, nor in science, nor in art do they now contribute anything vitally constructive or creative. In the councils of world races—save for a feeble, peevish and purely selfish cry—they do not utter any sound. Theirs is the drowsy dream of glories past. Theirs is the sunset—golden still—that edges night, and the false, reflected light of night, and the unstirred silence of racial annihilation.

Once there were trees in Spain. Once China grew vast forests. So scepters pass.

\* \* \*

Without trees there would be little, perhaps no human life on this planet. There would be little life at all, possibly none.

It is the leaf that enables us to eat and drink. Only through the laboratory of the living leaf is our nourishment prepared, directly or indirectly. The green leaf gives us oxygen for our lungs, and uses what carbon dioxide we expel. Our food is partly mineral. We should die for lack of it *unless predigested for us by vegetation.*

The living leaf prepares food for man and cooks it by sunshine.

Our food and raiment begin in the living leaf. The leaf enables us to

drink. There would be little sweet water in the world—little rain—except for the sheltering leaves of trees.

Minerals in solution — elements made available by water — are the food of trees. From the mesh of tiny feeding roots, up through the soft sap-wood, and out into the leaves is carried this mineral food which nourishes trees. Each leaf is a delicate little chemical laboratory through which the circulatory system of the tree passes. Each leaf transforms the inorganic into the organic, digesting, preparing food for itself and for man. And through each leaf the tree breathes. If in any of us God has planted the vaguest love of and desire for beauty, then we ought to grow forests sufficient to satisfy that craving. For, in all nature, nothing nobler and lovelier was ever made by God than the virgin tree in its intact chastity and beauty.

A tree is a living thing. It has no mind, yet, possibly it possesses something equivalent to intelligence. It has no nervous system, yet it is sensitive. It has no power of locomotion, yet it may advance or recoil.

All other attributes of life it possesses; it is born of the union of two sexes; it breathes, eats, drinks, digests, sleeps, grows. It is subject to illness and recovers with nursing. It survives wounds; its scars heal; anti-septic surgery can save it.

And, like all things living, it is mortal. What we call death is the physical finish of it, *and of us.*

\* \* \*

It is not difficult for us to understand why our pioneer forefathers hated the forests which covered our country and turned it to a perpetual twilight.

Except where lakes or water-courses broke the vast continuity of trees, all was sunless, shadowy silence.

No underbrush could grow in these dim forest aisles; the high, thick tapestry of foliage shut out all sunshine. Only on prairies, marshes, or along lakes and streams and seas, where the forests edged the sun, could any lesser vegetation take root and survive.

To live, our forefathers had to eat. To clear a little place in the sun for a patch of corn was a herculean task. A sort of frontier fury was born in the minds of those whose starved struggle to eat was met everywhere by the huge, gloomy, solid ramparts of living forests — a vast, gigantic barrier to sunlight without which no fruits of the earth are garnered.

*Hatred for the forest was an evil heritage for us. Heed lest it be not our national undoing. Where forests die, waters die. Where waters die, the fruits of the earth perish.*

And out of those mutilated and abominable wastes where axe or fire or both have passed, unguided by knowledge or common sense, are born tornadoes that devastate and kill; floods that destroy fertility, harrow the shrinking earth to its rocky ribs, and turn arable land to desert.

Springs, once protected by the spongy mesh of roots, and mosses, dry up; rivulets disappear, brooks dwindle, rivers shrink into warm and narrow channels bordered by burning boulders bare as bleached bones.

Rains bring rushes of flood water only — terrifying inundations that come in the twinkling of an eye, thunder by in devastating fury and are gone, leaving behind dead springs, dying streams, and the ghastly bones of withered rivers.

The forest hatred inherited from our pioneers has degenerated into the stupidity of apathy. And with it the land is degenerating, too.

\* \* \*

The people of the United States are not celebrated for their love of beauty. Any appeal to them on the ground that beauty is a necessity to the civilized would be listened to with the indifference born of ignorance. Forests are beautiful. Many agree; but will exterminate those same forests if a few dollars can be made out of the operation.

As Omar might have said: "What can their money buy that is more desirable than the forests they have sold to destruction?"

That isn't the point. The point is that the destroyers of forests have made a rotten bad bargain no matter

what they get for the transaction.

The situation is comparable to a fruit-grower who picks a ton of luscious grapes from his vines. Fine! That's what the vines are for.

But consider the ass who would rip up vines, roots and all, whenever anybody came to buy his grapes! The next year there would be no more grapes to sell.

Next decade or so there will be no more lumber to sell.

That's the story. It is the story of a singular creature known as The Great American Ass.

\* \* \*

Three hundred years ago the forests and the fertility of America were supposed to be inexhaustible.

Today vast tracts of once fertile soil are exhausted and can be bought for almost nothing. And three-fifths of the original timber of the United States has disappeared.

Today we are using lumber *four times* as rapidly as we are growing it. Once the uncut forests of our country covered 822,000,000 acres. One-sixth remains. All woodlands, even including cut-over and burned areas, amount to about half the original virgin area.

Of idle, fallow, unused, and stupidly neglected land suitable only for forest growth and once bearing trees, 81,000,000 acres have been so ruthlessly cut or burned that it has become a wretched, useless, unproductive waste.

Three-quarters of the forests of New England are exterminated.

In a few years New England will *import* what lumber it requires.

New York, today, produces less than one-tenth of the lumber it requires.

Pennsylvania is now obliged to *import* eighty per cent. of the lumber it uses.

The white pine of Michigan, Minnesota, Wisconsin, is nearly gone; the yellow pine is three-fourths gone from the South; in the Middle States the timber is practically exhausted; twenty years will end both the hardwood forests of the Appalachian region, and those of the Mississippi.

In twenty years the cypress, too, is doomed to vanish.

What remains? The Pacific Coast timber. And in thirty years that, too, will disappear.

When the forests go, the waters go, the fish and game go, crops go, herds and flocks go, fertility departs. Then the age-old phantoms appear,

stealthily one after another — Flood, Drouth, Fire, Famine, Pestilence.

\* \* \*

The picture painted here isn't a pretty one. Nor have the colors chosen been too lurid or too thickly laid on. Alas, they have even been toned down! It's a rotten situation.

There are two ways of facing a rotten situation; get under the bed-clothes and try to forget it; or get up, put on your pants, go out and face it.

Of course the thing to do is to cut out the rottenness from the situation and turn it into a hopeful and practical one.

There is time, still. We'll have to pay for our asinine ignorance and indifference — pay in hard cash. Every pocket will feel it; every pocket feels it now. It's going to cost us what Broadway calls "real money." That can't be helped. The Piper must be paid. The thing to do is to pay him, send him away, and get down to brass tacks.

Now, then, here is the problem and the necessity:

We ought to grow sufficient timber in this vast land of ours for our own needs.

We ought to grow enough for profitable export.

We ought to grow enough permanently to protect our springs, watercourses, rivers, our water power, our navigable streams, the fertility of our fields, the welfare of our herds and crops.

We ought to grow enough to protect the health of our people.

We ought to grow enough to protect our birds; for, without them, our crops ultimately would be destroyed.

We ought to grow enough to give shelter and expansion to our game birds and animals, to our fur-bearing animals, to our fish.

There is no reason why we should not use our timber and have it, too—take each year what we require from our forests, and still retain our living forests — stately, permanent, useful, beautiful forests, paying in a hundred charming ways for the room they take and care they require — yes, paying even in money, and paying well as first-class, profitable investments.

The Government should assume control of all lumbering in the United States.

This proposition is radical and it sounds like interference with private business. But it must come to that or

our country becomes like China, a land of perpetual famine and poverty — like China which not very long ago could boast forests as magnificent as our own.

All lumbering should be under governmental control. The most drastic regulations should govern every operation which entails the felling of trees for whatever purpose.

For every tree felled in the United States a permit should be obtained. For every tree felled, another should be planted immediately.

Our hundreds and hundreds of thousands of waste acres — acres sterile, fallow, burnt over, cut over — which now yield nothing, should be planted to forests.

Where is the money to come from? For every "market" felled a fraction of a cent tax to Government — the entire sum to be spent in reforesting this wasted, mutilated land.

Federal control first of all; then Federal and State encouragement.

Seedlings, two-year, three-year transplants, grown in Federal or State nurseries, should be made attractively available to all who desire to start a patch of woods.

Every farm has its sterile, arid strips, of little or no use to agriculture, unless even for scanty pasturage.

It often has occurred to the writer that in the country, when two young people marry, no better provision for children, who ought to come, could be imagined than the planting of the waste acres with trees that would be a source of income to those children when grown and ready to marry.

As a nation we Americans are inclined to live for the present only. Seldom do we take thought for those who are to follow us—even for those to whom we owe every responsibility.

All woodlands ought to be, and can be, a source of perpetual income to their owners. On the acreage depends the income. Always lumber will be in demand. Always there will be need of home consumption also.

Let the Federal Government control; the State foster and encourage and make acquisition easy. Would it be a hardship if a State law made it obligatory that a certain percentage of every farm should be planted and maintained in forest?

There is another matter which the writer has considered recently; the planting and maintenance of county forests in every state. Every county contains land worthless for any other purpose.

What finer memorial to those who served in the Great War than a County Forest, offered,

planted, guarded and maintained in honour of those who fell by those who survived?

Such forests, properly controlled, could maintain themselves—pay for their up-keep.

Could anything be finer for a soldiers' memorial than a beauti-

ful woods where the timid wild-life of the region might find refuge and breed in safety—where the springs and brooks would be protected, where the people could enjoy the quiet and charm which only the green silence of the woods affords?

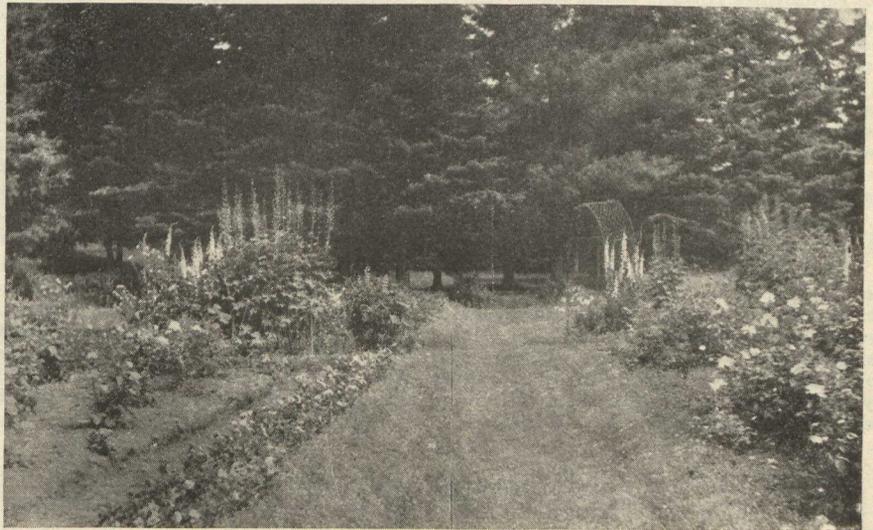
This country's well-being, prosperity—yes, its very survival—lies in the swift resurrection of its forests.

Somehow this work will have to be done, and done very soon.

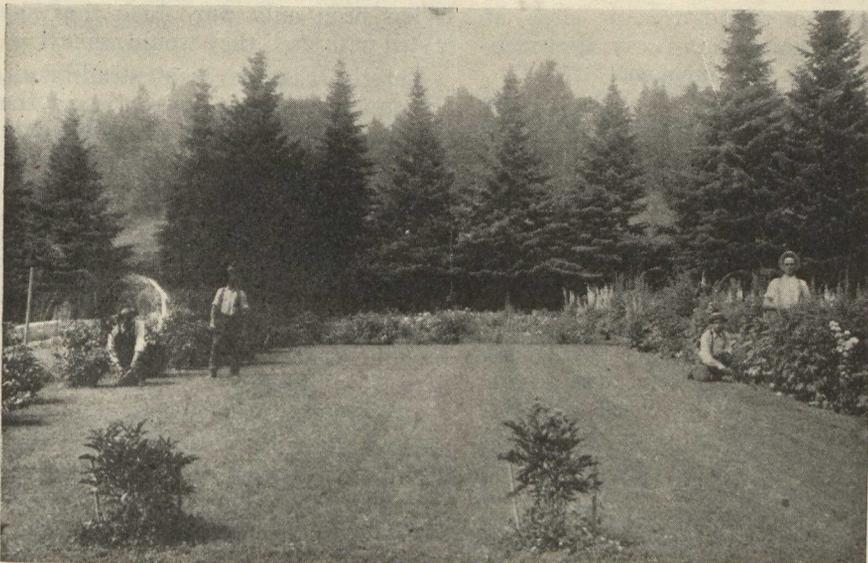
How would *you* do it?

## An Old-Fashioned Garden Beautified by Trees

Mrs. Edwin Hanson, who lives at Les Sapins, Ste. Agathe des Monts, Province of Quebec, sends in the accompanying photographs of her family home and garden, which splendidly illustrate the beautiful effects obtained by tree-planting on private estates.



Looking into the Bowling Green.



Putting Green with Trees for Background.

The trees shown here were planted about twenty-eight years ago by the late Mr. Préfontaine. Mrs. Hanson is justly proud of her garden which she describes as being "quite out of the ordinary type, because of its trees."

Send your friend, at home or abroad, The Illustrated Canadian Forestry Magazine for one year as a Christmas Gift. It will be a monthly reminder of your thoughtfulness and good judgment. Fill in the coupon on another page of this issue and mail without delay.

# "The Flapper"

## A Story of the Beaver and its Habits

By Otto Leonard Anderson

On a small stream that empties into the upper Mississippi, there lives a colony of Beaver, protected by the laws of humanity and left, in solitude, to enjoy their isolated existence. Here we find them moving back and forth through the water as they perform their daily tasks, damming their home waters and creating a large pool covering what formerly comprised a small acreage of clover land. Undisturbed they live, cut off from the rest of the world and forming a small government of their own; each content to be among his own companions and far away from the harm that civilization would undoubtedly bring to them.

Often have we heard the remark "Working like a Beaver." There is little time for play in a Beaver's life. When it is not busy storing poplar twigs on the bottom of the pond for future use, it is busily engaged repairing one of its engineering feats. The remaining time is spent exploring the immediate vicinity of its home, at all times keeping well within sight of the water and continually watching for its most feared enemy—the human being. I sometimes wonder what is the real reason for the Beaver's presence upon this earth. It seems as if its entire life was dedicated to destruction and yet, at times, the good which it does proves to be of equal value to the destruction. Working unceasingly, with a fervor that is strangely lacking in human nature, this little animal goes about its duties as though they were planned and mapped out for it. Strange as it may seem, I believe that there is a real purpose for their presence here if it is nothing more than to assist Nature in retarding the flow of our streams. It is fortunate, that in only a few instances, the high waters which their dams eventually bring about, have inconvenienced us by flooding roads and hampering traffic in our rural sections. These animals are protected by man-made laws until the destruction which they cause becomes considerable. When they are killed it is usually because they have made an enemy of one of our law-abiding citizens, through their misguided industry.

There is no animal that offers a more interesting study, for the amusement of our inquisitive research workers, than the Beaver. Their habits, nature and physique prove to be well worth the time one spends in studying them.

Strange also, there is no lust in the human race, for the lives of these animals. Few men desire to kill them unless for commercial use or for the good of the community. The sight of a wolf or squirrel excites the sporting blood in the majority of our citizens but strangely, few men ever kill the Beaver for the love of sport. They possess a certain pleasing personality which protects them from physical violence. Often times I have been in a position to take their lives but remained content to watch them work and study their traits and characteristics. Were it a wolf, deer or any other wild animal undoubtedly my desire to kill would have over-ruled my inquisitiveness and my first thought would be to kill. Then, as most men, I would compliment myself for having committed a crime against an innocent creature with practically no means of protection against the methods and weapons adopted by man.

THE colony had grown considerably since the Spring litter had been added to its number. Ten in all, they now formed a government of their own, capable of protecting the rights which Nature had given them and safe from the violence of man. Two sets of adult Beaver and six young ones comprised the clan. Commerce and revenge had claimed five of their number and left the deep pang of fear in the hearts of those remaining.

There was but one of them, at the present time, that showed signs of being beyond control of her elders. This one had been properly christened the "Flapper". The stories of how her brothers and sisters had met their fate meant nothing to her. Her parents' continual pleadings were of no avail. She had resolved to enjoy herself at any cost. Bygones were bygones to her—they were just accidents. She let them go at that.

Her brother was less adventuresome. He was content to remain under the careful guidance of the parental eye. Whatever his parents told him he swallowed whole, and bore in mind that at all times, he was to take precaution against bodily harm. Next came his work and last his pleasure,

which was to him, being able to take an occasional promenade into the vicinity around their home. On these visits into foreign lands, he was always accompanied by one of his elders, who would remain close at hand and warn him of any approaching dangers. His name was "Dab".

The father was solemn as the Sphinx itself a strong, compact animal weighing about 50 pounds. At an early age he had been the victim of a trap and his continued presence in the colony, was accounted for only because he had decided to go through life without the use of his left foreleg, which he had chewed off. Like the Flapper, his disposition had been a roving one and the current opinion was to the effect that she had inherited this trait from him. Her cautious mother at intervals reminded her spouse of this fact. "Certainly the girl does not take after me", she would remark when another incident in the Flapper's life had caused their blood to run cold.

The remaining members were distant relatives and had migrated with the Flapper's family from a point a mile or two upstream, after the previous death toll had warned them that that place was no longer

safe. "Caution" was their motto. No unnecessary chances were taken by any of them. All watched with open mouths when the Flapper went by, bent on another exploration. "Surely it has been only pure luck that she is still with us," they would remark.

Yet the Flapper went steadily on. Unconvinced by the entreaties of the others: "I'll take care of myself, you mind your own business," she had told the neighbors on one occasion. Since then her will had been undisputed. Her parents had long since given up the thought of educating her to the dangers that existed and had to content themselves with the thought that she would learn them herself—and she did.

We first find our protege working unceasingly with two more of the clan. Their object was to fell a tall poplar tree which for some time had caused the Flapper considerable inconvenience because it blocked a ready path leading up from the water. Their intentions were to have the tree fall toward the stream. Its size had assured them that it would easily cover the entire distance and leave a much desired bridge. The three of them had worked diligently for an hour gnawing at the trunk of the tree

and already it had shown signs of weakening and was bowing toward the opposite shoreline.

It was June. The sun shone strongly down. The adults were busily engaged in repairing the dam which fronted their places of abode. Another was remodeling the entrance to its home, smoothing out the mud and clearing away the brush. These houses, or bank holes as they are commonly called, are found above the dam and slightly above the water level. A beaver lives in one of three types of home commonly termed by woodsmen as the cabin, cottage and apartment. The cabin serves as the home of one enjoying solitary bliss; the cottage accommodates a family, and an apartment houses a number of families—just like humanity.

### The Inquisitive "Flapper"

The tree on which the three beaver were working twisted and fell headlong across the creek, its branches splashing in the water. The sound had hardly died away when the sharp echo of a gun rang through the air, quickly followed by the warning of the Flapper's mother, a decisive slap of her heavy tail on the surface of the water. The signal, well known to all, was quickly heeded by all except the Flapper. Small air bubbles marked the spots where the adults had previously been at work. Quick plunges, by the Flapper's companions, left only the tell-tale ripples where they had entered. All but the Flapper sought safety under the drooping limbs of a weeping willow which seemed to be bathing itself in the water. Here they could wait and watch until the danger had passed.

The Flapper's inquisitive disposition and longing for excitement had prompted her to remain for a glimpse of this monster that so frightened her companions. Another shot rang out, this time indicating that the danger was near at hand. The hidden members of the colony kept a breathless silence, broken only when the mother risked remarking that the monster must have gotten Flapper that time. "Too bad," she said woefully, "but the child just wouldn't listen to reason."

The wide, inquiring and sympathetic eyes of the others, indicated that they were convinced that Flapper had met her fate.

The bullet had buried itself in the stump of the tree by which the Flapper still stood, close to her body. A quick glance convinced her that she was the target of some ill-meaning human and with a quick lunge she threw herself headfirst down the



"The Flapper" on the alert

bank into the water, remaining completely submerged until she had joined the others under the weeping willow. Her first greeting was a slap across the face from her mother's tail, followed by a growl and scolding from her father. She cowered and remained in perfect silence, aware that perhaps her folly had disclosed their hiding place. After a brief time her mother ventured out and announced that the "coast was clear" and that evidently it was only a farmer boy testing a new rifle.

