



# THE ROYAL BANK OF CANADA

## MONTHLY LETTER

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### OUR FORESTS ARE WORTH PRESERVING

**T**HE history of Canada is staged against a forest background. In fact, forests have had great influence on the progress and welfare of mankind in every land and in all ages. Without wood, history would be a very different story.

Take Canada today. Of all the wealth created by our basic sources of production — agriculture, forests, fisheries, trapping and mining — the forests produce one third, or, to be wholly accurate, 31 per cent. On these basic industries rests Canada's trade and commerce.

In countries which border on the sea, forests were the foundation of shipbuilding industries, maritime expansion and naval prowess. In our early history the forests on our eastern seaboard played a significant part. They were so favourably located with reference to both the sea and rivers that our colonists built a thrifty trade overseas. Here was the forest primeval of Longfellow's *Evangeline*. Nova Scotian ships were known in every port of the world, and by 1878 Canada was fourth among the shipowning nations. That era passed away with the coming of steel ships, but the worth of our maritime slopes for growing trees has not died. Nearly eighty per cent of the land area of Nova Scotia is unfit for agriculture, but is well suited for the production of timber crops.

The job our maritimers have to do is one of conservation, wise management, and development. Fifteen hundred miles westward begin the prairies, where the task is entirely different. It is not a matter of managing a forest or woodlot already there, but of attempting to establish a grove of trees where none exists.

The development of prairie farm tree growth has been phenomenal. The government policy of tree distribution, started in 1901 as an experiment, has grown until by 1946 the output from nursery stations had totalled 200 million trees.

It is not many years since the western plains farmer derided the idea of growing trees, but already the benefits of woodlots and shelter belts are widely acknowledged. Twenty-five years ago one seldom saw

trees around farm buildings, there were no vegetable patches or flower gardens, and the sight of a few willows living their precarious life near a gully or at the bottom of a coulee was a relief to dust-filled eyes.

Today, trees give shelter to crops, buildings and livestock. They collect and hold the snow, preventing it from banking up around buildings, and they release it slowly in spring so that more of its precious moisture is fed into the earth. They break the force of hot winds in summer, slowing down evaporation. They give shelter for gardens, and make living more pleasant.

#### *Use of Land*

This digression was made to indicate that forestry is practicable, paying and desirable in all parts of Canada, from the natural home of trees on the Atlantic and Pacific slopes to the grasslands of the Prairies. But not all land is suitable for trees, or for the same kind of trees.

Forestry represents one of the three major ways of using land. The others are cropping and pasture. Generally, woodland, grass land and desert divide the surface of the earth among them, and between them there is constant conflict. The grass lands are forever attempting to encroach upon the woodlands, often with the assistance of men bent upon extending their farms. The desert is always trying to encroach upon the grass land, an attempt in which it has been helped by men: in the past, unwittingly, but in these days of widespread knowledge about wind and water erosion, by men with their eyes wide open.

In Old Ontario, according to the report of the Royal Commission on Forestry, 1947, forest cover has shrunk to 9.7 per cent. Groups which have studied the question estimate that up to 8,000 square miles, or 5,120,000 acres, of waste land should be returned to forests; the Commission itself is convinced that at least two and a half million acres of Old Ontario might profitably be reforested.

There is no overall recipe, no rule of thumb, as to where trees should be planted or not planted. Every scheme needs to be looked at individually, and the

long-time results as well as the immediate effects should be assessed. The draining of marshes, for example, may be good or bad. Holland Marsh in Ontario did not involve water storage and the reclaimed land is being put to good use; draining of Florida swamp, on the other hand, has upset the balance of nature as well as the bank balances of those who did it. Not only expert advice but common sense is needed.

Different parts of the country demand different trees and different care. A well-kept forest in British Columbia will look quite different from one in New Brunswick, yet each may be perfect for its location. The trees are suited to the soil and climate, and, so far as may be possible, to the requirements of the owner.

There are, however, certain qualities they will have in common. Poor or surplus trees have been thinned out to give the good ones room. There are no over-ripe trees, past their best growing years, no diseased or damaged trees, no very branchy or badly shaped trees. The forest floor is covered with needles, leaves, twigs and small branches, so that the soil absorbs the large amounts of water trees need and prevents erosion. Grazing animals and fire are kept out. These are the marks of a good forest anywhere.