For the next few days the Flapper showed signs of recognizing her parents' pleadings. Her carefree, romantic nature was strangely silent. The parents and neighbors even remarked that she had at last been convinced of the dangers found in being careless. No doubt the lesson left quite an impression on her. She went about her duties as a model child, seldom uttering a word. But the lesson had not changed her liking for excitement. It soon wore off and she again roamed carelessly about the woods in search of amusement. Her parents, however, had not forgotten the episode. They lost little time reminding her of it at each meeting. "Surely you will now believe our entreaties," her mother would say at every opportunity. "There is no use behaving as you do for it will only be your undoing." The continual pleas had hardened

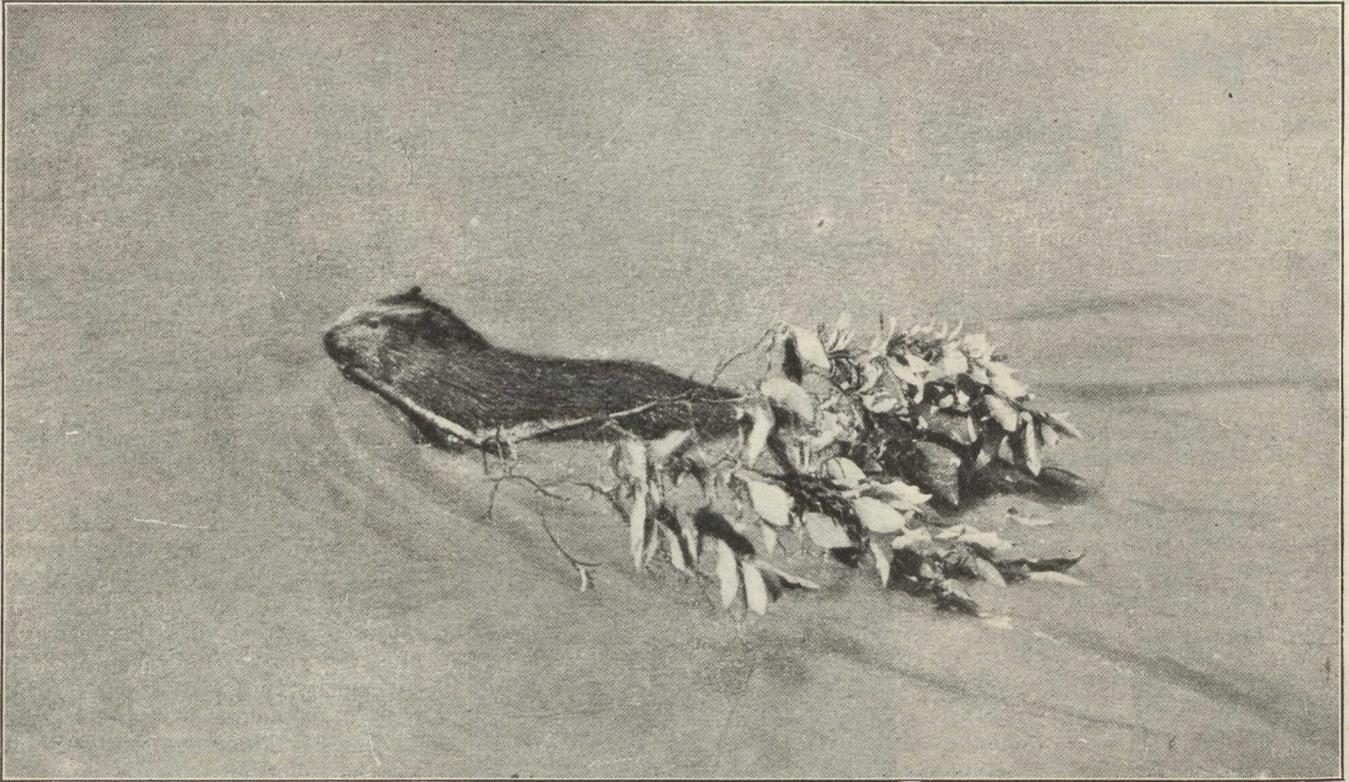
her to the words. She no longer listened or attempted to hear their remarks. "The idea of thinking me incapable of taking care of myself," she would say to herself. "I'll prove to them that I am more than a mere child; I have wandered about this way ever since I was old enough to walk and am still safe and healthy. Why not enjoy life? Why should I stay practically imprisoned with a constant fear confronting me? No! I am going to live; let the others do as they wish, but I want to *live*; I want to see all of the wonders of Nature and be friends with all of the other woods folk."

The Beaver has few enemies beside man. Wolves and other animals seldom get close enough to the Beaver to do it bodily harm. The water is its safe retreat at all times. The muskrat does not contest their superiority and goes about its duties with a suspicious look in its eye, at all times making sure that it is in no way a nuisance. There is perhaps only one animal which could fairly and justly engage in a feud with them. This is the Otter. Generally the Otter and the Beaver are good friends and are often found living in close proximity to one another. But sometimes even the best of friends can disagree. However, it is a well known fact that of all the animals inhabiting the woodlands, the Beaver is the best liked. And so the Flapper fares well with the majority of the woods folk.

But the human settlers of the community had met to decide the various issues and improvements which the country needed. Among the topics discussed was the need of destroying the beaver lodge which had dammed the settlers' best clear water creek and was seriously menacing their water supply. A prominent member of the community had communicated with the proper authorities on the legal method to be followed in ridding the vicinity of this nuisance and had been informed that the law held and could not be over-stepped. The animals were to be protected at all costs, but the settlers could, if so desired, destroy their dams and houses and compel them to move. A committee was appointed to dynamite the dam on the following Saturday afternoon and every settler was warned that the water would not be usable for a few hours following the appointed time.

### The Flapper's Mishap.

On Monday we find our friends engaged in their various pursuits, unaware of the impending disaster. The colony was once again buzzing with life and excitement. The Flap-



The "Busy Beaver" shown at one of his multifarious tasks of home-building.

per had once more narrowly escaped her doom and the colony was endeavoring to bring home their lesson of care as usual. It appears that while felling another tree, she had misjudged the direction in which it was to fall. The tree had twisted unexpectedly and it came crashing down upon her. Two large boughs had held it from falling to the ground and had therefore allowed her a little room. However, the limbs and trunk of the tree had left their marks about her body. She was badly bruised and had, for three days, remained under cover. Her mother had nursed her wounds and they had begun to heal, although it was necessary that she remain out of the water as much as possible, that the sores might have a chance to heal more quickly. She took her misfortune light-heartedly, although longing for the comforting touch of the cool water and the cries of her woods companions.

The imprisonment had given her a chance to think over the episodes in her life and she was more than ever bent upon exploration. She had resolved that at the first moment of freedom she would go over the hill and explore the surrounding country which had always remained a mystery to her.

On Friday she was allowed a few hours liberty, provided she be accompanied by "Dab", her brother. She had taken Dab with her and after a

tour of the territory below the dam, had returned safely. The very next morning she would go over the hill; she promised herself that. This decision on her part was a wise one. For a week there had been no unwarranted excitement in the colony and the members were again in good humor, little suspecting that the next day was to bring disaster.

The following morning, after a brief argument with her elders, Flapper left the lodge. This was to be the longest trip she had ever undertaken. The sun was just beginning to rise over the tree tops and the early morning air suggested that the day would be warm. With a word of farewell to her neighbors as she passed, Flapper swam smoothly to the upper end of the stream, her tail guiding her efforts through the current which formed immediately below the dam. Never had she seemed so sure of herself. She had never before looked quite as handsome and fit as she did this morning. Her head, held erect, she was again about to enjoy life after a beastly week of confinement in her stuffy home.

She made her way leisurely through the water to the foot of the hill, pausing to view the curiosities of Nature, which in her time had not played a very important part. Crawling up the bank of the stream, she started her pilgrimage over the hill. Here indeed was a new country.

About 200 rods to her right could be seen a small lake, shimmering in the early morning sun. The croaking of frogs and chirping of crickets with an occasional call of a loon, gave to the scene an atmosphere of the primitive wilderness. The hillside was heavily timbered and thick with underbrush. Here and there could be seen a muskrat moving hastily back and forth through the water. On the farther side of the lake a small creek entered, winding its way from the distant slopes. Flapper stood motionless and viewed the scene. Close beside her was a small spring which seemed to gurgle happily out into the open. She stooped and drank, gnawed cautiously at the bark of a poplar tree and then made her way down the hill to the lake. A snowshoe rabbit jumped quickly aside and hid in the brush. Behind her came the sound of trampled brush as she turned to meet the attack of a wolf. In a second her agile body was flat on the ground with her tail switching furiously at the beast. She struck at him as he missed his aim and lost his balance. In another second she was in the water mocking back at the animal as he stood knee deep in the lake challenging her. His efforts unsuccessful, he turned and slouched away down the shore.

The Flapper swam easily, close to the shore, watching for other members of her kind. The muskrats made

haste as she approached and a frightened bass swam swiftly away when he had been surprised while basking in the early morning sun. She sighted a group of lilies at the shore and made her way toward them. Here was a food which she deeply relished and one which was extremely scarce in her home waters. She feasted on the roots and re-entered the water looking for some reward to repay her for the efforts she had made in making the trip.

About ten rods ahead she beheld another colony of Beaver which were engaged in damming the run of a small spring which entered the lake. She greeted them and made her way up to the dam. The leader of the clan, after exchanging salutations, invited her to assist them in their task. After a brief introduction she went to work. This colony was considerably larger than her own. She resolved that her visits to this lodge were to be frequent. It was with satisfaction that she realized her trip had not been in vain.

#### **The Flapper Afraid.**

They worked until the late afternoon when a muffled roar filled the air, coming from beyond the hill in the vicinity of her home. The warning signal was quickly sounded and each Beaver went quietly to its home. The Flapper gazed through the trees in the direction of the sound, where she could see the air was filled with smoke and falling debris. Here was a mystery. What could that sound have been? For the first time in her life she was afraid. The blood chilled in her veins. Her courage had left her. What could it have been that caused such an awful commotion? As she stood there, half dazed, the thought occurred to her that perhaps her relatives and friends had been injured. She paused to think, but the thought was quickly turned into bewilderment. After all, she concluded, they were hers; they

belonged to her. She had never felt that she cared for them as she did now. In a moment her courage returned. She must go back and that immediately. Whatever the outcome she must return. What did it matter if she, too, were to die? If her loved ones had been taken away she felt that she had no further desire to live.

She retraced her course of the morning, along the shore line and up the path past the spring. Crossing the hill she entered the water. It was black with mud. She tried to breast it and swim the current, but the boughs and the mud, together with the increased flow of the stream, was more than she could stand. She could see where the dam had been. Two small outcroppings plainly marked the places where it had formerly been connected with the mainland. The members of her colony were nowhere to be seen.

One week later the remaining members of the Flapper's family were comfortably settled in their new home, together with the new friends Flapper had made on the day of the catastrophe. The combined members, of the two clans, formed a large colony. Most of their time was spent storing food on the bottom of the pond. Popple twigs, which seemed to be the most popular menu, had been imbedded in the bottom of the pond, for the Winter's use.

Here was also a colony of Otter, who, although they laid no claim to the supremacy of the lodge, had caused Flapper considerable inconvenience. They seemed to be always in her way and one of their number, in particular, had once or twice, threatened her life.

While away from the lodge one day the Flapper came upon her Otter enemy. They were both bent on a feast of lily roots, but it so happened that the Otter arrived at the lily swamp first. As the Flapper

approached, the Otter uttered a warning that her presence was not desired. Flapper refused to heed the warning, however, and continued into the lily swamp. The water was shallow and each secured a good footing on the bottom of the marsh. With a quick lunge the Otter came upon Flapper and took her unawares. The strong canine-like teeth of the Otter worked up and down her throat searching for a grip. With a twist of her lithe body she avoided the Otter's teeth and they both went sprawling into the water. Flapper at last got a grip and dug deep into the Otter's neck. The blood ran and a painful cry went forth from the challenger. The Flapper was demonstrating her superiority. Suddenly the pain became too great and with all its remaining strength the Otter tore loose, leaving large pieces of flesh in Flapper's mouth. Flapper turned and made for shore while the Otter renewed its attack. The latter charged furiously at the Flapper who was unprepared to meet her attack. With a quick swish of her large tail she brought it down firmly and painfully across the Otter's face. It stunned the Otter which groped about in the water. The Flapper made her way safely to the shore and watched her enemy struggle to right itself. The Otter regained position and sat quietly in the water, watching Flapper closely. She refused a challenge to come to shore and, convinced that continued combat would only mean further punishment, she turned and swam away.

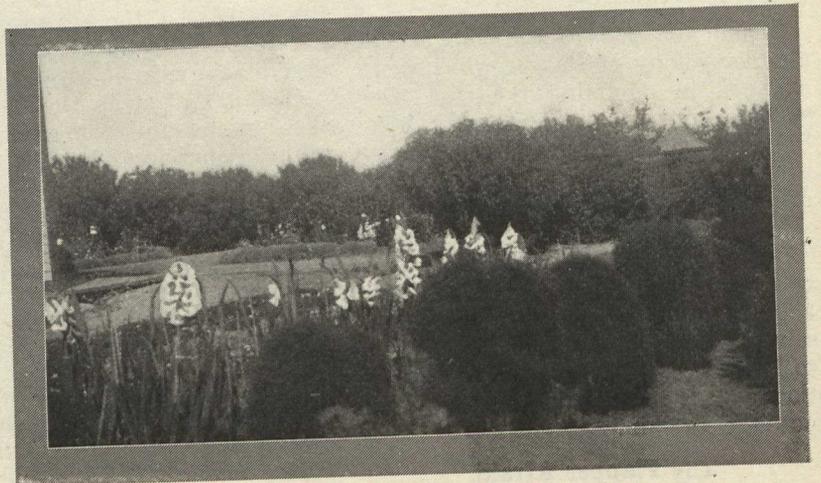
When the Flapper returned home that evening the Otter family had already left the lodge. The news of the battle had been broadcasted and she was carefully examined for her wounds. They regarded her as a heroine and looked upon her as one not to be trifled with. From then on, the Flapper enjoyed the distinction almost of ruling the new colony.



## Some Beautiful Effects in a Prairie Garden

In sending to the Canadian Forestry Magazine the pictures reproduced herewith, Mr. E. Bosmans, a well-known general merchant of Round Hill, Alta., includes the following remarks: "I have in my grounds over 6,000 evergreens, 1,200 elms, 200 ash and specimens of all trees that will grow here, also a full collection of shrubs and perennial flowers. Nearly all were raised from seed by me. I would gladly send information to any one requesting it."

A truly beautiful effect produced by an amateur horticulturist, Mr. E. Bosmans, Round Hill, Alta.



The gardens of Mr. E. Bosmans at Round Hill, Alta., showing a double Caragana hedge three years old. The Manitoba Maples in the background are twelve years old.



Beauty and profit combined in prairie fruit growing. View taken through a plantation of Box Elders twelve years old in the gardens of Mr. E. Bosmans at Round Hill, Alta.





# The Other Christmas Tree

By R.T. BARRET  
DECORATION BY T. TOPHAM



**T**WO TREES, a fir and a cedar, stood at the edge of a piece of woodland, just where a range of rocky hills sloped downwards into low, marshy ground.

A light breeze was blowing down the valley and all the trees were whispering softly to their nearest neighbors. Up on the hill, which caught the full force of the wind, a knotted, gnarled old oak was grumbling in an undertone to himself. His summer suit had been stolen in the night by Jack Frost and he made no effort to hide his resentment as he looked down at his two neighbours in their coats of green.

"Hear him mutter, the old bear," said the fir tree, "I shouldn't like to be an oak, if you have to be so cross and unreasonable when you grow old. I'd rather do something to make others happy. I'd rather have nice thick branches where birds can build their nests. I'd just like to do that forever. I wouldn't get surly and grumble all the time. And if I had to be cut down, I'd like to be—

"A Christmas tree", said the other, without giving him time to finish.

"Yes, a Christmas tree!" said the fir. "I'd like to be one of those tall Christmas trees that they set up in the parks of little villages, with red and blue and green lights hung on my branches. I'd like to be the centre of a crowd of children, standing out under the stars on Christmas Eve, and listen to their voices singing carols to the Christ Child. I'd like to have old people, and sick little children who could not get out-of-doors, go to their windows and look out at me.

"And I," said the cedar softly, "I should like to be a Christmas tree too. But I suppose I cannot. My boughs are almost as green as yours, and it is not my fault that they stick stiffly up into the air, instead of bending gracefully outwards like yours, but they do and I am afraid that I shall never be a Christmas tree."

"No, perhaps not," said the fir. "Perhaps neither of us ever shall. But we can at least practise making others happy, and then we shall know how to do it if we are ever chosen for Christmas trees."

One day a band of men with saws and axes came down the path that led from the woodroad into the swamp. They stopped at the cedar tree and soon the big crosscut saw began to bite into his bark, as strong arms swung it back and forth. And as it cut deeper and deeper, it sang a song which seemed to the cedar to be the dirge of the Christmas dreams he had dreamed so many times.

Finally, he fell with a crash headlong to the earth. With sharp, ringing strokes the men attacked his limbs with axes, stripping away the beautiful, green boughs until only the bare, unsightly trunk lay on the ground.

"Poor friend!" sighed the fir tree. "His dreams of making others happy are ended. He will never be a Christmas tree."

"And I suppose I shall not, either," he thought sadly, after a moment. "It must be my turn next."

But the men left the fir tree standing there alone while they pulled the cedar to the road, placed him upon a truck and hauled him over the hill and out of sight.

Strange things happened to the cedar tree—things very different from those of which the two neighbors had talked as the wind had swept through their branches on silent nights. He was carried for many miles on the truck and finally, thrown, not too gently, upon a pile of other trees that had been stripped of their branches as he had, where he lay for months until the sap that had climbed up his trunk-veins had dried away. His coat of bark had been torn away and the skin beneath, at first a clear, yellow-white, had been bleached gray by the rain and sun.

And then he was picked up one day, and his butt was thrust into a big tank filled with hot, sticky, foul-smelling oil—creosote, he heard a man say it was—where he remained several hours and then was hurried out and laid once more in the sun to dry. "Not much like being a Christmas tree!" he thought, as he lay there, wondering what was coming next.

He did not have long to wonder. Some more men came one day and, loading him on a big automobile truck,

carried him away, bumping over the rough places in the road, until he came to a little village.

More men came and fastened heavy pieces of timber near his top, like new arms to take the place of those that had been chopped away. They dug a hole and planted his butt firmly in the earth so that he once more stood upright, a pathetic picture of his former self as he had stood in the beautiful valley far away.

Still other workmen came and, driving sharp spurs into the cedar's sides, climbed up and fastened to his strange, new arms, rounded glass bulbs; but these were not at all like the gorgeous electric lights he and his neighbor, the fir tree, had pictured in their dream.

Then, one day, a boy and a girl passed the cedar tree as he stood there by the side of the village street. They were just the kind of children he had dreamed of seeing standing beneath his branches singing carols on Christmas night.

"Oh, look at the new telephone pole!" said the boy.

\* \* \*

And then—the miracle happened, as it always does in Christmas stories. Somewhere, away off, a man turned a switch and the wires on the telephone pole, which had never been used before, came to life. As the pole listened, he heard voices talking over them.

"Hello, Mother!" he heard a man's voice say, off in a distant city. "I can't get home tomorrow as I planned to do, but I thought I would call you up to wish you a Merry Christmas!" And then there was a happy little laugh as the old lady talked to her son, calling him by the funny, little pet names he had gone by as a boy, before he went away to make a name for himself in business.

"Mrs. Roberts, I'm sorry Tom can't get out to our Christmas party", said another voice. "The children are coming over to show him some of their presents and to bring him a few things from our Christmas dinner. Tell him they'll be over about three o'clock tomorrow afternoon." And a little boy, who had broken his leg

while coasting a few days before, found that Christmas is Christmas, after all.

"This is the telephone company, Mrs. Jennings," said another voice. "We have installed the special wires in the Methodist Church and will be ready to use them tonight. We hur-

ried up because we knew you hadn't been able to get out of the house for years and we wanted you to hear the Christmas exercises."

"Well, perhaps we are *both* Christ-

mas trees," said the pole happily, to the fir tree which had been erected to carry the lamps which shed their light over the little park.

"Anyway, we've both helped to make people happy, as we dreamed of doing, and I guess that's what Christmas is for, no matter how it is done."

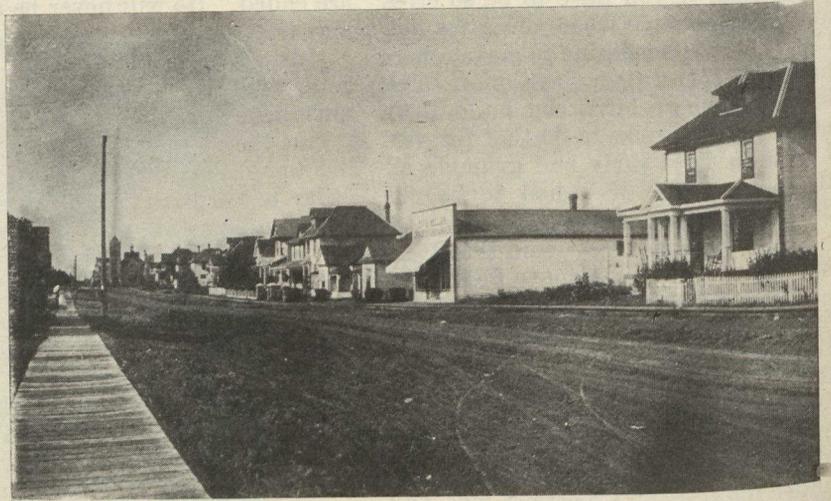


The foregoing pretty fancy is from the pen of one of the bright young men of the Bell Telephone System. How many of the 800,000 poles of the Bell Company of Canada with its total of 21,000 pole miles, could tell a similar story of benefits conferred in the world of human beings. Not only in towns and cities, but in the rural sections where private companies have built their lines to connect with the big Bell System, the story might be told. There are over 770 such private connecting systems in Ontario and Quebec and they serve more than 117,000 subscribers. This is in addition to the 36,000 rural residents which are direct subscribers of the Bell Company.

The great bulk of the poles in the Bell System are cedar, but extensive experiments are being carried on with creosoted pine poles, and these promise to give satisfactory service.

## The Beautifying Effect of Shade Trees on City Streets

The great difference that trees make in the appearance of a city street is well illustrated by the accompanying pictures sent to the Canadian Forestry Magazine by the courtesy of Mr. A. J. Macpherson, Consulting Civil Engineer, of Regina, Sask. The photo on the right was taken during the summer of 1909. The left side of Lorne street was subject to the 1912 cyclone when all the buildings as well as all the trees were destroyed.



Since that misfortune the street has been paved and concrete sidewalks added, with the very apparent improvement, pictured on the left. Doubtless these features in themselves would add something to the appearance but readers will be impressed by the manifest improvement brought about by the Cottonwood trees. These are just ten years old and provide an abundant shade.

# TURNING WASTE LAND INTO REVENUE PRODUCER

**A**N UNUSUAL example of municipal forestry is to be found in Lewis County, New York State, where the village of Carthage has purchased some 2,000 acres, which surrounds and protects its water supply. The land, originally covered with forest, was stripped many years ago for hemlock bark to supply a nearby tannery.

Fires swept over the tract at various times, and there were some rather ineffectual efforts at farming. About twenty years ago Carthage realized that something would have to be done to provide a safe and adequate water supply for its people, so this land, which includes a number of springs, was purchased and the water was piped some sixteen miles down to the village.

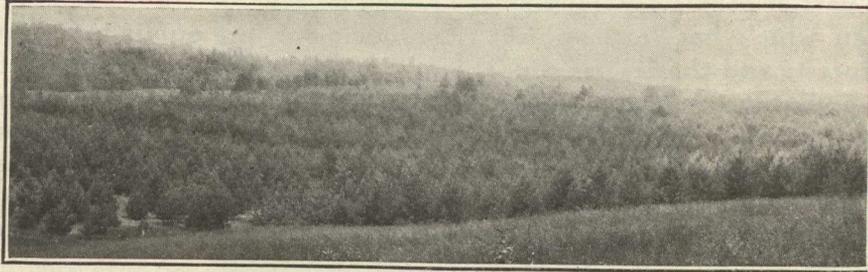
With a land problem as well as a water problem, the water works board considered how they might best handle the land surrounding the reservoirs. Everything pointed toward the desirability of putting it into forest. Small trees were purchased from the nurseries of the New York State

Conservation Commission for 50 cents a thousand, plus the cost of transportation. In the spring of 1913 they put out 20,000 four-year-old transplants of Scotch pine, at a cost which did not exceed \$8 an acre. Since then, a few thousand have been planted each spring until 585,000 trees were set.

The trees are set in the sod, approximately 6 feet apart, so that it takes about 1,210 to cover an acre,

and not less than 483 acres have been planted. Most of the trees are Scotch pine, which, while not as good a timber tree as white pine or red pine, grows rapidly and is remarkably free from insect and fungus enemies. Since 1920 a few thousand white

already they have crowded out the weeds; they have begun to protect the soil, and to aid in holding water with which to regulate the springs and streams which in turn keep the Carthage reservoirs filled with pure, clean mountain water.



Municipal Plantation at Carthage, N.Y.

pine have been set. To insure that these may be free from the white pine blister rust, all the currant and gooseberry bushes over the planted



Scotch Pine, nine years planted and from 15 to 20 ft. in height on the Carthage, N.Y. municipal plantation

area and around it have had to be pulled. The trees stand in rows, and in all the plantations where 3 and 4-year-old transplants were used, not less than 95 per cent of the trees are living. The one and two-year-old seedlings have not proven so successful.

Many of the older trees are from 15 to 20 feet high, with a stump diameter of six inches or more. They are far from being merchantable, but

Fields which a few years ago furnished scarcely enough grass to pay for cutting it are now producing an annual crop of wood amounting to nearly 5,000 pounds an acre. Within the lifetime of many who are now watching these trees grow, their

contents may reasonably be figured in terms of merchantable board feet. Before fifty years are past it will be possible to cut saw logs from the area, although naturally another fifty years will make possible the cutting of much larger and more valuable logs. It is safe to say that once well established to forest growth and placed under careful management, such an area as this might furnish a million board feet of lumber every year without in the least detracting from its value as a part of the Carthage

watershed. A million feet of lumber every year will keep a fair-sized mill going, and should give profitable employment to a number of men. At present freight rates a million feet of lumber grown at home instead of being shipped across the continent, will keep between \$15,000 and \$25,000 in freight bills right at home.

The water-works board is going ahead, and during the next ten years expect to finish the planting.

## A Call to Action by Ontario's Premier

(Written by Hon. E. C. Drury for the *Illustrated Canadian Forestry Magazine*)

**T**HE importance of such forest management as will insure to our country in future years adequate protection to our great watersheds, proper control of drift sand areas, favorable climatic conditions, and an adequate supply of timber, is such that any measures taken to secure these ends should have the fullest and most enthusiastic popular support.

Instead of this support, which we might reasonably expect, we have unfortunately found a condition of apathy on the part of the public to this all-important series of questions, which not only has failed to provide the urge needed by Government bodies to induce them to undertake the necessary work for forest preservation and reproduction, but has made the public itself one of the greatest menaces to the preservation of our forests. The great and increasing number of fires originating with careless pleasure-seekers and tourists, is a startling testimony to this condition on the part of people generally.

Any campaign which has for its object the arousing of the public intelligence to the importance of our forests and the creating in the public mind of a sentiment for the care of the forests, cannot help but insure untold benefit both to the present and to the future generations. Government organizations which have for their object the prevention of fire in our forests, the protection of young growth, and the reforestation of our waste areas, should have the fullest and most enthusiastic support from the public generally. This support will come only when the people are taught to realize the importance of our forests and the duty which the present generation owes to those who must follow us.

## The Use of Tractors in Woods Operations

*By George A. Mackie.*

**W**ITH the approach of Winter the problem of logging operations is once more presenting itself to woods managers and lumbering executives throughout Canada. During several Winter seasons past, the growing popularity of tractors has forced itself on the attention of Canadian loggers. The coming Winter apparently will permit of a more comprehensive survey covering the general utility of tractors for Winter hauling than was ever before possible. The outcome will be watched with keen interest by all firms interested and it is the intention of the *Illustrated Canadian Forestry Magazine* to devote a very considerable amount of space and attention to firsthand stories, suitably illustrated, showing the use of this very necessary adjunct to modern lumbering methods.

In this connection a report which has recently come to hand of a series of competitive tests held in Maine, is most timely and instructive. Several types of machines were in use and our information is that the Linn Tractor succeeded in demonstrating both its efficiency and economy of operation to the entire satisfaction of the officials of the Company by

whom the tests were held. The Linn Tractor during the four days of the tests, made a distance of 232 miles, hauling a total of 68 tons 724 lbs. on the consumption of 209 gallons of gasoline and 2¾ gallons of oil. Its nearest competitor, a much higher powered machine, made 204 miles, hauled a total of 50 tons 308 lbs. on an expenditure of 364 gallons of gasoline and 19¾ gallons of oil. From these figures it will be seen that the Linn Tractor won out on time, tonnage and mileage and also established a splendid record for economy of operation.

During the coming Winter Canadian lumbermen will have the opportunity of seeing the Linn Tractor in operation on a number of limits, extending from Newfoundland in the East to Port Arthur in the West and Cobalt in the North.

Mr. H. H. Linn of Morris, New York, inventor and manufacturer of the Linn Tractor, was prior to his engaging in the tractor business a practical lumberman himself. His years of lumbering experience had taught him the requirements of woods operators with respect to tractors. This information he has

capitalized to excellent advantage both for himself and for the lumbering interests generally. Accompanied by Mr. George Whitman, his financial associate, also of Morris, New York, Mr. Linn was recently a guest in Montreal of Mr. W. H. C. Mussen, President of Mussen's Limited, which firm is acting as a distributor in Canada of the Linn Tractor. Mr. Linn had the opportunity of meeting a number of leading Quebec and Ontario traction and industrial heads when he gave some firsthand information as to the possibilities and performances of the Linn Tractor.

Mr. Mussen's well known selling organization through its Logging Department is conferring a real benefit on lumbering firms in Canada by extending to them an opportunity of witnessing a practical demonstration of the Linn Tractors suitable for Canadian woods conditions at all seasons of the year. Further information as to the use of various types of tractors in Canadian woods this Winter will it is hoped be available for publication in subsequent issues of the *Illustrated Canadian Forestry Magazine*.

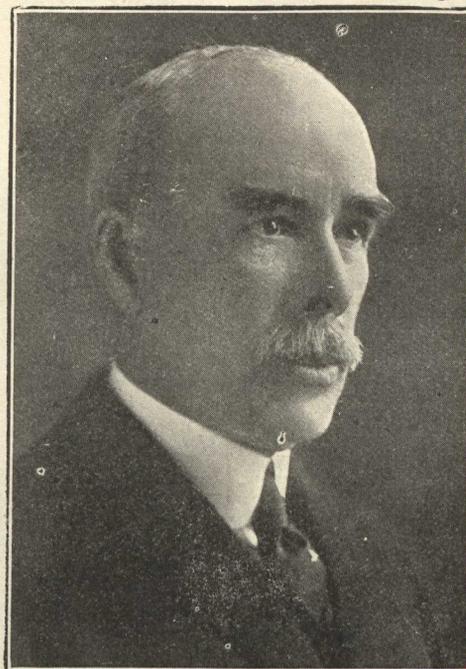
# Shelter Belts Change Face of Nature

The Beautifying Effect and Economic Value of Trees on Prairies are hard to Estimate

**M**Y ATTENTION has recently been drawn to the splendid work of the Canadian Forestry Association in their Western campaign to encourage the growing of shelter belts by farmers on their farms in our southern prairie areas and any one familiar with the prairie areas ten years ago and at the present time, is well aware of the progress that has been made in this respect. That the Canadian Forestry Association officials are aware that too much importance cannot be attached to this is evident for during the past Spring and Summer, they have had two Western forestry experts travelling through the prairies who have completed an itinerary of 8,000 miles, held 450 meetings and carried the propaganda to some 50,000 farmers. Such a work deserves the very highest of commendations for not only does the presence of trees on the farm beautify and add comfort to the farm and its occupants but the trees have a distinct economic value as well.

The Canadian prairies from the exceeding volume, no less than the high quality, of their agricultural products, have achieved such world renown that the question of the fertility of the soil, climate and other factors entering into profitable farming are beyond question. There are, however, sometimes contemplating settlers, who, whilst realizing the particular advantages farming on prairie land has from many points of view, entertain definite objections to living upon the vast, sweeping, unbroken plains, horizon-bound, treeless, devoid of shade or shelter. These objections would be justified did the Canadian prairies present such a bare, unattractive aspect, but such is no longer the case.

When the great hejira to the Canadian West was first under way, the



Col. J. S. Dennis, C. M. G.

officials of the Government and the Canadian Pacific Railway proved to their own entire satisfaction that, whatever was the reason few trees were found to be naturally growing on the prairie lands, it was not to be accounted for by the inability of these lands to produce and support substantial forest growth. Being satisfied to this extent, in the interests of better and more economic farming, in the fostering of more attractive farming and living conditions, they inaugurated a campaign of tree planting, at no expense to the farmer, save his initial labor and subsequent care.

The establishment of a 480 acre nursery at Indian Head by the Government was closely followed by a similar establishment of the Canadian Pacific Railway at Wolseley in the same province, which organization also

undertook extensive distribution. About 5,000 farmers per year, in the three Prairie Provinces, who have made application, have been satisfied. The principal variety of trees sent out have been Russian poplar, willow and carragana, species which had been found to be especially adaptable to prairie soil and conditions. During the past 21 years, there have been distributed 60,418,000 seedlings and cuttings, or about 3,000,000 annually.

In the time which has elapsed since the initial work was done, the Canadian prairies have undergone a gradual transformation. The face of Nature has been changed.

Beautiful green groves of thriving trees now surround many prairie farms, imparting shade in Summer, shelter in Winter to home and farm stock, exerting an ameliorating influence upon living conditions and adding beauty to the landscape. Neither should their economic value be undervalued. It is estimated that the work has resulted in the establishment of 40,000 shelter belts, valued by their owners at from \$500 to \$5,000 each, with an average value of about \$1,000. In the Spring and Summer of the present year, about 6,000,000 trees have been sent out from the Government Nursery at Indian Head whilst the forest nursery at Petawawa, Ontario, has been responsible for planting 150,000 on the forest reserves of the Prairie Provinces. It is a well known fact that trees both draw and hold moisture as well as restraining soil-drifting and particularly is this desirable in the southern portions of the provinces where the rainfall is less and the soil lighter.

I most heartily commend the work of the Canadian Forestry Association in their campaign to put more trees and shelter belts in the southern prairie areas.



Block of 70,000 Caragana trees, three years old, in the Canadian Pacific Nurseries, Wolseley, Sask.

# Posterity's Forests Prey of Destroyers

Timber Areas Ravaged for a Few Pounds of Bear Fat—Game Animals Decimated by Reckless Shooting.

By James R. Dickson

ONE day last August very early in the morning, I hopped off "The National" at a little trading post called Ombabika away up in that rolling, rocky Laurentian country northeast of Nipigon Lake and looked about to see if my guide were anywhere in sight. Sure enough, there was "Joe" already up, and after a hasty meal we dipped in our paddles and were off for Cross Lake—the start of a wonderful round

trip of ten days along laughing rivers and over placid lakes. The flies and mosquitoes were gone and as we paddled along, the ever changing woodland views and the floating gardens of lovely white water-lilies, together with the rhythmic stroke of the blades and the wine-like tonic of the clear, ozone-filled air, created "un\*ensemble" indescribably charming and exhilarating! Why is it that so few Cana-

dians yet seem to be aware of the sheer joy of being alive which waits for them in that summer paradise, that far flung net-work of sheltered coves, sunny isles, sandy beaches, sparkling cascades, and splendid game fish; of interesting wild-folk, picturesque Redmen, deep dark forests and endless mysterious waterways—our vast Laurentian Continent? Why are we Canadians so slow about escaping from the



## Photographs that Tell a Fearful Story

(At the left)—

In northwestern Ontario, to the north of Lake Nipigon, this dense and well developed stand of Jack pine stretched for miles. It constituted part of the reserve owned by the people of Ontario and every stick will be badly needed in the near future. But fire, set by Indians, swept through an 1 . . .

(At the right)—

. . . the stand in twenty-four hours was absolutely wrecked, the base of the trees girdled by the heat, with destructive insects already at their work. The stand awaited only the third inevitable process, wind-throw.



Gales of wind did the rest and scores of thousands of weakened Jack pine trees were heaped together in a mammoth pile of kindling. Under such conditions, the job of fighting a fire is well nigh hopeless. Note the next stage of a great natural resource, owned by the people, not by any private interest.



For scores of miles, the country has become an undulating wilderness of rock, utterly useless for farming and now despoiled of its only profitable crop, the forest. Thus is Canada wiping out her national assets by millions of acres annually.

miseries of August dust and drought to the refreshing beauties and benefits of our beckoning northland? Our good neighbors, the Americans, knowing better, are yearly responding to its lure in ever growing numbers, and very welcome indeed they are. On such a holiday trip, the varied activities of the day induce a vigour of body and peace of mind which made one blissfully anticipate

food or not. As the late Dr. Gordon Hewitt put it; "The Indian has a lust for killing. He destroys everything he sees, male and female, calves, fawns and everything else". In the Canadian National forests of the West, the practice now is to apply the same game protection and fire-prevention laws to white and red men without distinction. This policy is working out happily for the

its precious fields of wild rice ready either for the wild ducks or the Indian gleaners, we entered the Kapi-tongwa River and followed down its winding reaches for two long days, examining at intervals on our right a valuable mature forest of Jack pine tie timber and spruce suitable for logs or pulpwood; and seeing on the left hand, vast stretches of old burn, which kind and untiring Mother Nature had again clothed with thrifty young stands of pine, spruce, birch and poplar of the greatest potential value. Because, so far as the permanent prosperity of the numerous wood-using industries of Ontario is concerned, surely the protecting from fire of our now enormous areas of immature timber is to-day every whit as vital a matter as safeguarding the limited remaining areas of mature commercial forest? Consider also the disturbing effect of general fires on the fur industry. It is a well recognized fact among the northern trappers that the highly remunerative annual fur catch practically vanishes on fire swept areas for a period of 15 or 20 years; except for a few rabbits and lynx no self respecting wild animal is content to live in a *brulé*. And finally, the profitable tourist trade shuns all such burned areas until even a longer period has elapsed. For these and many other potent



By no means are all Indians of a mind to wantonly destroy. Here is one of the real Indian conservators, Joe Fournier, and his family. Joe's habitation is 'somewhere northeast of Lake Nipigon'.

the soft springy bed of fragrant balsam boughs and that "chief nourisher of life's feast" a deep, sweet sleep which "knits up the

### The Indian, a Game Destroyer.

ravelled sleeve of care".

Paddling on north toward Summit Lake, that peculiar lake from each end of which a river flows, we overtook a number of heavily laden canoes manned by Indians who were engaged in packing supplies for the two "ancient and honourable companies" away north to Forth Hope Trading Post on the Albany River. It seemed rather odd to see each canoe well stocked with deadly fire-arms because, for the sake of game protection, the Government strictly enjoins even fire rangers from carrying any such, and particularly as these dusky packers have all their food already provided by the employing companies. This unregulated carrying of rifles by Indian and breed packers engaged in commerce, causes a lamentable and wholly unnecessary slaughter of game because Indian travellers have a deplorable, ingrained habit of killing everything they come across, whether needed for



Chief Peter Wawa with his squaw came 150 miles by canoe to collect rice in the waters of Summit Lake, Northwest Ontario

present and future interests of both races, and as a potent aid to conserving her natural resources, Ontario might be well advised to adopt it without delay.

### Banishing the Fur Bearers

Passing over the shallow waters of Summit Lake, covered now with

considerations there would seem to be no more important function of Government to-day than ensuring the permanency of the splendid oncoming young forests that now cover most of the absolute forest land in Northern Ontario. And what more logical and effective step toward

(Continued on page 1212)

# Christmas Trees in the Near East

This Christian Custom was Introduced into Land where Christianity Originated by American Relief Workers

By Jane Hill

**C**HRISTMAS TREES never had any place in the celebration of Christmas in the land where Christianity originated, until the custom was introduced by American relief workers. Frequently Americans are hard pressed to find a suitable tree, for all forests within reach of transportation have been cut down by invading armies. It's true the country is gradually being reforested by the war orphans, who are being cared for by the Near East Relief, the organization chartered by the United States Congress to care for the famine stricken people of the Levant. But these new forests are hardly ready yet to yield Yuletide greens. So pretty nearly any kind of a tree is pressed into service at Christmas time.

At Sidon, the old Syrian port on the Mediterranean, which is in the heart of the fruit growing area, a wild orange tree filled with ripe fruit sometimes serves as a vehicle for the garniture of colored balls and paper stars. Naturally not much money can be spent for festivities in the "Land of Want."

In some centres even bright bits of paper are unknown. There have been Christmases so barren that colored labels from condensed milk cans, cocoa tins and other food containers were pressed into service for objects to gladden the kiddies' hearts.

But to return to the subject of trees. The tall cedars of Lebanon would make ideal Christmas trees for the orphanages. Unfortunately, however, these wonderful trees so frequently referred to in the Bible are fast becoming extinct, and would probably have vanished before now, were it not for the reconstruction program inaugurated by the Near East Relief to make the study of the rudiments of forestry part of the educational program for refugee children.

In the Caucasus, where 25,000 war orphans are being cared for in the protected areas, there are many wooded

districts. Circassian walnut is one of the timber products to reach the United States. In Asia Minor there are still large areas covered by forests of pine, fir, oak, elm, beech, chestnut and walnut.

Apropos of walnuts a pathetic story is told of the tragic Christmas of 1921 at Erivan, in the heart of the famine stricken territory. The Near East Relief was taking care of all the orphans it could inside the orphanages in addition to maintaining a bread line for the refugees. The rations were just sufficient to sustain life with scarcely an ounce over. The children inside the orphanages, realizing how much better even their humble lot was

than that of the half-famished children outside, abstained from eating their two walnuts apiece every Wednesday night for a month in order that the kiddies in the bread line might have something a little extra on Christmas day.

Christmas in the Near East, by the way, is a good deal of a movable feast. Western folks celebrate Christmas

on December 25th. The Orthodox Greeks observe the ceremony two weeks later and the Gregorian or Armenian Christmas falls still later. When you consider that the war orphans under the care of the Near East Relief are of all nationalities and all creeds, you can readily see that the proper observance of the most joyous season of all the year is a bit difficult.

The children love the Western way of celebrating Christmas with a Christmas tree, and this joy which the forlorn little boys and girls feel at the sight of a gayly decorated tree has really become an important influence in increasing the children's interest in all trees. This interest relief workers are quick to foster by stressing the importance of the re-forestation of the country.

It seems impossible to conceive that the great destruction of the forests of the Near East was brought about

## RE-FORESTATION IN THE LEVANT



Cypress trees planted by children under American care at the Near East Relief orphanage near Sidon.

by the Christians. Almost since the beginning of time there was in western Asia an old religious law of war that the invader might destroy the annual crops and produce scarcity and famine, but he must not destroy the trees, the olives and vines on which prosperity rested in so large a degree. Annual crops can be resown next year, but trees require many years before they begin to reward the labor bestowed upon them. This code of warfare was carried out for many centuries until the Crusaders, under the command of German, Norman and Frankish nobles and bishops inaugurated the era of the

total destruction of a country by cutting down the trees.

Sometimes this was done as an urgent measure. For example, during the siege of Jerusalem by the warriors of the First Crusade in 1100, almost all the olive trees around Jerusalem were cut down in order to form siege machinery. It is only in the latest development of "civilized" warfare that the plan was adopted of deliberately cutting down all trees in order to destroy the prosperity of a foreign country. Thanks to the re-construction program of the Near East Relief Christians are again rehabilitating the forests.

## Two Rather Remarkable Trees

### A Tropical Freak

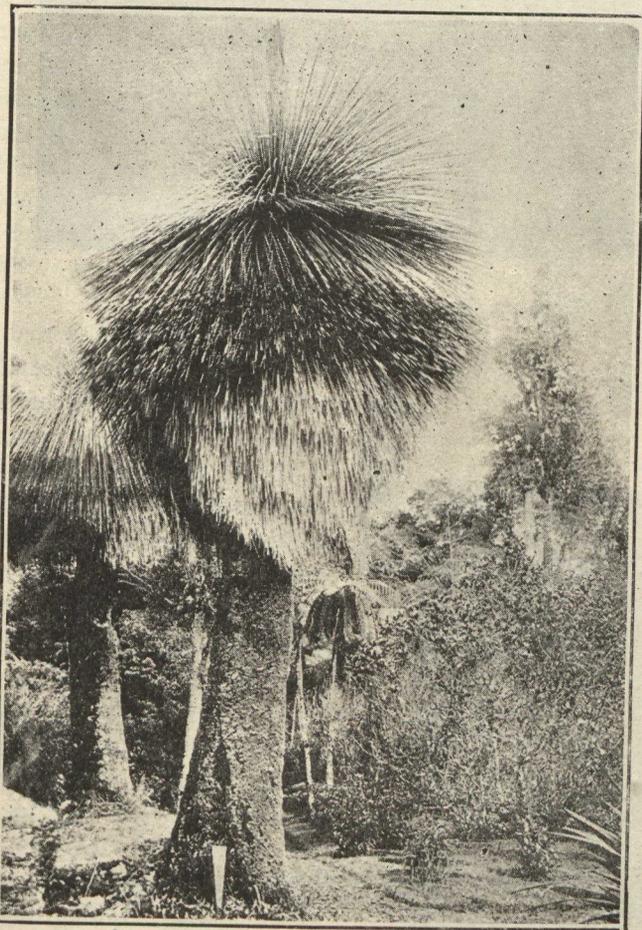
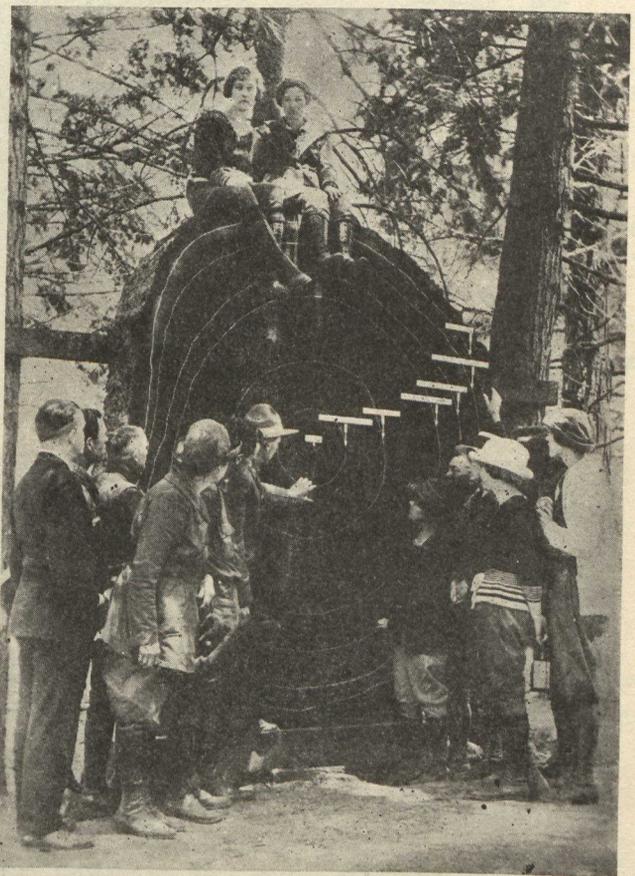


Photo: Gilliam's Service

#### EVER HEAR OF IT—THE GRASS TREE.

This remarkable tree is one of the tropical vegetation freaks scientifically known as *Xanthorrhoea Treissu Tjibodas* Preaunger, but better and more descriptively known as the grass tree. It seems to be a cross between the palm tree and the pine, but in reality it is a member of the palm family.