#### *Age, Growth and Size*

There are two dangers facing the planner of a woodlot or small forest: that he may expect returns too quickly, and be disappointed, or that he may decide the time needed for growth is too long, and the results not worth his best effort.

It is true that trees do not grow to maturity with the speed of radishes or nasturtiums. With some trees one must think in terms of half centuries and centuries — and it may be said as an aside that countries with the vision and courage to do so will benefit because children now at school will live to see the culmination of such thinking.

If you wish to be remembered, said the English essayist in *Dreamthorp*, "better plant a tree than build a city or strike a medal — it will outlast both." In England there are oaks whose acorns were forming that June day when King John signed Magna Charta at Runnymede, and a few years ago there still existed the Newland, Gloucester, oak mentioned in the Domesday Book which was compiled in A.D. 1080-1086. It is claimed that sequoias of California have rings going back to 1305 B.C. And in Mexico there is a cypress said to be 3,000 to 5,000 years old.

That is one side of the shield, the exotic side which has not much material significance for the Canadian farmer intent upon growing fence posts, firewood or merchantable timber. He will be immediately interested in the fact that in its natural home east of the Rockies a spruce forest reaches maturity in 60 to 100 years and balsam reaches merchantable size in 40 years. These two, which account for 86 per cent of the wood used by pulp and paper mills, make up by far the largest part of our softwood forest.

Here is a table based on the average of hundreds of trees of each kind growing in plantations on the

nursery station at Indian Head, Sask. It shows the age of the trees and the height attained at that age.

Species	5 Years		15 Years	
	ft.	in.	ft.	in.
Manitoba Maple.....	8	0	21	2
Green Ash.....	4	8	15	3
White Elm.....	4	6	13	3
Paper Birch.....	8	5	21	9
Russian Poplar.....	12	6	35	6
White Spruce.....	1	6	12	0
Scotch Pine.....	1	5	16	10
Jack Pine.....	2	0	15	6
Lodgepole Pine.....	1	0	13	0
Tamarack.....	5	8	21	6
Siberian Larch.....	4	6	22	9

#### *Forests Store Water*

Over thousands of square miles of North America watersheds have been deforested and overgrazed, declares William Vogt in *Road to Survival*. Thousands of silted stock-ponds, power and drinking water reservoirs, and miles of muddy flooding rivers show the effect of this devegetation.

Although forests intercept rain and, by promoting evaporation before the water reaches the ground, reduce the amount of immediately available water, they more than make up for it in other ways. Research findings show that the residual water is almost all usable. Remove the forest, and the run-off becomes flood flow, usually wasted and always laden with valuable topsoil.

The trees, their roots, and the humus of the forest floor act as great sponges. The result is a tendency to equalize stream flow, to reduce the gap between high and low water stages, and to lessen the seriousness of floods. This is of importance not only to adjacent farms, but to distant centres of industry which depend upon a steady flow of water in the rivers to supply their electricity.

This water control we have been talking about is managed mostly by the great forests which mantle the mountain ranges and the highlands which are the headwaters of our great rivers, but even the small farm woodlot has its part to play.

One farm woodland has little effect on the whole flood-control problem, but a little patch of woods here, a larger one on another farm, and so on for thousands and thousands of farms — why, even today these farm woodlots amount to 34,792 square miles, and that is important acreage in any country's water conservation programme.

#### *Erosion Control*

One has only to read Mr. Shepard's instructive book *Food or Famine*, with its references to the challenge of erosion, to realize how among some people — and is it so very different among ourselves? — the destructive process has reached vast proportions "rooted in ignorance of the ways of nature and in greed and shortsightedness in using nature's bounty."

Studies show that the principal causes of soil erosion are the removal of timber, burning-over of land, breaking up the vegetative soil cover, cultivation of crops on steep slopes, and over-grazing of pasture land. As Zimmerman puts it: First the axe, then the plough, then the rain, then erosion, finally the desert.

When the British tanks stormed into Tunis in 1943 they churned up the dust of Carthage, the great city of a million people built by the Phoenicians in 850 B.C., the wealthiest city of antiquity. The people of Carthage in 393 B.C., when their city had been standing just as long as from Columbus' discovery of America to this present year, would have mocked anyone who told them their buildings would be buried in sand, merely a nuisance to be fought over.