### The Age of a Big Tree



(Photo from Wide World Photos)

Naturalist Ansel F. Hall, of Yosemite National Park, has prepared this section of a giant sequoia, which was felled by a storm in 1919, to show visitors how huge and how old Yosemite's trees are. This tree, which is fourteen feet in diameter at the base, is 996 years old, a youngster, as compared to 4,000 years, the estimated age of Grizzly Giant, the largest tree in the Yosemite. The chalk rings on the tree indicate the years in which important historical events took place, e.g., the Battle of Hastings, the Discovery of America, the Declaration of Independence, etc. The space between the naturalist's forefinger and thumb measures the span of a long human life to compare with the span of this tree's life.

# The Fire Fiend's Threat to the Fur Trade

Finest Pelts Come from the Most Densely Wooded Districts—Forest Fires Destroy Shelter, Shade and Food.

*By Angus Brabant, Fur Trade Commissioner of the Hudson's Bay Company*

**T**HE fur trade of Canada, which is the oldest and remains today one of the most important industries both in value of product and number of people obtaining a livelihood thereby, is seriously hampered and threatened by the recurrence of forest fires.

The Company's experience is that the finest furs are obtained in the most densely wooded districts. One of the few exceptions to this rule is the white fox skin of the far northern Barren Land and Arctic coasts; but this exception only serves to prove the rule, as the depth of colouring and lustre of a pelt increase in direct relation to the degree of forestation in the locality where it is taken. This is due not altogether to the shelter and shade afford-



A Russian Red Fox.

ed by timber to fur bearing animals. The quality of the fur is influenced by the extent of the food supply which in the dense forests of the north is plentiful—until the fires come.

Our returns from certain districts that have experienced the devastation of forest fires, over what is but a comparatively small part of the total area, have indicated a marked decline in fur production for many years after the occurrence of fires. These conflagrations have not only destroyed magnificent stretches of Canadian forest, sweeping away valuable timber that will require a generation to reproduce, but they have wiped out the food supply and the shelter of the fur bearers. A great migration of the



The Polar White Fox.

animals takes place; the "economic organization" of the animal life in a region hundreds of square miles in extent oftentimes takes place. The returns at posts long distances a way from a forest fire will show the effects of this destruction and shifting of the fur-bearing "population".

Realizing the menace of forest fires, the Company's officers and servants in their constant travels through the wilderness have always exercised scrupulous care in putting out camp fires and in taking preventive measures whenever a conflagration threatened. Hudson's Bay men have been traditional "fire rangers"; and with the Indians, fire caution is hereditary. It is among the newer generation of Canadians, the campers, hunters, tourists and other transients who find their way into our northern forests that the need for education in matters pertaining to fire prevention is most urgently required.

The appalling losses to the fur trade which are traceable to forest fires affect a very considerable portion of our population, the many thousands who earn a living as trappers, traders, fur dressers and dyers, garments makers, merchants and salespeople.

That the Company is not relaxing its vigilance in the prevention of forest fires is evidenced by the fact that instructions are sent from time to time to the fur trade



Wild Silver-Fox Skins.

posts where the managers not only take precautions in their respective districts but endeavour to bring home to the Indians the importance of avoiding fire risks.



# ASSOCIATION ACTIVITIES

A Record of C.F.A. Enterprises in Various Parts of the Dominion

AS this month's issue of the "Illustrated Canadian Forestry Magazine" goes to press, one corner of the Canadian Forestry Association's offices at Ottawa is being piled high, with bundles of school children's essays which have been arriving from every corner of Canada. Several months ago the Association instituted a prize essay competition in forestry, offering three prizes of \$15, \$10 and \$5 for each of the nine provinces. The object of the competition was to stimulate study and inquiry as to the forest resources of Canada and protection against the plague of forest fires, the planting of trees on urban streets, the establishing and improving of farm wood-lots, and the cultivating of shelter belts on the bare prairies.

Sixty thousand copies of the essay in English and French were circulated to the teachers of schools in all parts of Canada and within a few days it became evident that the students' interest had been readily excited, although it was a foregone conclusion that in a great many schools a crowded curriculum would make it impossible for the teacher to give much time to the competition. However the evidence now in the hands of the Canadian Forestry Association prove the competition to have been an immense success. Of the many essays at hand it may be said that these represent only the cream of the essays actually written, as the teachers sorted the manuscripts and sent in only the best. In a good many cases, only a half dozen essays from an entire school have been submitted, as these particular ones, in the estimation of the principal, represented those having a maximum chance for success. In the first essays sent out a time limit of November 1st was mentioned; but owing to the postal delay in delivery of the competition forms to Alberta and Prince Edward Island, it was necessary to extend the time to December 1st. With the Alberta essays in hand, judging will commence shortly after December 1st and the prizes will be awarded about the New Year.

Although the Association's financial position would not permit the

offering of larger or more numerous prizes, all those who competed will receive an appreciative letter from the Canadian Forestry Association, together with some sort of souvenir in recognition of the effort made. Should anyone be in doubt that the school teachers and children in even the most remote parts of the Dominion are ignorant of the vital considerations in forestry and tree planting, the notion would be quickly dispelled by reading through a dozen of the essays sent in by children of from ten years of age upward. All competitors were discouraged from copying pieces from text-books and, indeed with very few of the children were text-books available, either in schools or at home. There is in evidence a very high average of intelligence coupled with remarkable neatness and fine penmanship. The Canadian Forestry Association during the past several months has made arrangements to bring its propaganda into close touch with hundreds of thousands of the younger generation throughout the Dominion. The information gathered as to the juvenile attitude as expressed in the essay competition will prove of value.

## FOREST CROPS LEAD IN B.C.

Agriculture with \$59,742,994 was the second industry in British Columbia in 1921, according to a report issued by Hon. P. Barrow, Minister of Agriculture, recently. Production shows a shrinkage of 13.39 per cent. in value from the preceding year, owing to decreased values.

Forest products lead the province with a value of \$64,970,000, while mineral production had a value of \$28,066,641 for the same period. The fruit crop for 1921 was the largest on record, its value to the producers being \$6,504,850, an increase of 15 per cent. over the value of the 1920 crop. In dairy products there was an increase of 846,558 pounds of butter, while egg production increased by 200,677 dozen.

The area planted to fodder crops was 6,555 acres more than in 1920, but the total value of fodder crops was \$4,080,432 less, owing to the lower value of the hay crop. The honey production was 309,074 pound, valued at \$89,631 against \$67,631 for the previous year.

## A League of Young Canadians.

The Canadian Forestry Association set out recently to interest the youth of Canada in the public cause of forest protection and the extension of tree-planting by organizing a Young Canadians Forest League. Special offices have been secured at Ottawa and the progress thus far made indicates definitely that the Canadian boy is fully eager to learn more of the forest resources of his country and to play the part of a patriotic citizen in their better protection and management. Boys of today will control the Canada of tomorrow and it is highly essential that their interest and enthusiasm should be cultivated while their minds and sympathies are still plastic and receptive rather than to wait ten or twenty years until their opinions and prejudices can be influenced only with difficulty. It is widely recognized that the lethargic public sentiment on forestry at the present time is the direct product of misinformation and prejudice which has been permitted to be inculcated in the child's mind by a variety of educational processes during the school age. It is a practical impossibility to have propaganda written into the school books of the Canadian child, so that whatever is done to correct old-fashioned points of view and to establish an intelligent appreciation of the forest resources, their protection and management, as a state duty, will have to come through the specialized efforts of such an institution as the Young Canadians Forest League.

The League starts its career under most favorable auspices with the cooperation of the Boy Scouts of Canada assured and with a definite understanding from the Commanding Officers of the School Cadets that their organizations in hundreds of communities will be placed at the service of the Canadian Forestry Association. This gives an initial membership in the Young Canadians Forest League of about 150,000 alert Canadian boys. Subsequent issues of the *Canadian Forestry Magazine* will contain information as to this new development of the Association's educational campaign.

# ASSOCIATION ACTIVITIES

A Record of C.F.A. Enterprises in Various Parts of the Dominion

## Forest Exhibits Car.

Great crowds continue to visit the Forest Exhibits Car of the Canadian Forestry Association, which for the past month has been travelling in New Brunswick. Nowhere in the Dominion does the Canadian Forestry Association secure more courteous and enthusiastic co-operation than from the New Brunswick Forest Service, which is under the direction of Mr. G. H. Prince.

From the Minister of Lands and Mines, Hon. C. W. Robinson, down to the humblest forest ranger, every assistance has been given and many public men have gone to a great deal of trouble to address public meetings organized by the Association and to develop the attendance of the local schools at each stopping-place. Writing to the Canadian Forestry Association under date of November 14th, Mr. Prince is good enough to say: "I think that you deserve a great deal of credit for the manner in which this campaign is organized and carried out, and it cannot help but have a considerable value." The Chief Fire Warden of Westmoreland County, Mr. C. E. Lund, writes: "I think the educational advantages derived are far greater than last year. Personally I was very much pleased and benefitted by the information so uniquely displayed." Excellent help in the New Brunswick campaign has also come from Mr. W. E. Golding, Manager of the New Brunswick Railway Company and from many other citizens interested in the cause of forest protection.

The following details are taken from the diary of the exhibits car, which throughout the season has been under the competent direction of Mr. G. Gerald Blyth, Assistant Secretary of the Canadian Forestry Association, and two assistants,—

Newcastle, N.B.: The Mayor, Mr. Fish, went to no end of trouble to assist us. We secured the free use of the opera house for the afternoon and filled it with eager children. The attendance was at least 650 and the total attendance at the car for the day was 1,800 persons.

Nelson: Stopped here for a few hours before proceeding to Chatham. About 160 school children and many adults.



Campbellton: 2,500 people visited the car. Meeting addressed by Mr. David Champoux and Mr. Blyth. Audience was excellent in every respect, numbering almost 600.

Dalhousie: 800 persons at car and 400 school children at the afternoon meeting.

Chatham: Total attendance well over 1,800 persons.

Moncton: Close to 1,000 persons this afternoon in moving picture theatre and had 2,600 people at the exhibits car. Following day held public meeting in Empress Theatre at 11 a.m. with Mayor Edgitt as Chairman and Hon. C. W. Robinson and Mr. Blyth as speakers. Total attendance, 850. One of the very best meetings of the year. Total attendance at the car for the day, 2,200.

Fredericton: 2,500 people visited the car. Two meetings were held in the opera house with an attendance of 1,500.

Woodstock: Approximately 1,200 people visited the car and close to 800 in afternoon at moving picture theatre.

Grand Falls: About 400 visitors at the car and 270 in the evening.

The total attendance to the middle of November was well in excess of 200,000 for the Exhibits Car alone, with more than 60,000 additional to be credited to the series of daily meetings. Thus far in 1922 the Forest Exhibits car has travelled over 12,000 miles.

Readers of the *Illustrated Canadian Forestry Magazine* who are also members of the Canadian Forestry Association will doubtless recognize in this

unique enterprise a most potent force in developing public interest in the protection of the forest resources and in supporting our public administration in better forestry policies and advanced administration. If the funds of the Association permit, the Exhibits will be kept running all winter as, through the courtesy of President Robb of the Grand Trunk Railway System, excellent facilities for heating the car in the coldest weather were recently provided. Writing recently of the Forest Exhibits Car of the Canadian Forestry Association, the *Canada Lumberman* stated editorially:—

"The forest exhibits car of the Canadian Forestry Association, which has been described as a forestry protection school on wheels, was recently in St. John, Fredericton and other cities in that part of New Brunswick. The forest exhibits car was rebuilt last spring and now represents one of the most unique and interesting travelling displays that has ever been seen in this province. The interior is broken up into a series of rooms each devoted to a particular subject. New and elaborate working models, one of which shows a graphic transformation of a forest community into a forest fire-swept waste, have attracted the keenest public attention and undoubtedly has been a valuable educational factor. Most visitors are surprised to see how much varied material has been assembled in such a comparatively limited space, but the daily attendance of from one to three thousand, most obtained in very small communities, is the best evidence of the car's popularity."

# E D I T O R I A L

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### NOTICE TO CONTRIBUTORS

The Editor will consider for free publication articles, photographs and communications of general interest. Rejected matter can only be returned if the necessary postage is enclosed, and no responsibility is undertaken for the safe return of such matter. When payment is desired the fact should be stated. Letters and articles must be written on one side of the paper only. The views expressed by contributors writing over their own signature are not necessarily endorsed by the Editor.

## The Claims of the Future

**T**HERE are not a few whose minds are so inclined to respect for scientific method that "propaganda" appears almost abhorrent. This is easily understood as a personal dislike, but it cannot hold water when viewed in relation to the machinery by which scientific ideas are turned into public policies in a country such as Canada. The cause of State forestry is helpless without the aid of public understanding and sympathy. Any who doubt this statement should read the article contributed in this issue by Hon. Mr. Drury, Prime Minister of Ontario. Altogether too many people fall back on the easy belief that a democratic country is ruled by an aristocracy of ideas instead of by waves of sentiment, much of it superficial and ill-aimed.

Public forest policies today are being determined too much by transient considerations, utterly inapplicable to forest management. The cry for "cheap logs" still dominates in the corridors of Legislatures with only here and there a counter-warning on our mortgaged future. Look where you will, political platforms and political practices deal with issues of the present that promise their maximum dividends in six months or at most a few years. It cannot be too often stressed that all forestry in Canada is and will be government forestry, directly or indirectly, and the extent of government encouragement and financial support for forestry science will be determined by what the voters are thinking. Government attitudes are shaped by the public mind, and that mind is determined by the inspirations planted there by some educational process. It may be thought at times that the altruism inherent in the national forestry cause is more a handicap than a virtue

but at the same time once we attain the "state of mind" that will conceive of "national interest" in terms of present sacrifice for future well-being, the most advanced forestry policy would rapidly come true and could no more be disturbed than the design and colours of the British flag.

## Must Arouse Public Conscience

By George M. McKee, Pres. Can. Pulp & Paper Association

**T**HE PROTECTION of our forests from unreasonable exploitation and from despoilation by wanton or merely indifferent incendiarism will never be possible, in my opinion, until the public conscience is aroused to a knowledge of the inherent value of these resources and to the necessity of doing everything possible for their safe-guarding. Any agency which aims to promote education along these lines is to be commended and is entitled to generous support. Education should begin, as it does in the Scandinavian countries where forest protection is axiomatic, in the school-room. Boys and girls should be taught the economic and physical value of our forests and told how to avoid their unnecessary destruction. If this is done the coming generations of Canadians will have a proper appreciation of this vastly important subject. Law-making to protect our forests is all very well in its way—and it would undoubtedly be better if the laws we have on this subject were strenuously enforced and their violations rigorously punished—but these laws are and will remain ineffectual until they are backed by a 100 per cent. public opinion.

## Some Facts Concerning Ontario Forests

The forest area of Ontario is 150,000 square miles.  
The estimated timber on Crown lands is:—

Pine ..... 10,000,000,000 feet.  
Pulpwood ..... 200,000,000 cords.

Provincial Revenue from forests in 1921-22:  
\$4,400,000.

Fire Destruction: Last summer, about 300,000 acres of forest were burned over.

Fire Protection: 1,000 men scattered over 100,000,000 acres at a cost of half a million dollars a year.

The pulp and paper industry in Canada is the third most important in exports and in revenue produced to the Governments.

In Ontario the investment runs over \$100,000,000, close to \$90,000,000 of this being in Northern Ontario.

## A Reply to Judson Clark's Ontario Report

A delegation of the Canadian Lumbermen's Association recently appeared before the Government of Ontario to protest against certain contentions made in the Judson Clark report on Ontario's forest management, notably Dr. Clark's condemnation of the Doyle Rule of measurement. A copy of the lumbermen's memorandum was made available to the "Canadian Forestry Magazine" too late for this issue and will be published in the January number. It will be found well worth reading.

## ENCOURAGEMENT

From a new Toronto Member,—“From a study of my first copy of Canadian Forestry, I am convinced I have joined a live organization with high ideals and a real objective. With all good wishes for your success in this great patriotic work,” W. A. P.

From a reader of the Canadian Forestry Magazine in Port Arthur comes the following commendation.—“I want to congratulate you heartily on that very vital article in the September issue of the Canadian Forestry Magazine, 'Public Opinion, the Lumberman's Senior Partner.' I have not seen anything for many a day that so recommends itself to my better senses, as the sane and admirable way in which you get down to brass tacks and put your finger on the real essentials of our forestry problems of Canada. Our two words must certainly be prevention in fire protection and co-operation in utilization. Keep up the Association's splendid work.”

## “NEIGHBORS”

By Robert Stead

**T**HIS new novel by one of Canada's most experienced writers has already proved its popularity through the large sales recorded on the bookstands. Robert Stead has a unique knowledge of Western Canada through many years of personal contact and at the same time has retained an uncommon sympathy with the spirit and ambition of the western pioneer. His power of characterization is especially striking and while some of the vigorous dramatic incidents of his previous novels are not as much in evidence, there is sufficient conflict to engender and sustain the reader's interest from cover to cover. What strikes one particularly is that Mr. Stead has not imported the artificial elements common to so many prairie stories and has consistently avoided exaggeration while at the same time permitting no note of monotony to creep in. It is a book from which discriminating readers will obtain much enjoyment.

## An Unintentional Appeal

**T**HE ILLUSTRATED CANADIAN FORESTRY MAGAZINE does not include on its staff a “Sob Sister,” whose mission it is to seek out pitiful and deserving cases, with which to harrow the feelings of its readers at the Christmas, or any other Joyous Season. We are venturing to assume the role of the aforesaid missing member of our staff, by reason of a letter which has come to this office from a would-be member of the Canadian Forestry Association. This letter, the writer of which we are, for obvious reasons, leaving un-named, was not sent for the purpose of exciting sympathy or soliciting aid, but we are taking upon ourselves the responsibility of producing a few extracts from it:—

Dear Sir:—

You will please excuse me for not answering your letter before. I really wanted to take advantage of your kind offer, but my position is such that I have been and am unable to do so, and I will explain why. I bought this  $\frac{1}{4}$  section under the Soldiers' Settlement Board. It was a bush  $\frac{1}{4}$  with only 7 acres broken. The wife and I got busy and we worked from daylight till 9 and 10 o'clock at night, scrubbing and grubbing, and last year, 1921, I had 30 acres in crop. The crop looked splendid and then the “rust” came, and from 12 acres of oats my threshing bill showed 139 bushels. I could not get any seed last spring so I was only able to put in 10 acres of barley and oats and I shall need all of it for feed. The wife and I have been existing this year from the produce of 4 cows, so you can imagine there were many days this year that we have had to go without even the bare necessities of life, and this winter, I am not even able to buy the wife any warm underwear or shoes. I myself do not mind, I roughed it in France, but I am having a longer spell of it here. \* \* \* I have had another 30 acres of bush land broken this summer, so that gives me 60 acres now, and am applying to the S.S.B. for seed, and if I get it I know I shall be able to go ahead. The wife and I are going to be pretty cold and hungry this winter, but every cloud has a silver lining, and as soon as I am able I shall join the Canadian Forestry Association. The trees that the Forestry Branch sent me are doing splendidly. It has been endless work keeping down the weeds, but the results shown have more than paid for the labour expended.

The foregoing extracts speak for themselves without any further elaboration on our part. Any of our readers who feel inclined to answer this unintentional appeal, may do so through this publication.—*Editor.*

## BARNJUM TOWN FOREST PRIZE AWARDED

The Barnjum prize of \$250.00, in cash, for the best municipal forest plantation in the Province of Quebec, has been awarded and paid to the Town of St. Jerome, Lake St. John. It is to be hoped that this may be the inauguration of a general tree planting campaign by the municipalities throughout the whole Dominion of Canada.

## Growth of the Canadian Pulp and Paper Industry

**T**HE extent to which the Canadian Pulp and Paper Industry is increasing in importance is very strikingly brought out by the 1920 Census of the Dominion Bureau of Statistics, the results of which have just been made public through the Canadian Pulp and Paper Association. The Census shows that the total capital invested in the pulp and paper industries in Canada as of 1920 was \$347,553,333 and today would probably be closer to \$365,000,000. The investment by provinces was:

|                        |                 |
|------------------------|-----------------|
| Quebec .....           | \$176,347,349;  |
| Ontario .....          | 109,169,591;    |
| British Columbia ..... | 36,782,030;     |
| New Brunswick.....     | 19,306,351; and |
| Nova Scotia .....      | 5,948,012.      |

The Census figures of 1911 place the capital invested at \$53,696,933, making the growth to date in the neighbourhood of 700 per cent.

The number of mills in operation as of 1920 was 100, made up as follows:—

|                  |    |
|------------------|----|
| Pulp mills ..... | 40 |
| Paper mills..... | 33 |
| Combined .....   | 27 |

These were situated as follows:—

|                        |    |
|------------------------|----|
| <i>Pulp Mills—</i>     |    |
| British Columbia ..... | 4  |
| Ontario .....          | 7  |
| Quebec .....           | 18 |
| New Brunswick.....     | 5  |
| Nova Scotia.....       | 6  |

|                              |    |
|------------------------------|----|
| <i>Pulp and Paper Mills—</i> |    |
| British Columbia.....        | 2  |
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| Quebec .....                 | 12 |

|                     |    |
|---------------------|----|
| <i>Paper Mills—</i> |    |
| Ontario .....       | 17 |
| Quebec.....         | 16 |

Other figures of interest gleaned from the Census Return are:

Employees—1,358 female; 29,940 male, (exclusive of woods operatives).

Wages and salaries—\$45,253,893.

Value of products—\$136,639,831.

Paper produced—875,696 tons of newsprint paper valued at \$80,865,271; 73,196 tons of book and writing paper, valued at \$21,868,807; 77,292 tons of wrapping paper, valued at \$12,161,303; 158,041 tons of boards, valued at \$12,904,662; miscellaneous, \$8,839,888.

Pulp produced—1,960,102 tons, comprising, ground-wood, 1,090,114 tons; sulphite, bleached, 138,624 tons;

soda, 5,768 tons; other chemical fibre, 21,460 tons. Total sulphite, unbleached, 515,649 tons; sulphate, 188,487 tons; value, \$141,552,862. Produced for users' own consumption, 963,762 tons, valued at \$41,772,617; produced for sale in Canada, 238,119 tons, valued at \$21,998,630; produced for export, 758,221 tons, valued at \$77,781,615.

Pulpwood consumed—2,777,422 cords, valued at \$45,404,889, an average of \$16.34 a cord. Spruce, 1,873,024 cords; balsam fir, 687,519 cords; hemlock, 176,029 cords; poplar, 5,732 cords; pine, 15,743 cords; all other kinds, 19,375 cords.

Materials consumed in manufacture of pulp—Sulphur 91,080 tons; limestone, 74,031 tons; lime, 60,202 tons; soda ash, 7,298,997 lbs.; bleach, 30,213,246 lbs.; sulphate soda, 32,531,376 lbs.; salt cake, 70,837,024 lbs. Total value \$9,335,243.

### Exports of pulpwood

In addition to consuming two and three-quarter million cords of pulpwood a year, Canada exports to the United States, 1,000,000 or more cords a year. For the twelve months ending December 31, 1921, such exports amounted to 1,092,553 cords and were valued at \$14,617,610. Pulpwood exports for the past nine years were as follows:—

| *Year     | Cords     | Value       |
|-----------|-----------|-------------|
| 1913..... | 1,035,000 | \$6,805,945 |
| 1914..... | 972,508   | 7,388,770   |
| 1915..... | 949,714   | 6,817,311   |
| 1916..... | 1,068,207 | 5,743,847   |
| 1917..... | 1,017,848 | 6,448,198   |
| 1918..... | 1,325,565 | 8,339,278   |
| 1919..... | 1,597,042 | 15,386,600  |
| 1920..... | 838,732   | 8,454,803   |
| 1921..... | 1,615,467 | 21,513,594  |
| 1922..... | 825,967   | 9,879,150   |

\*Canadian fiscal year, ending March 31.

### Imports of Paper

Importations of Paper into Canada for the twelve months ending December 31, 1921, were valued at \$8,390,160. The value of such importations for the last nine years was as follows:—

| *Year     | Value      |
|-----------|------------|
| 1913..... | 8,221,591  |
| 1914..... | 7,896,668  |
| 1915..... | 5,764,379  |
| 1916..... | 4,724,062  |
| 1917..... | 6,848,422  |
| 1918..... | 7,516,389  |
| 1919..... | 9,044,390  |
| 1920..... | 9,970,656  |
| 1921..... | 13,636,399 |

\*Canadian fiscal year, ending March 31.

**Are You an "Old Fulton"?**

(Wilkie Press)

A visitor to Adanac (Saskatchewan), admiring the splendid trees which surround the C. P. R. depot, remarked upon their beauty to one of the residents, and he replied: "Yes, they are sure fine trees. They were planted some twelve years ago by old Fulton (the station agent at that time). He is gone, but the trees are here."

There are not enough "Old Fulton's" around, unfortunately, but the work he did while he was living here stands as a monument to his memory and for many decades yet his name will be mentioned in connection with the planting of those trees.

This fine shelter belt of caragana, maple and poplar surrounds a beautiful garden which is protected from the fierce rays of the sun and forms a secluded and a shady retreat in pleasing contrast to the glare and heat of the windswept prairie surrounding. It stands as a living demonstration of the comfort to be derived through a comparatively short few hours of labor and care. Nature has done the rest, and, as usual, has done it remarkably well. There is no reason why a similar effect could not be produced in a short space of time on the grounds surrounding every house in town and the streets, too, could be made beautiful by the co-operation of the residents, all working together in early spring. The result in a few years would bring about a transformation unbelievable, and now is the time to make plans for the future, to decide what shall be done and what variety of trees shall be planted to give the best result. Fortunately in most of the prairie towns steps are being taken to plant trees and to set a good example to improve surroundings. After all we can do much to make life more comfortable on the prairie if we are prepared to do our share of the necessary work, but as soon as one makes a real start the tree cultivating habit will soon commence in earnest and the good results obtained will give due encouragement.

The farm which possesses a good shelter belt and well laid out trees around the buildings attracts attention immediately and greatly enhances its value.

**THE LOG RAFT GOES TO SEA**

With the raft afloat and ready for its voyage, an ocean-going steamship that is a magnified towboat with 1,200 or 1,500 horse power in her engine room, swings in line ahead of the log-built craft and makes fast

her two-inch hawser to the towing-link of the backbone of chain that runs through the centre of the raft. Then a river tug—a fussy little body, important and officious over the task of guiding the way down to the sea—backs down to the bow of the bigger towboat and there makes fast her own tow-line.

A gray-haired man on shore surveys the whole scene, sees that all is ready, then waves one arm at the men standing at the mooring bitts and shouts "Cast off."

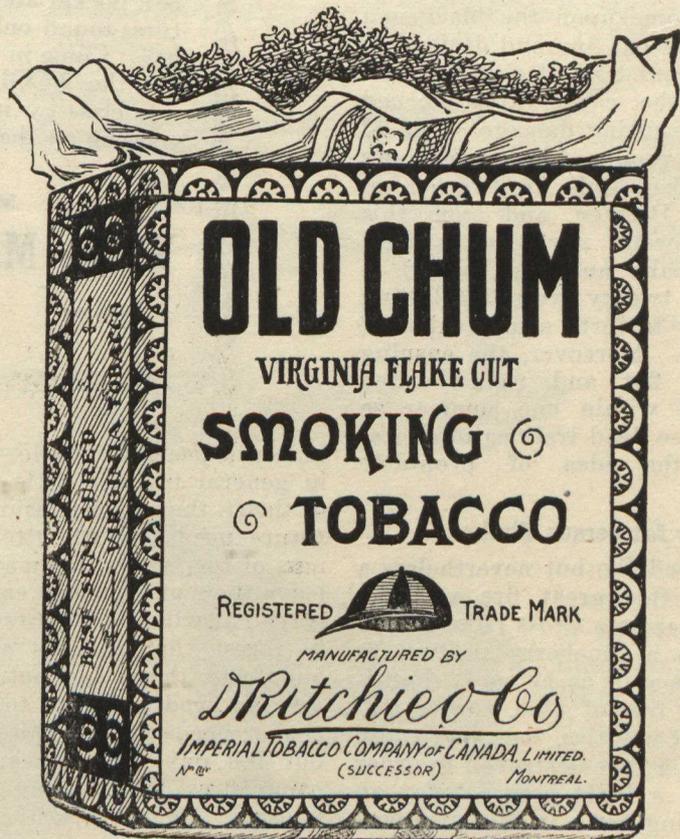
From the bass-voiced siren of the bigger towboat there spurts a single burst of steam—a grunt in ship language which means "Let's go." The little river tug echoes the remark with a burst of her own; but she speaks in falsetto—"Let's go." That makes it unanimous. Bells jingle in two engine rooms. Two hawsers stretch out, dripping water, and the raft moves slowly out, bound downstream to the sea.

("Business")

**SMOKE**

**OLD CHUM**

"The Tobacco of Quality"



Buy the 1/2 lb. Tin

(Continued from page 1202)

this end could possibly be taken than forthwith declaring our entire rocky Laurentian area a permanent forest reservation?

#### Lakes that teem with Fish.

Proceeding south from the Kapingongwa River, we entered Lake Manitou, the first of an entrancing series of six beautiful lakes. These lovely sheets of wild water dotted with islands are each from eight to twenty miles in length, and three to eight miles wide, and yet the first two we explored—Manitou and Upper Meta—are not shown as yet on any official map. In these lakes and connecting streams it is possible to catch sturgeon, maskinonge, pickerel, speckled, black and salmon trout, whitefish, perch, ling, pike, etc., in fact most of the finest food and game fish except black bass, and one cannot but hope that the authorities may shortly take steps to introduce this "bonnie fighter" and so complete the list. Our largest speckled beauty weighed between four and five pounds, but one caught this season in the Kowkash River which runs through two of these lakes, namely, Abamasagi and O'Sullivan, tipped the scale at eight pounds!

On Upper Meta Lake I was surprised to come upon the blackened waste of a recent fire, and decided to trace the boundary of this fire and determine the cause, area burned over and resulting damage. One of the plates reproduced herewith shows the spot where this fire started on Lily Lake Portage, and from this point it swept northeast around Marshall Lake and far beyond, a distance of twenty-five miles, killing from thirty to forty square miles of fine timber. Moreover, the ensuing plague of flat and round-headed borers had within one summer so riddled these dead trees as to almost preclude the idea of profitable salvage.

#### Bear fat versus Timber.

It is incredible, but nevertheless a fact, that this great fire was deliberately set by a Cross Lake Indian "for make a blueberry pasture to draw the bears" as he said. Fancy millions of feet of pine, spruce and poplar timber,—ties, logs and pulpwood—being thus destroyed in order to provide a little bear fat for an Indian frying pan! In the same way ruinous fires are set to "draw" the moose and deer, by inducing the lush young growth which they crave. The Ojibway Indians and half breeds are

indeed a peculiar people—they seem in general to have little conception of thrift, that is, of considering their future needs. With utter heedlessness of the future, too many of them leave their unquenched camp fires to spread at will and destroy the friendly forest that shelters and clothes and feeds them, and naturally they give no heed whatever to the future timber needs of the white man. On our ten day trip we came on five camp fires left blazing by Indian packers along the Ombabika—Fort Hope trade route,—four of these had already started into the forest and as the woods were dry as tinder, only after much hard work were we

able to trench around and extinguish them.

An impression one gets is that if warning fire and game notices written in Ojibway and Cree syllabic were posted throughout the north woods the red men might be much more careful of the natural resources. Again, why not send a qualified speaker out with the treaty-paying party each summer? At the great Indian gatherings in Mammamattawa and elsewhere, he could come into direct contact with all the natives in the region and it is just possible that earnest appeals couched in their mother tongue, might rouse their self-interest in forest protection.

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that are sure to  
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**Future Forests gone in Smoke.**

Another phase of the Indian fire menace to our northern woods was come across by the writer in the case of the destructive fire which last spring severely damaged the fine stand of timber between Caribou and White-Water Lakes, south of the Ogoki. About 100 square miles are reported to have been fire-swept here with heavy loss of the mature Jack Pine and spruce. The evidence points to this fire having been set by an Indian trapper to drive out a white man who had usurped his trapping rounds. Closer patrol and inspection are surely needed along the Ogoki and Albany Rivers, for besides the valuable oncoming forests, large areas of mature timber yet remain and require protection. It is true that the Ontario Fire Ranging Service is now doing excellent protective work but the Chief Rangers are still greatly hampered in places by lack of telephone lines and by the immense size of their districts.

Another thing emphatically impressed on one is that the watchword of forest fire protection in our north country, where the topography is so uniform and the coniferous forests so inflammable, must be PREVENTION in capital letters. Initial fires in, say, a Jack pine stand, may conceivably be very largely prevented

by an educated public opinion and the agencies at its command, but once let the preventable first fire run through to create a mass of falling debris, and a still more destructive second fire is then practically inevitable. And just here one is tempted to enter a word as to the existing conditions of portions of the C. N. R. rights of way through Northern Ontario. The heavy masses of dry Jack pine debris that one sees stretching for miles, are directly a sinister menace to the valuable contiguous forests and, indirectly, they are exerting a demoralizing effect on public opinion which is even more disquieting.

**Red Deer fast Disappearing.**

During our ten day trip numbers of moose were seen and also one or two of those exquisitely graceful creatures the red deer, but these are fast being depleted by the wolves and Indians. Apropos of this I may quote here the opinion of Mr. Roy Thompson, who has spent the past two seasons in Patricia land,—“game such as moose, caribou or red deer are much scarcer north of the Albany River than south of it at present, as the Indians simply never allow one to escape if he is seen by them.” No signs of beaver or otter were seen by us and in fact these fur bearers

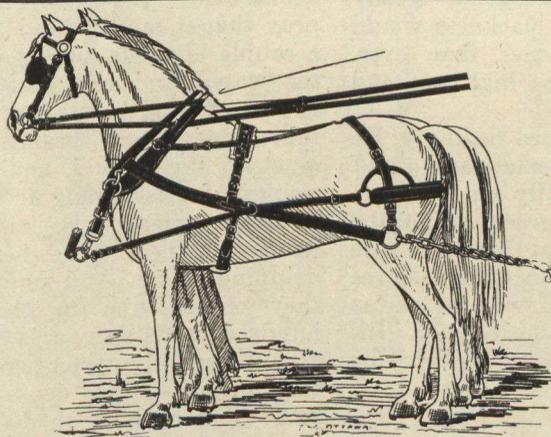
have now become so scarce in Northern Ontario east of Lake Nipigon that many people are anxious to have a five year close season declared. The truth is that we must evolve a general scheme for farming all of our wild fur resources. That this is entirely feasible is shown by the success of Mr. Oliver Belmore at Wabakamachee Lake, where for the past eleven years by carefully protecting, conserving and rotating the fur crop, he has evolved a satisfactory, continuous revenue from a comparatively small trapping district.

One returns from the delight and interest of such a trip, feeling, above all things, the vital need that we Canadians should conserve our renewable resources by carefully and wisely *farming* and not mining them, whether forests, fish, furs, or game are involved. And for each resource this problem of maintaining a sustained yield seems to resolve itself into a matter of frank, harmonious common sense co-operation along business lines, as between a junior partner or *tenant*—the individual, company or corporation seeking the privilege of temporary use—and a senior partner or *owner*—the body politic whether provincial or national which holds the resources itself, in perpetuity.

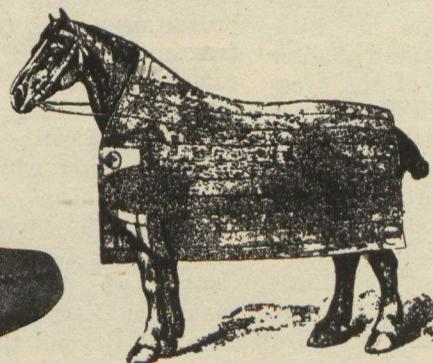
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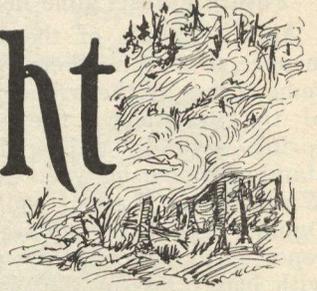
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# A One Man Fight

BY H. Knight Harris



**T**HE last little line of flame was beaten out on the edge of the glade next the timber, and flickered into a wisp of gray smoke lazily curling through the hot May sunshine. It was all very still down there in the narrow bottom, that is only a few hundred yards across between the benches—those low, slab-sided, flat-topped foothills—with the real hills of scarp and forest rising right up to the blue a little way behind them. The unseen Crawl, that hugs the foot of the southern bench and gnaws eternally at its underpinning, alone broke the silence, as it roared over bar and snag-pile with its full volume of melted snows from outlying peaks of the Selkirks.

Cairns mopped his eyes out, and looked approvingly across the wild-hay meadow, from off the face of which he had just finished burning the dead stuff. One good, steady shower, and all that blackness would be green again—greener than ever. Then he looked at the high sun and the short shadows.

"Eats!" he exclaimed feelingly. He sauntered toward the cabin, and a puff of air struck gratefully on his forehead from the cool greenness of the dim cedar grove that bordered the creek. A little column of dry leaves and dust danced and whirled across the meadow, and fell dead again. Inside, he cooked and ate—then he smoked.

Luxuriously, after a long, hard morning, he lay back on his one bit of civilized furniture, a soft lounge chair, and watched from his little window the play of light and shadow in the waving branches of the sycamores round his spring. The breeze had freshened—"With luck, some rain tomorrow," he prophesied to himself.

Then his eyes narrowed, and he tensed. Five yards from the cabin, among the chips and rot around his saw-buck, a tiny spiral of smoke was rising—just a few inches! Before he could move, another jetted close by!

He was through the door with a bound. Beyond the clump of bushes about the spring-hole a tall, dead cedar

was blazing at a dozen points, a pennon of scarlet waving from its broken top. The picture told the story! Nourished by the sudden breeze, a spark of fire in a tump of half burned grass had freshened, had caught a train of dead leaves, run to the cedar foot, and leapt joyously up the mantle of stringy bark that still clung to the tree. The dead thing was much alive now!

Showers of sparks fell every way, as the breeze freshened and eddied about the hill-side. But mostly they blew away from the cabin. Cairns emptied his water pail over the dry stuff round the splitting pile, and snatched and poured half a dozen fills from the springhole. Then he grabbed his axe to tackle the tree—only to drop it as quickly—that way were madness, to lay low a hundred feet of fire athwart all the parched debris of the undergrowth. Better to pray that it might stand! He seized a couple of sacks, plunged them into the water, and ran past the cedar. A mat of dead leaves and weeds and fallen twigs and branches covered much of the ground, and smoke was rising and brisk young fires beginning in twenty places. He ran from one to another, beating at them with the dripping sacks. And many died; but they outran him in the end. A hundred yards away was a growth of young firs, a quarter-acre of them, their tops green and dense against the sun, their heart a shaded gloom of dead, resinous branches interwoven, and beneath all a thick carpet of brown needles, soft and warm and fragrant. A spark fell on the outer edge of the carpet, and it blazed like gunpowder. In a few seconds the whole windward edge of the fir-grove was a roaring whirl of smoke and flame.

Cairns scanned the clouds and the drift of the wind, and sighed relief. Control was hopeless now, but the enemy at least was going and not coming. Beyond the fir-grove, along the bottom land, was a rugged wilderness of small bush—birch and alder and red willow and their kind—

matted about the roots of vast grey columns, the dead trunks of the cedar forest that had died when another fire swept through it ten years earlier. Many of these giants were upturned, and the interlaced mat of their roots held great walls of pebbles and clay to the face of the sun, with slimy water half filling the holes they were torn from. A month of Spring sunshine had dried all of the Fall debris to crispness, and the young leaves on the brushes were still too scant for shade or succulence. Only along the actual river bottom, where the cool moisture of its dense jungle had stood off the fire before, would it serve the same turn again.

Eastward raced the thunderous torrent of flame, broadening out in a few minutes across the whole flat, and leaping a little lip in the ground to a lower level, where the bench on the left receded again, and left a broad hollow among the hills. Cairns climbed the bench, where the soil was too barren to fire, and looked down into the hollow. It roared and raged like a crater, with mighty volumes of brown smoke, as well as black, rolling up—the distinctive brown smoke that tells so surely in a forest fire of furnace heat below. Crash after crash marked the falling of grey giants, though many of them stood through this second onslaught even as they had survived the first, coming out but a little blacker, more naked, more torso-like than ever. Through the hollow swept the fire; and beyond it, where the valley curved southward and the thickets on the bench grew denser, it petered out in the bottom, upon a band of green timber lining a tribulet to the Crawl, and ran up toward the eastward hills instead. Half the heavens were blotted by the smoke screen; yet it well may be, that no eye but Cairns' own saw it, for he was four miles above the nearest in-dweller of the valley just then, and for a hundred miles to the north and east, whither the cloud drifted, there is naught but a trapper's trail.

The breeze flickered a little in the branches of the spring-hole clump,

and grew still. Cairns went around for hours with a wet sack, beating out all remnants of fire within range of his buildings, till there seemed little danger anyway now, and after supper he did chores and turned in.

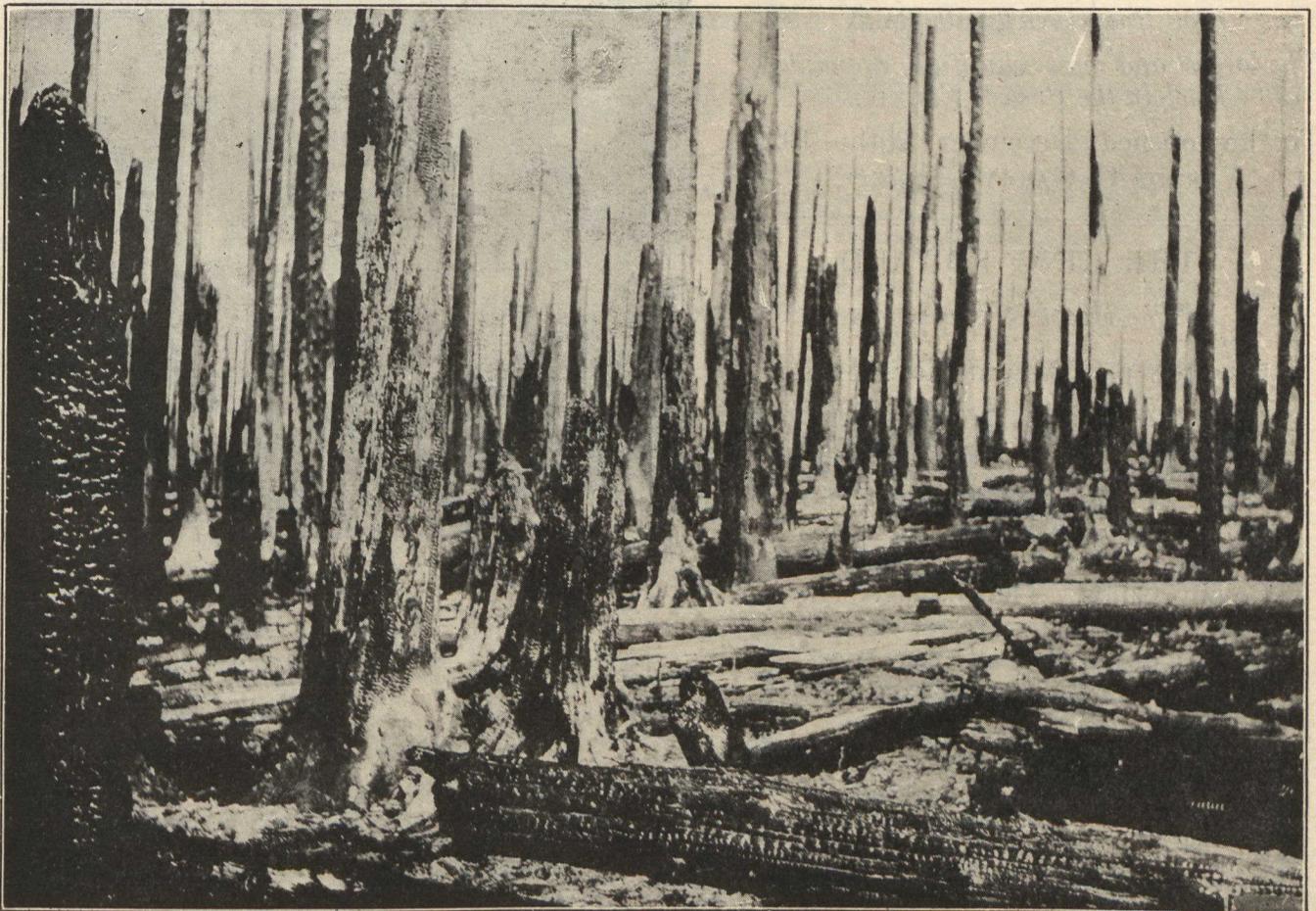
It was about ten o'clock that he awoke with a slight pungence in his nostrils that was so familiar he gave it at first no care at all. But it continued, and presently he raised his head and listened. There *was* a crackling! His boots were all he stayed for.