We in Canada need not fear that fate for our farm-lands and cities, because we have the book of millenniums of experience open before us, and we have a hard practical reminder when paying taxes to provide relief for countries which are unable to grow food on their desolate land.

### *Conservation*

Leading authorities say that at least ten to twenty per cent of any agricultural section of land should be supporting forest growth or woodland. It is the job of conservation people to reach that minimum.

We have made progress in many directions, notably in forest fire protection, in research, and here and there in private forest management. But the sense of need is not yet widespread. A recent financial newspaper's special section of 24 pages dealing with forests and pulp and paper pushed the single article on conservation to the back page.

At last year's Summer School in Banff the naturalist Dan McCowan told of Alberta's plan for a band of trees to be set out and preserved in the foothills from Montana to the northern limit of the province. The glaciers are melting rapidly, and the great undertaking to conserve water has far-reaching objectives. A board representing both the Dominion and Alberta has been set up to obtain and maintain the greatest possible flow of water in the Saskatchewan River and its tributaries.

We are learning that conservation is not merely prohibition. It has a broader scope than that. It means wise use, which benefits us at once, as well as purposeful development, which makes things secure for the future. It means orderly handling of woodland and cropland, which profits us today, as well as sustained regulation, which assures us of supplies of wood and food and water in years to come.

### *Public Co-operation*

Any conservation plan needs public co-operation. It is only a waste of time to try to parcel out the blame for conditions as they are. Science and our people can stop the waste, replenish the woods, and place our water and timber supply on a perpetual basis.

We are not crying over spilt milk, but trying to learn a lesson, when we recall the hive of woodworking industry that used to be eastern America. The income loss from deforestation has been tremendous. Some parts of the lumber business literally sawed off the limb on which they were sitting. They left big stretches of Canada and the United States a ghastly epitaph of human effort misapplied.

Overcutting did not merely exhaust timber. It destroyed the complex balance of vegetation and soil.

### *Official Protection*

Public co-operation will be more effective when it works with and through officials responsible for jobs which require expert handling.

Forest wardens are not officers with shotguns keeping people out of the woods, nor are they "tree doctors" who hasten out to treat sick acorns. They are trained men who preserve whole forests from disease and death. The most important principle in the field of forest protection is that preventing the start of a destructive agent is far more effective than control efforts after the damage is under way.

This is why careless people are unwelcome in Canada's forests. A Nicaraguan proverb says: "One man in one day with one match can clear a hundred acres."

Forest fires start as the result of what people do or do not do. Human carelessness, indifference and ignorance are to blame for all but the very few fires started by lightning or other natural causes.

Fires, though the most spectacular, are not the only menace to forests. The peaceful appearance of woodland is deceiving. The trees forage with their roots for water and food, and gather sunshine with their leaves. Insects attack them from their roots to the tips of their twigs, all through their lifetime. Disease runs through millions of acres with epidemic speed and destruction.

In a managed forest or woodlot space is given the trees by thinning. Foresters attempt to control insects by encouraging their natural enemies such as parasites and predators, or by using insecticides. Diseases are fought by destroying whatever is causing the disease, by protecting trees by fungicides, and by breeding trees that are immune to particular diseases.

More and more the provinces are providing the service of foresters to help woodlot owners and small forest managers. Says M. Roch Delisle, Director of the Forestry Extension Bureau, Quebec: "A competent and active forester who takes the trouble of going into the woods with the owner will achieve in one year more silvicultural practice on woodlands than will in ten years all radio talks, bulletins and press articles."

### *Widening Markets*

It is worthwhile for the man who owns trees to take care of them and provide for a future yield, because the market for wood is expanding.

This is realized by the big user of forest trees, the Canadian pulp and paper industry, which is increasingly concerned with the future of the forests it operates and of the forests as a whole. Annually, the industry spends many millions of dollars in developing improved forest management methods. Some years ago it adopted, declared and is now implementing a forest policy of perpetual yield and increasing output from its woodlands.

As a result of careful management, there are forests which have been cut over from time to time for 100 years and are still giving fine yields of wood.

Everyone knows that this industry is Canada's most powerful collector of United States dollars through export of products. In 1947 the industry took pulpwood valued at \$203 million and converted it into products having a gross value of \$706 million, thus increasing the value of the wood it used by 3½ times. It obtained its wood from the following sources:

From farmers and other small holdings:	20	per cent
Other purchases, including sawmill waste.....	10	" "
Cut from owned or leased limits.....	70	" "

There are, of course, many other manufactures which include wood as their chief raw material, and it would surprise any of us to follow a tree from the forest to its final product and to see the work that is supplied in its harvest and fabrication. The forest provides employment regularly for many people.