This time it was a cedar at the back of his cabin that was spurting crimson—a great tree so near that its fall would threaten his roof. But it wasn't a great fire—just two or three toy flamelets here and there at the forks of the dead branches, with a wisp of smoke, hardly visible in the pallid light, from the ground at the butt. The tree stood in the entrance to a small draw in the bench just behind the cabin. More smoke was drifting over the right hand shoulder of this gully.

He ran up the edge of it. Yes! The breeze had turned at nightfall, had brought the fire again right along the back side of the bench, eating up the litter and small stuff that was thicker on that face of it, and now it was seeking to creep down upon him through the draw, menacing fearfully all that he had. Some sparks blown ahead had caught the scanty bark and the dry rot round the big tree. This was his first job. For the burning bark he cared little—that indeed had nearly burned out, so little there was of it, already. It was the smoke from the bottom hole that scared him, for the fire was eating in there, between the buttressing roots, to the tindery heart of the tree; and once it fairly started up that hollow hole, the whole trunk would presently descend, a hundred and fifty feet of roaring furnace—anywhere! He soused, and dug, and soused again, and rammed wet burlap into the hollow, and that danger was past. Now for the gully!

With filled pails and sacks a-plenty he stumbled up the bench in the darkness, and over the edge. The fire was only a creeping thing, eating its way slowly through the ground debris, with here and there a burst of flame as it passed a dry bush or a pile of twigs. If the ghost of a wind would stay just so—at least no more! Down the steep face of the hill he went, beating and pouring—then back over the edge to refill, and once again to the fight. Back and forth, up and down, along the battle front he travelled, hour after hour in glimmer and darkness, pouring, soaking, beating—his heart in his mouth at every gust of air, a mutter of gratitude as it died down again. He was a ragged figure enough, scorched and scratched and blackened and very weary, when the dawn crept upon the mountains; but a glad man that hour was Cairns, for over all the hill-side not a wisp of smoke floated any more.

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# Who Shall Plant and Care for Street-Trees?

Municipal Control Essential if Patchy and Expensive Results are to be Avoided

By William Solataroff

**I**N every town and city of the country where trees are most abundant and where they are most likely to thrive, at one time or other there arises the problem of taking care of those trees and of setting out new ones. There comes a time when a certain species of tree is attacked by an insect, when the trees along a certain street need pruning, when trees are to be guarded from horse-bites and passing vehicles; or when it is desirable to plant a newly opened street.

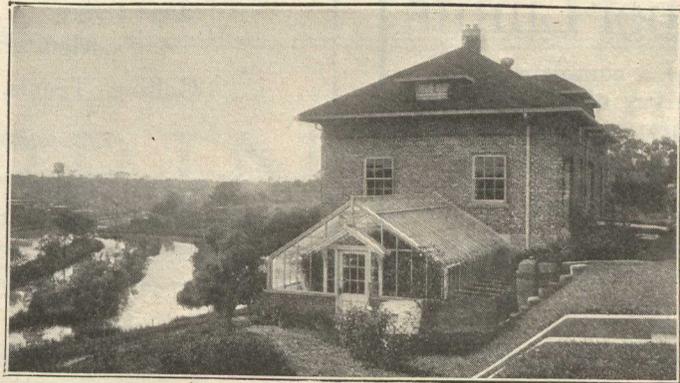
There are two ways by which the work of planting and caring for street-trees can be accomplished. The work must be done either by individual land owners or public officials. The prevailing policy of most of our cities has been to leave this task to the individuals who own the property on a certain street. The results thus obtained have been very unsatisfactory. It will be an easy matter for those at all concerned with municipal improvements to picture to themselves a street or a number of streets in any city where the plan of the individual control of street-trees exists.

What picture do these streets present? There are long stretches that are not planted at all. The trees that have been set out bear evidence of the diversity of taste of the plants. There are half a dozen or more species of trees on the same street, undesirable mixed with desirable, of all shapes and sizes, set either too closely or too far apart. In some cases the trees are not trimmed at all and the limbs are so low as to touch the heads of pedestrians; in others they are pruned too high. The trees have been left unprotected by guards, many of them have been bitten by horses, and there is evidence that they have been injured by destructive pests. The writer has had the opportunity of studying the street trees of a great many towns and cities in different parts of the country and the conditions described above are universal.

Especially in the control of insects which infest certain species of trees from time to time the system, or rather the lack of system, of the individual care of street-trees utterly fails. The citizen is entirely powerless to accomplish anything. He may plant an undesirable species of

tree if the task is left to him, but in insect fighting he will do even less. His efforts will come to naught if his neighbor allows the pest to remain on *his trees*. In the extermination of insects in a city it is absolutely

necessary that all the infested trees be treated in order to obtain effective results. It is impossible to have concerted action on the part of thousands of people of a community in the treatment of infested trees at the same



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time. Insect fighting requires persistence and knowledge of what to do at the proper time to obtain results. There is a period in the life history of most of our tree pests when it may be most easily destroyed. This stage is not always at the time when the



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most injury is apparent, or when the average citizen wakes up to the necessity of doing something. The life history of the pests must be known in order that treatment may be given at the right time. Besides, to spray trees of considerable size requires an apparatus which the average citizen cannot be expected to have.

The injury to trees by borers is a case in point. The foliage does not

show the effect of the damage nor do the limbs begin to die until three or four years after the caterpillars of the borers do their fatal work. Then the people wonder why the trees are dying. Hundreds of sugar maples died in the northern section of the State of New Jersey during the years of 1905 and 1906 as a result of the ravages of the borers a few years before that time. Attention to them at the time the insects were active would have saved the trees.

We cannot blame the individual for unsatisfactory results. We are seeking in the planting of shade-trees that which is for the common good of all, and we expect the work to be done by the citizens without instruction, without system, and leave to each one, if it so pleases him, to do his share when and how he desires. It is the system that is wrong, and the remedy can readily suggest itself. Other municipal interests are vested in commissions, committees, or other organized bodies. Experience has shown that in order to obtain the greatest degree of excellence in the planting and care of street-trees, the matter must be entrusted to a similar body, and a shade-tree department should be incorporated in every municipality.

It is only when the planting and care of street-trees is vested in a special department that all the principles essential to secure the most stately and impressive effect of highway planting can be applied.



### Bureau of

## Canadian Information

THE Canadian Pacific Railway through its Bureau of Canadian Information, will furnish you with the latest reliable information on every phase of industrial and agricultural development in Canada. In

the Reference Libraries maintained at Montreal, Chicago and New York, are complete data on natural resources, climate, labor, transportation, business openings, etc., in Canada. Additional data is constantly being added.

No charge or obligation attaches to this service. Business organizations are invited to make use of it.

### Canadian Pacific Railway

Department of Colonization and Development

165 E. ONTARIO ST., 335 WINDSOR STATION, C. P. R. BUILDING,  
CHICAGO MONTREAL Madison Ave., at  
44th St., New York.

# What's in the Way of a Wood Fuel Supply?

Editor's note: Recently a well known company forester in Quebec was asked by us for his ideas on a practical scheme for utilizing the enormous quantities of hardwoods to ease Canada's bills for anthracite coal. His reply follows:

**M**OST of the large cities like Quebec, Montreal, and I suppose your Ontario cities as well, have practically very little firewood available within hauling distance; the wood would all have to be railed in, so far as this Province is concerned. Many of the towns are already receiving their wood from distances as great as 10 or 15 miles. Last winter, when there was much unemployment here, the Municipality tried to buy a tract of land on which the unemployed could cut hardwood, and there was only one 100 acre lot which had enough good firewood on it to make it worth while. Crown hardwood forests seldom lie within hauling distance to a large city, but there are many acres in Quebec which are near enough to the railroad so that the wood could be economically delivered by cars. The freight rate on hardwood is almost prohibitive, the wood running about 5300 to 5600 pounds to the cord.

Operating companies are very loth to undertake contracts for the delivery of firewood. Then, too, we must be very sure that large quantities of firewood are needed, and that coal will not come in and leave the wood on the hands of those who have agreed to cut it. In New England, during the last fuel famine, thousands of cords of wood were cut and stacked along the railway lines and never used, and can be seen rotting at the present time.

You might also call attention to the fact that wood cut now will be green and practically unusable until next year, as green wood burns very poorly and people are very unwilling to use it.

The only feasible plan that I know of would be to send men out through the rural districts as near the villages and cities as possible, and make contracts with farmers owning hard-

wood lots. These men have very little work in the winter, and using their time and horses, would be able to deliver the wood much cheaper than anyone else. As soon as the wood was hauled to the railroad, it would have to be paid for, and could then be left alongside the track to season for next winter, or could be shipped to the cities and stored. Large areas of storage space would naturally be necessary.

No plan is feasible for an immediate supply, very few people having any stocks of dried hardwood for sale.

The matter of municipal forests for a future supply is a most excellent one, and should be pushed with all possible encouragement and speed. We are busily at work on that here, and I hope before spring to have the municipal forest started.

## PRINTING

We wish to announce that we can supply on short notice and to any part of Canada the following:—

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**ENVELOPES**  
**STATEMENT FORMS**  
**BILL HEADS**  
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**TAGS**  
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**RECEIPTS**  
**CARBON PAPER**  
**TYPEWRITER RIBBONS**

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# Fighting Forest Fires from the Air

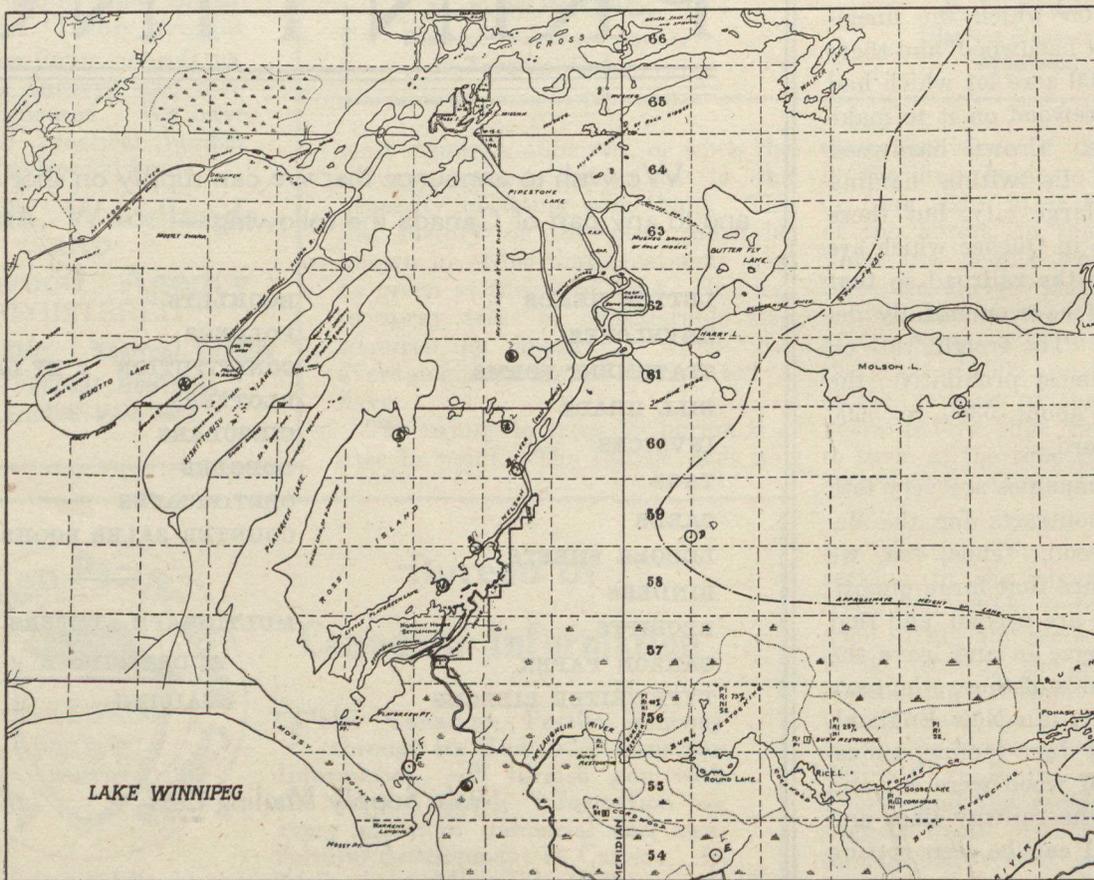
Eleven Incipient Conflagrations Started by Lightning, Speedily Controlled  
by Aeroplane Patrol

By Major W. Arthur Steel, M.C., the Royal Canadian Corps of Signals.

**E**VEN THE CASUAL newspaper reader of today cannot have failed to note the occasional references made to the use of the aeroplane in assisting the fire ranger in his strenuous efforts to save our forests, but like many others, he has probably passed it off with the remark "Yes, they should be very useful for that work." Few people have taken time to study this question, and fewer still have had an opportunity of personally observing such work, since forest fire fighting must, of necessity, be carried on far from the beaten track of commerce, or even the path of the Summer tourist.

It is not surprising then that comparatively little is known about this new departure in the methods employed

to be covered in this country, the area has been divided into three patrols, and sub-air stations established; one on Forestry Island, Norway House; and the other at The Pas. Seaplanes are stationed at each of these sub-stations for the purpose of patrolling a given area, the forests in the southern part of the lake being handled directly from the base at Victoria Beach. It might be advisable to describe briefly the way in which the aeroplane is used in this work. Weather permitting, daily flights are made from the various bases over the area to be patrolled. A fire ranger usually accompanies the plane on these flights to act as observer, and to make notes of the conditions in the area and of the progress of any fires which may be observed. In



by the Dominion Forestry Department. The title of this article might lead one to believe that it was going to be a long winded discussion of the many technical questions involved, but such is not the case. On the contrary, the writer merely intends giving a very short account of some actual happenings which he was fortunate enough to witness, first hand, while on a trip to Norway House, Northern Manitoba.

The Manitoba Forestry Department is assisted in its work by a fleet of seaplanes, operated by the Canadian Air Board, from a base at Victoria Beach, near the southern end of Lake Winnipeg. On account of the great distance

the case of an old fire, he can decide whether additional men are required, or whether the fighters already at work can be withdrawn. When new fires are discovered, he can obtain the exact location, the extent of the fire and the number of men required to fight it, and the quickest and easiest route to the fire. Where long distances have to be covered, or where a fire is so situated that it is difficult to reach by canoe or motor-boat, the plane can be used to transport the men and equipment. There are so many lakes in this district that it is possible to land within easy travelling distance of almost any fire, no matter where

(Continued on page 1222)

# A YEAR OF REAL PROGRESS

1922 has been a year of sound progress in Canadian Aviation. Many firms and individuals have gained their first actual experience of commercial flying, and have turned from sceptics to believers, or from knockers to boosters.

Added experience in development of machines and improvement of operating methods has increased the safety and reliability of properly operated aircraft. Great strides have been made in Aerial Photography, wireless, sketching, surveying and other branches of commercial aviation. More work done per flying hour means that it now "cost less per mile."

An outstanding feature of the year's operation has been the increased volume of work done by specialist aircraft operators. Business and financial conditions have demanded rigid economy—and because it costs "less per mile" many large Corporations and Government Departments have made large use of specialist service. Their satisfaction is proven by repeat orders.

The secret of successful operation lies in thorough preparation. Requirements of machines, personnel, and supplies must be known and planned for months in advance, and a ground organization developed to ensure using every machine to 100% of capacity.

## Plans for 1923 Should be Made Now

Laurentide Air Service Limited during 1922 flew more hours and miles than any other Company in Canada, and had a 100% record of safety.

Our experience can be of value to you and is at your disposal. An inquiry involves no obligation.



## Laurentide Air Service, Limited

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MONTREAL

Quebec Base: Lac à La Tortue,  
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Ontario Base: Remi Lake, near  
Moonbeam, Ont.

Associated with

Fairchild Aerial Surveys Co., (of Canada) Limited

*(Continued from page 1220)*

located. That this system is practicable, and that results can be, and are, obtained in this way is demonstrated by the following description of the way in which fires were handled on at least one occasion this summer.

#### Lightning Starts Fires.

During the latter part of July the weather in the Norway House district was very sultry, culminating in heavy thunderstorms on Saturday, July 29th. In the morning there was a good deal of lightning and thunder, but very little rain fell. About 2 p.m., the writer was standing on the western side of the Island watching a storm rolling up across Ross Island towards little Playgreen Lake, when lightning was observed to strike at two points near the shore, and immediately afterwards white smoke began to curl up through the trees. Mr. Fisher, the Chief Forest Ranger, was notified, and he, knowing the danger under such conditions, started out at once with the pilot to size up the situation. If reference is made to the keyed map accompanying this article, it will be much easier for developments to be followed. The first two fires noticed were at the points marked "A" and "B" on the Nelson River, and although comparatively small fires, these were located in heavy timber. While in the air, three other fires were observed in the country to the East; one on the shore of Molson Lake ("C"), another in the open bush about 25 miles northeast of Forestry Island, ("D") and a fifth, ("E"), just South of Round Lake on the Gunisao River. The plane flew over each one of these fires in succession, and Mr. Fisher was able to determine which were the most serious, how many men would be required for each one, and how best to reach them. Two hours and a half after the plane left, all this information had been secured, and the Chief Ranger was back at Forestry Island assembling his fire fighters with their equipment and supplies. Fires "A", "B" and "C" were the most serious and, of course, were given first consideration, and a motor launch landed parties at the first two places before six o'clock that evening. The fire on Molson's Lake was handled by a crew of four men, taken in late Saturday night by plane, the machine returning to the Island again early Sunday morning. Fires "D" and "E" were not so dangerous and, as they were not easily reached by plane, Mr. Fisher himself with one other fire ranger left early Sunday morning by canoe to investigate these two locations. It might be interesting at this point to note the time that would have been required to cover these fires by canoe in the ordinary way. Fires "A" and "B" would have required five hours by canoe; fire "C" two and a half days; fires "D" and "E" actually required sixty hours, but even at that the trip was a very strenuous one.

Mr. Fisher was of the opinion that all these fires had been set by lightning, due to the fact that very little rain had accompanied the storms. The weather cleared somewhat on Sunday morning, but during the afternoon, thunderstorms were again in evidence and at half past three a large fire was observed almost due South of the station. The aeroplane was immediately put into commission, and the pilot with three men, tools and rations, left at 4.15 p.m. to investigate the fire. It was located at a point about six miles north of Warren's Landing and was found to have already spread over an area of about ten acres. The plane dropped the men at the fire and immediately proceeded to Warren's Landing for further assistance. Arrangements were made for a crew to be sent up by canoe with full equipment and rations but, as a temporary measure, four additional

men were taken in by plane and landed at the fire by six o'clock. About nine o'clock on Sunday night, a short observation flight was made, and it was found that the fires to which men had already been sent were very much subdued, the first two being apparently out, and the third one well under control. The one near Warren's Landing was still serious.

#### Viewing Thunderstorm From Air.

On Tuesday, August 1st, the writer had to go to Cross Lake on business, and while thunderstorms were still quite prevalent, it seemed to clear up towards noon. Mr. Fisher and the writer, with Captain Moore, the pilot, left about 12.30 p.m. to fly to the Mission at Cross Lake. Shortly after leaving Norway House we ran into heavy storms and were frequently flying through rain clouds. The writer was in the bow, acting as observer, and as it was the first time that he had had an opportunity to observe a thunderstorm from the air, a very close watch was kept with the idea of ascertaining whether any phenomena could be observed in the cloud just previous to a discharge. A very heavy bolt of lightning was observed to strike in a patch of heavy timber close to a small lake and not more than half a mile distant from the plane. Sticks and underbrush flew into the air and immediately white smoke began to curl up from the green timber. About five miles further on, the same thing was observed again, but this time a little farther away from the plane. These two fires have been marked as Nos. 2 and 3. A note was made at this time of the exact locations so that fire fighters could be sent in at the first opportunity. So far as is known, this is the first case on record when an observer in an aeroplane has been able to witness, at close range, the start of a fire due to a discharge of electricity from cloud to earth.

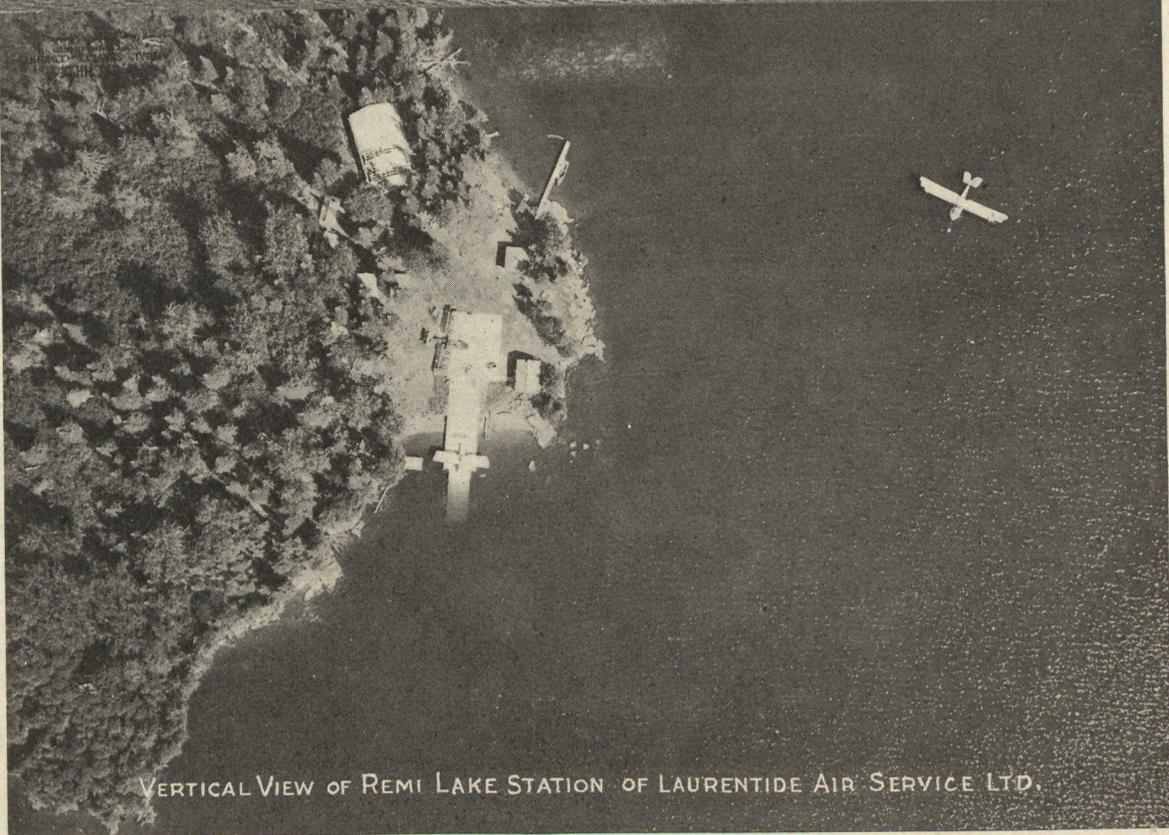
Visibility up to this time had been very poor, but shortly afterwards we ran into clearer weather, and a very large fire was seen on our left at the point marked "4" on the map. This was a very heavy spruce and tamarack swamp situated between Kiskittogisu and Kiskito Lakes; this fire had apparently been burning for some time as it extended over quite a considerable front. The reason why this fire had not been observed previously must have been due to its distance from Norway House, and to the fact of the poor visibility and low lying clouds. As soon as the plane had landed at Cross Lake, Mr. Fisher engaged a crew of ten men from the Indian Treaty Camp and sent them down along the West branch of the Nelson River in charge of a man from the Hudson Bay Company who was acquainted with the country in that vicinity. The party left at once by canoe and arrived at their destination early next morning. The plane returned late that evening to Norway House, and, on the way back, another fire was discovered, evidently due to lightning, on an off-shoot from Little Playgreen Lake, but in a very valuable belt of spruce and jack pine (see No. 5).

On account of the weather, it was impossible for us to land and investigate any of these fires as we were flying through almost continuous storms, and the wind was driving the rain with such force that landing would have been dangerous. Fire No. 1, which had been observed shortly after we left Norway House at noon, was investigated on the return trip, but proved to be of no importance as it was situated in a very wet muskeg. The aeroplane with three fire fighters and a fire ranger left at six o'clock the following morning to investigate fires No. 2, 3 and 5, and to observe the progress of No. 4. The

*(Continued on page 1224)*



OBLIQUE VIEW OF REMI LAKE STATION OF LAURENTIDE AIR SERVICE LTD.



VERTICAL VIEW OF REMI LAKE STATION OF LAURENTIDE AIR SERVICE LTD.

These views show how clearly various kinds of trees can be distinguished from aerial pictures and how the number of trees in any given tract can be actually counted. Areas of different types of timber, burns, blowdowns, swamps, etc., can be accurately measured. As the whole area is covered results are more accurate.

Maps of properties can be made in far less time than by the old methods, and the cost is lower.

*Samples, estimates of cost, and full information given by*

## **FAIRCHILD AERIAL SURVEYS CO. (of Canada) LIMITED**

**Associated with the Laurentide Air Service  
Grand'Mère, Québec.**

(Continued from page 1222)

men were left on Playgreen Lake to look after fire No. 5, while the plane investigated the fires which had been started by lightning the previous day. These two fires (Nos. 2 and 3), were out, evidently due to the heavy rains of the previous night, and No. 5 was quite easily handled by the men landed there from the plane. Fire No. 4 was still burning, but the crew sent in from Cross Lake were rapidly getting it under control.

#### Discovered Eleven Fires.

It will thus be seen that between Saturday at 2 p.m. and the following Wednesday noon, a total of eleven fires, all apparently started by lightning, had been discovered and successfully handled, and Mr. Fisher was able to report that evening, to the head office in Winnipeg, that all fires in the district were under control, seven having been definitely put out and four still burning but under control.

On Wednesday evening the writer accompanied the plane on a trip to Warren's Landing to observe the progress of the fire near the spot. During this flight another fire was located on a branch of the McLaughlin River, due East of the one already reported. This fire appeared to be making considerable headway and was located in some very heavy timber. We alighted at Warren's Landing and the ranger assembled a crew of men with complete equipment and supplies from the Hudson Bay Company and went himself to investigate this last fire. On our return trip, we landed at fire "F" in order to ascertain whether the men working there required any further assistance. We informed the ranger in charge that there appeared to be several spots where the fire was still dangerous and thought that he had

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Were EDDY'S MATCHES to cost you more than ordinary and inferior lights it would scarcely be a matter of surprise.

Usually where there is a marked difference in quality, prices do vary very considerably.

But, remarkable as it may appear, EDDY'S while WORTH FAR MORE, COST NO MORE than the less safe, less sure and less dependable matches.

The most of the best at no greater cost—that's EDDY'S and they're CAN-ADIAN CLEAN THROUGH.

Always everywhere in Canada ask  
for Eddy's Matches.

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Hull, Canada

# RADIO

One frequently hears that time-worn adage—"The best is the cheapest in the long run." But what is the best?—What is the cheapest?—On what grounds does one form an opinion?—Is it the most expensive?—not necessarily. Is it the largest, the most imposing?—again, not necessarily, for one frequently finds that these features have been embodied in an article to increase its selling points. Then how is one to form an opinion?—what should one primarily look for?—the experience and reputation of the producer.

## Marconi Services

Trans-Atlantic and Shore to Ship Telegraphs, Marine, Direction-Finding, Aerial, Railroad, Forestry, Mining, Broadcasting, Telephone and Telegraph Installations—sold outright or on a maintenance basis. Amateur apparatus of every description.

Canadian Craftsmanship backed by Twenty Years' Radio Engineering Experience and Two Hundred-odd Exclusive Patents, are behind Each and Every Marconi Product.

THE  
**Marconi**  
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**Canada**  
LIMITED

**A New Forest Fire Pump**

A new forest fire pump to deliver a greater volume of water at a higher pressure, will shortly be put on the market by the Canadian Fairbanks-Morse Company, Limited.

There are several improvements that will meet with the approval of fire rangers and other users.

better fly over the area in order to satisfy himself that he had the situation well in hand. This was accordingly done and he circled the fire several times until he was satisfied that all real danger was past. The plane then returned to its base at Forestry Island.

The recent fires in Northern Ontario have amply demonstrated the fact that an army of men, even if they were assisted by a fleet of aeroplanes and any quantity of fire-fighting apparatus, would be useless when once a forest fire has had time to get well under way. Any one of the fires described in this little article might have developed into just such a tornado of destruction as swept through the Temiskaming District, had it not been for the fact that aeroplanes were available, not only for reconnaissance work, but also to carry the fire fighters directly to the danger spots.

These instances have been related, not because they were in any way spectacular or different from the routine experiences of fire rangers in other parts of the country, but rather because they constitute a concrete example of what can be done under the present system and with the equipment now available. The only outstanding feature in the case is the fact that 12 fires were successfully handled within a period of six days by a very small staff of fire fighters, due solely to the fact that they were able to discover the fires before they had made any very considerable headway. It must be evident to any thinking person that the only successful way of fighting fires in our forests is to catch them at the time when they are in the incipient stages, so that two or three men will have no difficulty in extinguishing the blaze.

The following copy of a Forestry Department poster, which was picked up in the woods during this trip, expresses in a very concise form this fundamental principle of the Forest Ranger's work:—

**HONOUR!**

There is more honour in preventing a forest fire than in extinguishing one.

**FIGHTING** a fire may be more spectacular and may gain public praise;

**PREVENTING** a fire is usually done quietly and alone, but to the individual it brings the enduring satisfaction of

**DUTY WELL DONE**

and, after all, is not that what counts?

**THINK IT OVER.**



**A SEASONABLE GIFT!**

Give your pal a year's subscription to **ROD AND GUN IN CANADA** for Christmas.

He will enjoy the magazine, and twelve times during 1923 it will bring him pleasant remembrance of the donor, and pleasant memories of days spent in the great out of doors.

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The price is \$2.00. If you are not already a subscriber, let us have your subscription and that of your friend, or young son. **A Christmas card bearing your name as donor will be sent him.** Fill out and detach the form below and mail it to us with your remittance.

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'VIKING' MARK IV, Six passengers and baggage or 1,360 lbs.  
 Freight RANGE: 340 miles, SPAN: 50ft. HEIGHT: 15ft. 1 in.  
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The 'Viking' was the winner of the First Prize of £10,000 for the Amphibian Class of Aircraft entered for the British Air Ministry Competition, Sept., 1920.

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*Vickers "Viking" Amphibian on the Thames.*

## Successful Flying Day

A Splendid Demonstration of Aviation in rough Weather Given at Lachine

By George A. Mackie

**T**HE FLYING DAY held at Lachine, P.Q., recently, under the auspices of the Aerial League of the British Empire proved an entire success, although the weather conditions were not in any way favorable, a high wind and rough water causing difficulties which, however, in no way dampened the ardour of the flying enthusiasts present but served rather to test the skill of the pilots engaged and demonstrate the feasibility of operating aircraft under adverse conditions. About seventy passengers were carried on demonstration flights and all expressed themselves as being highly delighted with the whole show, the ladies particularly, of whom there were several taken on their first flight, proving enthusiastic converts to Aviation.

The machines present were the Vickers Viking and the Loening from Laurentide Air Service, Ltd., one H.S.2.L. from the Air Board and two Curtis land machines supplied by Canadian Aerial Services Ltd. Unfortunately pressure of work East of Quebec prevented the Laurentide's H.S.2.L., which was to have been present, from arriving in time, but as the Air Board sent an H.S. to carry their representatives the public was shown this type after all. Mr. J. A. Wilson, Secretary

of the Air Board, together with Major Breadner, Controller of Civil Aviation, and Captain McKeown, as pilot, flew from Ottawa in 1 hr. 15 mins., arriving shortly after lunch and returning again, after having spoken to many of those of the guests present, in time for supper in Ottawa.

Hon. C. C. Ballantyne was the first passenger carried. This was his first flight and he expressed himself as delighted with the experience, explaining that it had been more comfortable than any motor trip he had ever taken and that the absence of any discomfort or inconvenience had been most pleasing. He was accompanied by Master Ballantyne. Among the other guests who flew were Col. Gerald Birks, Mr. J. Stanley Cook, Secretary of the Montreal Board of Trade, Lady Brunton, Mayor Ranger of Lachine, Mayor Gordon of St. Lambert, and representatives of the leading Montreal newspapers.

An interesting and interested passenger was Mr. Perry, aged 86, who was accompanied by his wife and daughter. Mr. Perry expressed himself as delighted with the experience, and said he would not have missed it for anything. He was flying in the Viking, and because of the very deep cockpit stood up in order to get a better view of things. Many believe this is not possible, but this little incident should disabuse the public mind of the idea that the modern commercial plane requires passengers to be strapped in or prevents their moving about. The youngest passenger carried was a boy of about 8 or 10, who enjoyed the trip pretty nearly as much as did Mr. Perry.

## AN AERIAL PHOTO OF THE LAURENTIDE COMPANY'S PLANT AT GRAND'MERE, QUE.

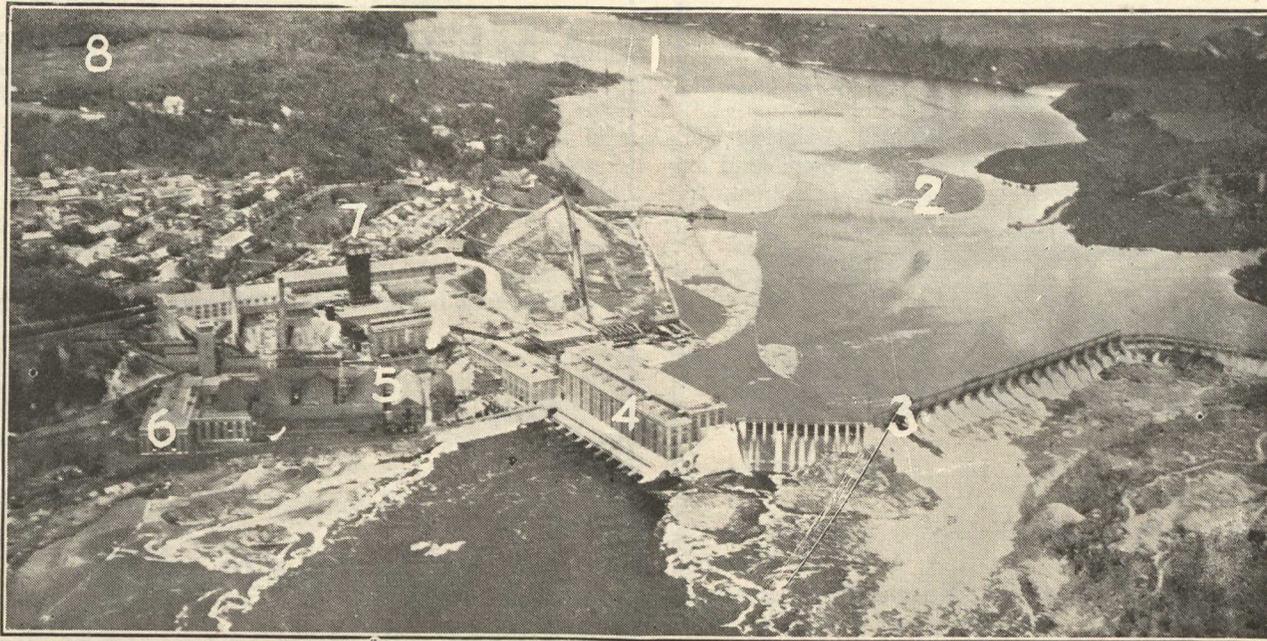


Plate reproduced by courtesy of the The Financial Post. Photo by Fairchild Aerial Surveys Co. (of Canada) Limited.

Key to Photo.—No. 1. The St. Maurice River stretching 170 miles to the north; 2. Pulpwood floating down; 3. Dam and falls providing power with 82 foot head; 4. Power house (162,000 h. p.); 5. Pulp mill adjoining; 6. Paper mill; 7. Townsite, built in the wilds; 8. Golf course, one of many means of entertainment provided.

## The Possibilities of Aerial Photography

**T**HE MAKING of photographs from aircraft is rapidly assuming importance in all sorts of engineering work, and to a less extent in advertising. Photographs of industrial plants, like the above, give a far better idea of the layout and appearance of a mill than any formal perspective drawing can possibly do. Vertical photographs have all the advantages of line maps and blueprints and give infinitely more information, and are much more intelligible to persons unaccustomed to reading maps and drawings. Nothing escapes the eye of the camera, and a photograph can be studied in the office at leisure, and all the information it contains extracted. Insurance companies have found that they can see forbidden piles of rubbish, old boxes, etc., in backyards, which have escaped their inspectors, when the premises are photographed from the air. Recently a power company wanted to locate a right-of-way for a transmission line. They had the proposed routes photographed from the air, the engineers picked out the one they wanted, the property lines showed on the photos, and the owners were looked up in the county records. Then before any engineering parties had been on the ground, the owners were looked up and the properties purchased, before anyone knew that any power line was contemplated.

Aerial photos of the forest are equally valuable. With the old method of timber cruising, strips are run through the forest at intervals of one-half mile to a mile, and all the trees estimated on a strip 66 feet wide. The width of this strip is estimated by eye, and wherever its centre line crosses a lake, swamp or burn, a note is made at the beginning and end of such feature, and also at the beginning and end of each timber type. The boundaries of types and lakes, swamps, burns, etc., are sketched in

from these notes giving the areas. From the strips the average amount of timber per acre is calculated, and applied to the various types. In this way, the usual percentage of the total area estimated is two-and-one-half. Sources of error are the eye estimate of the width of the strip and the areas of the various types, burns, lakes, swamps, etc., which are sketched in. Then, too, the small amount of country actually covered. With aerial photos the actual area of each type is measured with a reasonable degree of accuracy, the boundaries of types are more accurately determined than is possible on the ground, areas burnt, windthrown, killed by insects, swamps, etc., can be accurately measured. The amount of timber per acre can be estimated from the pictures by comparing them with areas already studied in detail, and if more accurate estimates are required, a small amount of ground work can be done to check up. ONE HUNDRED per cent of the area is covered, and the time is only a small fraction of that required to do ground work. The methods are out of the experimental stage, and have been successful in important actual work.

A Canadian Company, the Fairchild Aerial Surveys Company (of Canada) Limited, has been formed to carry on this work, the flying being done by the Laurentide Air Service, Limited, which has made such a good record during the last season. The directors of the Company are Mr. Thomas Hall of the Laurentide Air Service, Ltd., and Montreal Boat Builders, Ltd., Montreal, Mr. F. E. Mutton of the International Business Machines Co. Ltd., Toronto, Mr. S. M. Fairchild of the Fairchild Aerial Camera Corporation, New York, and Ellwood Wilson. The offices of the Company are at Grand'Mere, Que.

## Air Board Statistics

**T**HE AIR BOARD announces Civil Aviation Certificates and Licenses issued, cancelled, and renewed, under the various classes as shown, for month ending October 31st, 1922, as follows:—

### Private Air Pilots' Certificates.

*Lapsed:*—J. B. Mulvey, Ottawa.

*Renewed:*—L. S. Breadner, G. O. Johnson, Ottawa.

### Commercial Air Pilots' Certificates.

*Issued:*—B. W. Broatch, Lac la Tortue, P.Q.

*Lapsed:*—W. M. Emery, Ottawa.

*Renewed:*—Earl Leslie McLeod, Atchelitz, B. C.; J. B. Home Hay, Wadena, Sask.; A. A. Leitch, Norwood Grove, Man.; C. St. C. Guild, Musquodoboit Harbour, N.S.; F. W. McCarthy, Toronto; L. S. Breadner, G. O. Johnson, Ottawa; G. E. Brookes, Winnipeg.

*Suspended:*—G. T. Collinson, Winnipeg.

### Certificates of Registration of Aircraft.

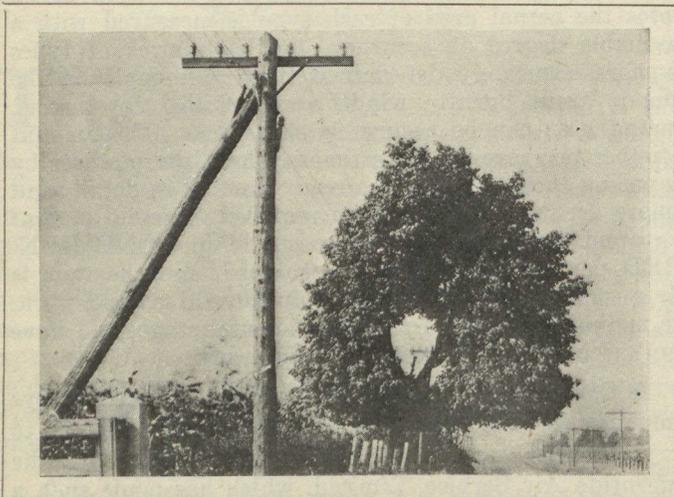
*Issued:*—The Air Board, Ottawa.

*Cancelled:*—Niagara Air Service, Toronto.

### Air Harbour Licenses.

*Issued:*—Lots 28 and 29, 3rd Concession, County of Brant, Township of Brantford, Ont.

## Wiring Through a Tree



*Photo, Gilliams Service, New York.*

Pictured above, is a tree on a country road a few miles out of Bloomington, Ill., through which eight telephone wires are strung. Linemen setting up a system were encountered by this tree which the owner refused to allow to be cut down or injured in any way. Finally it was agreed that a hole could be cut through the tree top without in any way injuring the trunk and affecting its vitality. Now this extraordinary sight greets motorists who use the highway at this point.

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## British Columbia's Place in the Sun

By P. Z. Caverhill, Chief Forester  
in "Root and Branch"

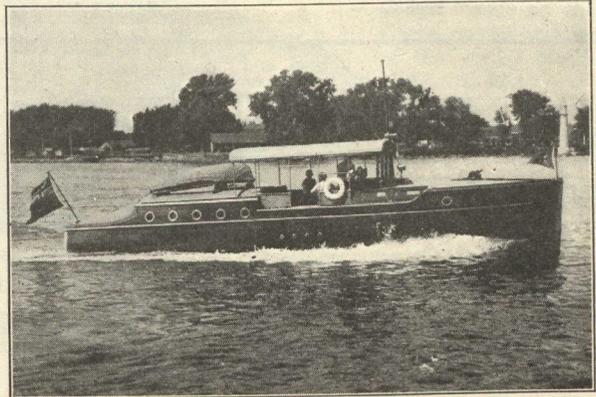
NATURE was wonderfully kind to British Columbia in her allotment of mountains; equally remarkable for their scenic beauty, their mineral filled rocks, and forest clad sides; streams and inlets filled with finny food, and a climate where man and forest may flourish and develop in most congenial surroundings together. Only in the question of agricultural areas (less than 7 per cent), were the gifts in any way stinted. The achievement of our destiny largely depends on the use or abuse of the gifts of nature so lavishly bestowed, and forests are the most susceptible to such treatment.