One third of all the wood cut in Canada each year comes from farm woodlots, according to Mr. E. S. Richards in his booklet *Farm Woodlots in Eastern Canada*. The average value is low, however, because most of the wood from farms is sold or used as fuel, while most of that from other sources commands higher prices as sawlogs or pulpwood.

Local wood-manufacturing industries could be successful if they were assured of a continuous supply of good quality wood such as could be raised if well-kept woodlots were operated on a sustained yield basis. The furniture industry, which grew up in Ontario because of the hardwood forests originally growing there, now depends to a large extent on imports, while hickory and white ash for the handle industry come from the United States. The trees which were the foundation of these and other industries grew and can be grown again close to the factories.

### *Forest Education*

It is necessary that we should learn forest facts, not forest fancies. The poet who wrote: "Woodman, spare that tree! Touch not a single bough! In youth it sheltered me, And I'll protect it now," was being merely sentimental, but his opening words are often quoted in serious society today. The "Woodman, spare that tree" approach to conservation is wrong, provided the tree is mature and can be put to effective use.

Educational programmes, both in public and high schools and in adult courses, should tell convincingly about the advantages of good forest management. One does not need to be a Johnny Appleseed, planting apple pips all over the place, in order to be a good forest conservationist. In fact, a man who carries a pocketful of acorns to plant along the road when he goes for a walk is likely setting out groves of trouble for future generations. There are places to plant, and not to plant, trees, and we need the right trees in the right places.

Teachers might benefit by more intensive training in normal schools, not in the techniques of forestry and in tree recognition, but in the practical and necessary points about preservation of what forests we have and the need for more trees.

Through the 4-H clubs, a whole generation in Quebec is approaching maturity with sound training in forestry and small woodlot management.

Out in British Columbia a little while ago Judith Robins and Jimmy Jones were the first to receive seedling trees and a certificate when the Western Branch of the Canadian Pulp and Paper Association supplied thousands of seedlings to school children. The certificate is an elementary lesson in forest conservation for all of us: "These Trees are Like Little People. Be Kind to Little Trees. A little tree has been given to you to plant carefully where it will grow in your own garden. Protect it, water it, and guard it from fire so that it will grow tall and strong. It should inspire you through all the years of your life."

### *And, Finally:*

Being in the lumber or firewood business is not the only reason for growing and protecting trees. They are much more than columns of wood; they are living creatures of a great creation. They breathe, eat, drink, grow, reproduce, work and rest.

In some parts of Sumatra the natives believe that certain trees are the residences of spirits of the woods. It is not hard to understand that a thing so stately as a tree which grows so much bigger and becomes so much older than men should win the reverence of early mankind. We do not have to go that far, but a little of it would be a good thing, economically, aesthetically, and for our preservation.

Willa Cather, who remembered the lone peach tree in the church garden atop Acoma, near the Enchanted Mesa in the New Mexico desert, and came home to write *Death Comes for the Archbishop* around it, said this: "I like trees because they seem more resigned to the way they have to live than other things do." That appears to throw the burden of their protection squarely on our shoulders. These prisoners, chained down by their roots, powerless to run from storms and fire, have only men to stave off disaster. In return, they form the basic structure in men's lives. As the Old Testament prophet said: "The tree of the field is man's life."

There is another virtue about trees, not yet mentioned. Some, as we have seen, carry our thoughts back to olden times — to the stately Bluenose ships which sailed out of our harbours for ports in all the world; to Maisonneuve, setting up his cross on Mount Royal; to the timber stockade of Fort Garry, and to the sea of trees that stretched between Alexander Mackenzie and the Pacific when he first glimpsed the western shore of Canada.

But in addition trees project us into the future. When we plant them and protect them we know we are performing acts the issues of which will long outlast us. Our maples and pines and elms and balsam are just seedlings today, but the oak seedlings which were tender plants when Cartier first strode through a Canadian forest — what have they not seen of Canada's emergence from wilderness to metropolis, of her development from the home of aborigines to a leader in civilization? What may not *our* seedlings see?