It is in the development of her forest wealth that the destiny of the Province is most clearly indicated. The real forest wealth, however, is not in the standing timber, valuable as it is, but in the growing capacity of soil and climate, which will replenish again and again through all future years our timber supply, if we only recognize the principles governing tree growth and give our forests a chance. Originally, British Columbia had forests covering one hundred million acres, estimated to contain one thousand billion board feet. Two-thirds of this area has been fire swept and the stand reduced to three hundred and fifty billion feet. Heretofore we have been reaping without thought of the future, and our instruments of harvest have been crude and frightfully destructive.

That British Columbia is capable of supporting a vast forest industry in perpetuity, and a large and prosperous population engaged therein, cannot be doubted by anyone who has studied forest possibilities. Sweden for example, is comparable to the interior of British Columbia. Situated 10 degrees farther north, reaching the 70th parallel, the climate is moderated by the influence of the Gulf Stream, which sweeps the coast of Norway only after moderated ocean breezes cross the Kiolen Mountains. The Winter temperature reaches 59 degrees below and lakes remain frozen from four to six months. The forest area is fifty-five million acres and annual growth thirteen hundred and twelve million cubic feet, roughly equivalent to 9-10 billion board feet, and after supplying the needs of a population of six million people, leaves two billion feet for export. British Columbia, with her larger area and her fast growing coast species, can exceed even this with proper handling.

The limit of soil production is the limit of population. The growing of world population, and the demand for more and more products from the soil, will sooner or later compel the putting of every acre of land to the highest possible productive use. Nothing can stay this process—it is as sure as time. If we do not recognize this, the future generations will, and will be called upon to pay for the abuses we have permitted, in the same way that France was called upon to pay millions to prevent floods caused by wanton forest destruction in the Alps, and as the United States are now realizing they must spend millions to build up forest capital, depreciated through over zealous forest exploitation.

There is no doubting the fact that this Province was intended as the natural complement of the vast Prairie section of Canada; that each needs the other—each is incomplete in itself; that British Columbia in developing the resources Nature has supplied, is capable of, and will support millions of people in the best possible condition for human development. This is our destiny. This is the end intended. Our actions will act for, or retard, the progress according to whether they are in harmony or discord with Nature's laws. We cannot stop the progress, but we do through careless use of nature's gifts, cause future generations to pay the penalties for our omissions.



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## Personal Mention

Kenneth M. Clark of the James W. Sewall timber timber cruising force is in Newfoundland on a short job.

J. R. Booth of Ottawa, Canada's lumber king, who is now in his 95th year, has been enjoying his annual holiday. He left Ottawa in his private car for Madawaska where he combined business with pleasure in roaming over his extensive timber limits. Mr. Booth is in splendid health and thoroughly enjoyed his vacation in the woods.

*The Quebec Chronicle*, which was formerly controlled by the late Major General Watson, has been sold, in accordance with the provision of the latter's will. The purchasing interests, which comprise a group in which is said to be Sir Wm. Price, of Price Bros. & Co., are reported to have completed the deal.

James W. Sewall of Old Town, Maine, timber expert, is in Western Pennsylvania on a short cruising trip. Mr. Sewall only recently returned from Western Quebec where his men have completed a detailed cruise and mapping of about one million acres of land for McLachlin Bros. Ltd., of Arnprior, Ontario.

Ellwood Wilson, chief forester of the Laurentide Co., Grand Mere, Que., recently delivered an interesting address before the Rotary Club, Montreal. He attacked the theory that the forest wealth of the Dominion was inexhaustible, and pointed out that supplies for the future were decidedly limited and within a comparatively few years would be gone altogether unless effective steps were taken to conserve these great resources. The advice of Mr. Wilson was to cease mining the forests as though there was no end to them, to crop them regularly at 75-year intervals, so as to permit of new growth, to apply proper afforestation methods for this, and above all to guard the timber lands against fires.

George H. Millen, president of the E. B. Eddy Co., Limited, Hull, Que., celebrated his 84th birthday on October 23rd and was the recipient of hearty congratulations by many friends from various parts of Canada. Upon his arrival at the office of the company Mr. Millen found British and American flags unfurled in his honour from the mastheads over the different mills and factories of the company, and he was surrounded by as many of the staff as could possibly crowd into his office. Mr. Millen was presented with a congratulatory and eulogistic address by S. S. Cashman, one of the senior members of the firm, and a basket containing 84 American Beauty roses, one for each year of his life. In acknowledging the pleasure he felt at the tokens of esteem from his employees, Mr. Millen said that he never felt better in his life than he did at the present time, and reminded them that in December he would celebrate his diamond wedding anniversary with Mrs. Millen, with whom he had yet to have his first quarrel in sixty years of happy married life.

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## Game Birds Increase under Migratory Birds Convention Act

WITH FEW exceptions migratory game fowl have increased to a marked degree in Canada during the past season according to reports received by Commissioner J. B. Harkin, of the Canadian National Parks, from migratory bird officers and wardens all over the Dominion. In the East owing to the heavy rainfall and late breeding season certain species did not hatch with as great success as in previous years, but the Western provinces report increases in practically all species.

A remarkable feature of the census being taken of the increase of bird life under the Migratory Birds Convention Act is the widespread increase in Black ducks. All over the Dominion there appear to be unprecedented numbers of these birds and in some sections of New Brunswick especially they are reported to have appeared in exceptional flocks on the rivers and inland retreats. Cormorants, gulls, terns, cranes, Canada geese, brant and plovers have also shown marked increases while in certain sections Eider duck have returned to breeding grounds heretofore abandoned.

Nova Scotia also reports an increase in its waterfowl although the heavy rains in certain sections caused the loss of many eggs and young. However, in other parts large broods were successfully reared, one duck being noticed with as many as twenty-four ducklings. A similar increase is reported from Prince Edward Island.

In Quebec the Eider ducks did not do as well, in many localities no broods being raised owing to the unseasonable weather. However, all other species of waterfowl hatched successfully.

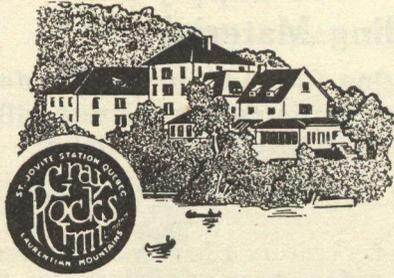
In Ontario as well as in the other Eastern provinces shorebirds are scarce. Black ducks, mallards, Green-winged teals, mergansers, loons and wood ducks have been seen in large numbers.

All through the West migratory birds show an increase, with the waterfowl leading the way. In Manitoba mallards and Black duck are abundant, while in Saskatchewan geese have been seen in large numbers. Alberta's wild fowl is also doing well, while British Columbia is expected to report a good season.

## GEORGIA LOSING ITS BEST LAND

The State geologist of Georgia has been writing about the conditions of deforestation and erosion in his country. He says that the farm land is now "going to sea" in consequence of the land being cleared of wood. Great areas of land that fifty years ago were fertile cotton fields are now huge barren gullies. Thousands of acres, he says, have been made worthless for agricultural purposes. Data has been collected during the last twenty years, and it is stated on the basis of that information that every day the Savannah river is carrying to the sea more than 135 car loads of soil-wash.

There is another consideration. Domestic water supply comes largely from the rains that sink into the ground and are there stored for the use of man. Deforestation and the resulting flow of rain in eroding rivers over the land surface mean a reduction in the storage of water underneath the surface. For this reason also it is bad policy to cut all the wood; and it is good policy to practice reforestation.



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## The Farm Bush Will Supply Fuel and Building Material

Judicious Tree Planting Can Add to the Comfort and Beauty of Home Surroundings—Nature will Accomplish Much if Given a Free Hand.

By the Agricultural Editor of the "Globe" Toronto.

IN the last quarter of a century I have visited several hundred farms in various parts of Ontario for the purpose of inquiring into agricultural conditions. In no part of that inquiry have I taken a keener interest than in matters relating to the farm wood-lot and the beautification of farm surroundings by the planting of windbreaks and roadside trees. On none of the farms visited in 25 years have I seen a clearer demonstration of what may be done to add to the beauty and comfort of home surroundings by judicious tree planting, on none so clear a demonstration of how much can be accomplished in a short time in the way of conservation of a wood-lot merely by keeping the cattle out of that lot.

### A Thirty-Acre Wood-Lot

On the 250-acre farm of R. C. McCullough, in the upper end of the township of Esquesing, 30 acres are still in bush. A lane connecting the cleared land in front of the farm with other fields at the rear, runs through the middle of that bush. Twelve years ago cattle had the run of the timber on both sides of the lane and as a consequence young growth was being clipped off year after year, grass was creeping in, mature trees were becoming thinner and thinner on the ground. In several places the large trees were 100 feet apart; on the average they were probably not closer together than trees in a properly planted apple orchard.

### Effect of Excluding Cattle

Then Mr. McCullough fenced off the portion of the wood-lot on one side of the lane, and from that time on cattle have been excluded therefrom, while still having the free run of the bush on the other side. In the part from which cattle have been shut out there is now a dense growth of young stuff running all the way from last spring's seedlings to saplings 12 feet and more in height. On the other side practically nothing but mature trees are left, with grass occupying the more exposed spaces. That is the result of keeping stock out in one case and allowing a free run in the other.

The intention now is to exclude cattle from the portion in which they have free run today, and if this intention is carried out there will soon be a wood-lot, which, intelligently used, will be sufficient to supply three households with fuel for all time to come and with such building material as may be occasionally required as well, because almost all kinds of our native trees—pine, oak, basswood, maple, beech and even shell-bark hickory—are growing in the McCullough woods.

### Lane and Roadside Trees

There has been planting as well as conservation—in one instance the two combined—on the McCullough homestead. Shade trees protect the farm residence without excluding sunlight from the rooms. Maples line both sides of the lane leading from the roadside entrance, past the house and back to the wood-lot beyond. Other maples line the roadside itself in front, and near the centre a clump of natural growth of pine, marking the site of one of the cemeteries dating back to pioneer times, adds the finishing touch of beauty and protection from winter's blasts and summer's heat.

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### Trees on Ground Once Under Plow

Just a word more as to the rapidity with which growth is made in tress and how much nature herelf will accomplish if given a free hand. Several of the maples lining the roadway and lane are nearly two feet in diameter, and yet Mr. McCullough, who in the present season has done most of the work on a large farm, and done it well, assisted in the planting of those trees. At one side of the wood-lot, following the line of an old fence, are a lot of splendid elms. I tried to span one of these with my arms, but fell several inches short of accomplishing it. "And yet," said Mr. McCullough, "as a lad I plowed the ground in which those elms, the result of natural seeding, are now growing." The pines marking the site of the old-time cemetery are also the result of natural seeding, "this being due," as Mr. McCullough said, "to the fact that seed in the ground was not destroyed by repeated burnings or subsequent cultivation."

### A Beauty Spot Near Oakville

Down near the front of Halton county on the old Waldbrook homestead, another demonstration is afforded in what can be accomplished by planting and conservation. There, too, is a well preserved wood-lot—twelve acres in this case—and along the front, facing the Hamilton highway, is a row of trees, 60 rods in length, that makes one of the finest pictures to be seen on the approach to Oakville from the east.

"Those roadside trees," said James Waldbrook, "were planted at the time when the Province gave a bonus of 15 cents for each one of such trees planted, and authorized municipalities to supplement that bonus with another 15 cents per tree. That legislation gave a great impetus to the beautification of roadsides, and it was a serious mistake when it was withdrawn." As one indication of how tree growth adds to the selling price of land, in some cases, Mr. Waldbrook mentioned a purchase made by one of those Toronto colonists who have given city values to land near Oakville. "The purchaser in this case," Mr. Waldbrook said, "bought a building site at what a few years ago would have been considered a fabulous figure. He paid that price simply because of the beauty which a natural growth of timber gave to the site."

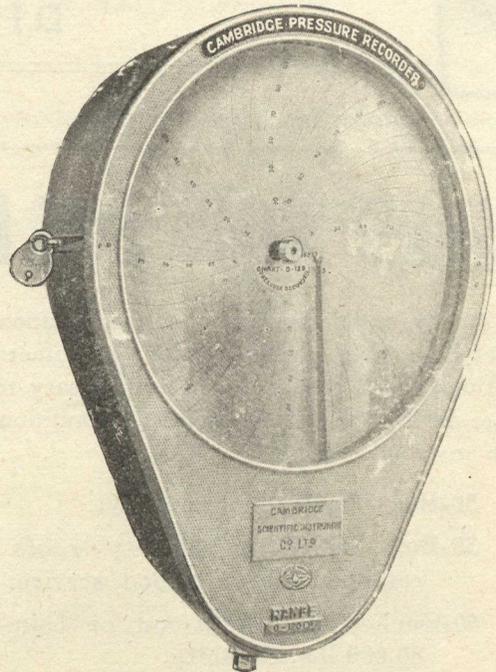
Halton was at one time one of the most richly wooded counties in the Province. "From an elevation south of Georgetown," said Mr. McCullough, "as a boy I looked over a stretch of territory, every hundred acres of which held from 15 to 75 acres of pine, and this gave to the whole the appearance of a solid pine forest." Halton is not only a rich, but a beautiful county still, hills and valleys, winding roads and numerous streams giving forth changing and picturesque views at every turn. The county would be yet more beautiful if Nature were allowed to recover some of the bare ridges, and if on every farm the practical lessons in farm forestry demonstrated on the McCullough and Waldbrook homesteads were wisely applied.

### A HOUSE CUT TO SAVE A TREE.

**I**N ORDER to save the trees surrounding the Seanlan home on Main Street, between Calhoun and Pierce Avenues, it was necessary to divide a house being moved from the old B. F. Bonner home at Main and Calhoun, says the *Houston Post*.

The case went into court before Judge Charles E. Ashe, when the Seanlan estate sought an injunction to prevent damage to the trees because of moving the house. The only means of accomplishing this was to divide the building.

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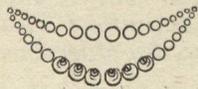
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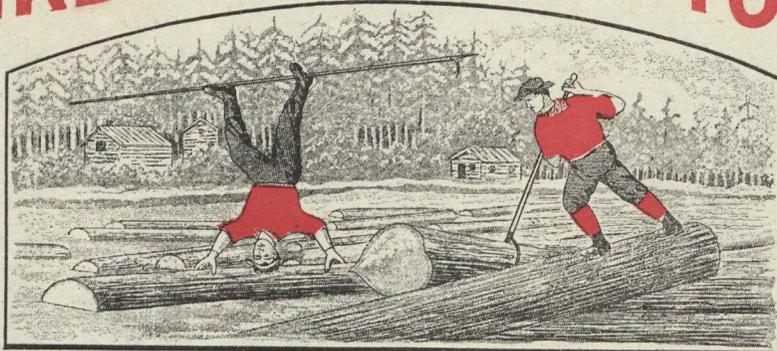
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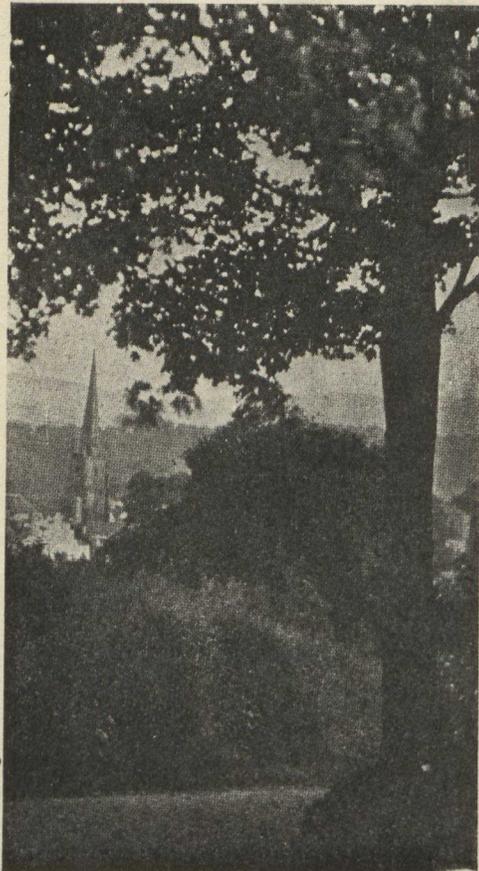
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## What do You Know about the Opportunities on your Railway?

The lines of the Canadian National and affiliated railways serve the nine provinces of Canada, its principal towns and cities, and a vast undeveloped area containing unmeasured natural resources that offer unequalled opportunities.

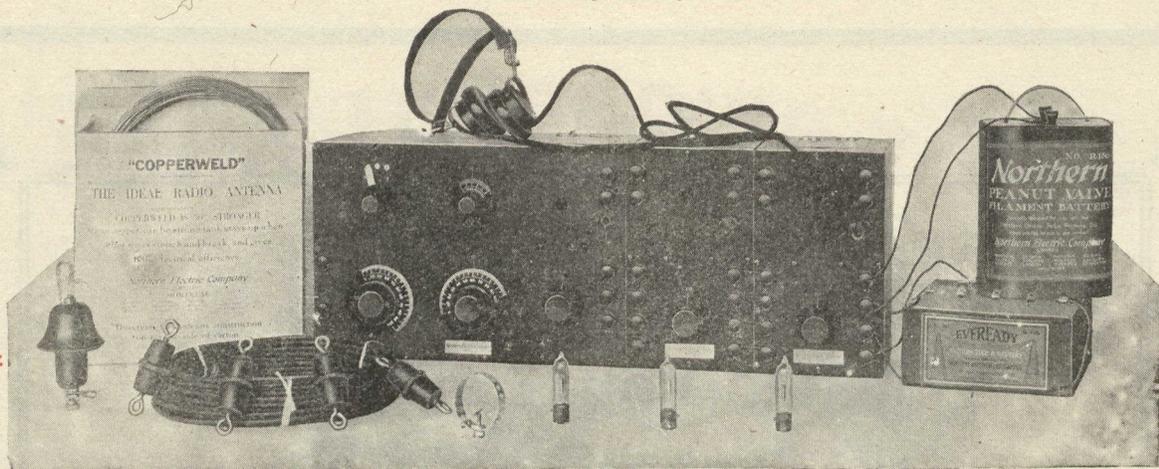
The Industrial and Resources Department is in possession of a large amount of valuable data and information on the economic and physical character of the country served by the line which is yours for the asking.

Firms considering industrial development should consult this department and secure the benefit—special data compiled for enquirers.

### MINES AND MINERALS

Those interested in raw materials should write for pamphlet just off the press, "Mines and Minerals" on the Canadian National Railways, which contains a fund of information including new uses for a number of economic minerals.

**C. PRICE-GREEN,**  
Commissioner,  
Canadian National Railways,  
Toronto, Ont.



## Give Your Boy a Radio Christmas with a Northern Electric R1000 Set



R215 A  
Peanut Tube

### This Set Contains Three "Peanut" Tubes

They eliminate Battery Charging because they operate on dry battery. The Peanut Tube is used as an Amplifier or Detector and is especially valuable for Radio Frequency work. It is mounted in a Northern Electric R40 Socket, this combination of Peanut Tube and Socket being Standard equipment for the highest priced sets built.

The R1000 Radio Telephone Receiving Set Consists of:—

- 1 No. R1 Short Wave Tuner and Detector Unit.
- 2 No. R5 Amplifier Units.
- 1 No. R6 Double Head Set, 2500 ohms.
- 1 No. R650 Aerial System.
- 3 No. R215—A "Peanut" Valves.
- 1 No. R180 Northern Peanut Valve Filament Battery.
- 1 No. R90 45 Volt Plate Battery.

*We also make transmitting equipment for forestry work*

## Northern Electric Company LIMITED

MONTREAL    TORONTO    WINDSOR    CALGARY  
HALIFAX    HAMILTON    WINNIPEG    EDMONTON  
QUEBEC    LONDON    REGINA    VANCOUVER

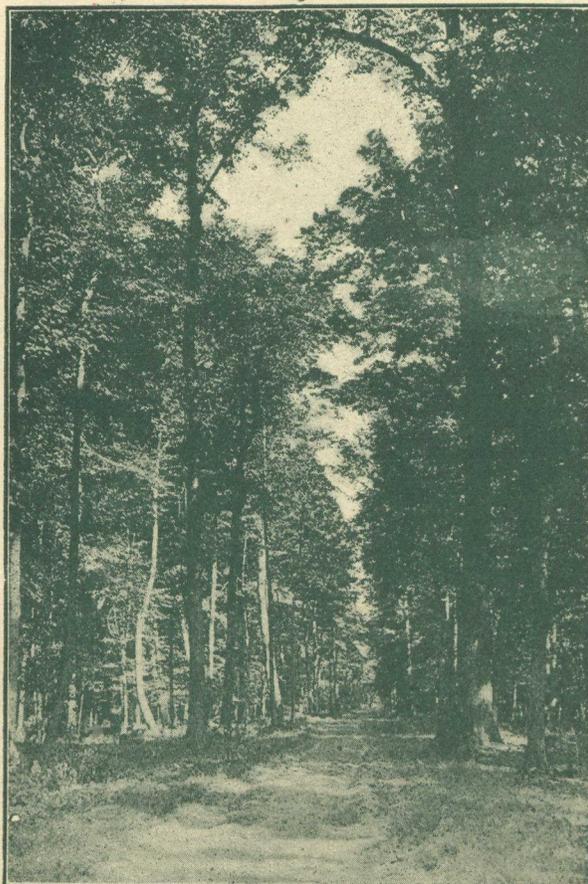
*"Makers of the Nation's Telephones"*

### MANUFACTURING

Manual Telephones  
Automatic Telephones  
Wires & Cables  
Fire Alarm Systems  
Radio Sending and  
receiving Equipment

### DISTRIBUTING

Construction Material  
Illuminating Material  
Power Apparatus  
Household Appliances  
Electrical Supplies  
Power & Light Plants  
Marine Fittings



Lumbering, Farming, Ranching, Mining, Hunting,  
Fishing, Free Grants and Homesteads.

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**Department of Lands and Forests**  
TORONTO, ONTARIO

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**Hon. BENIAH BOWMAN,**  
Minister

**W. C. CAIN,**  
Deputy Minister

Christmas  
Greetings

The Waterous Engine Works Limited,  
with a record of 80 years' service to Lumber,  
Pulp and Paper and other Wood-using Indus-  
tries, extends to its Patrons in particular and  
to the Readers of this Magazine in general its  
most Sincere Wishes for a

Joyous Christmas Season  
and an Unprecedentedly  
Prosperous New Year



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BRANTFORD, ONTARIO, CANADA