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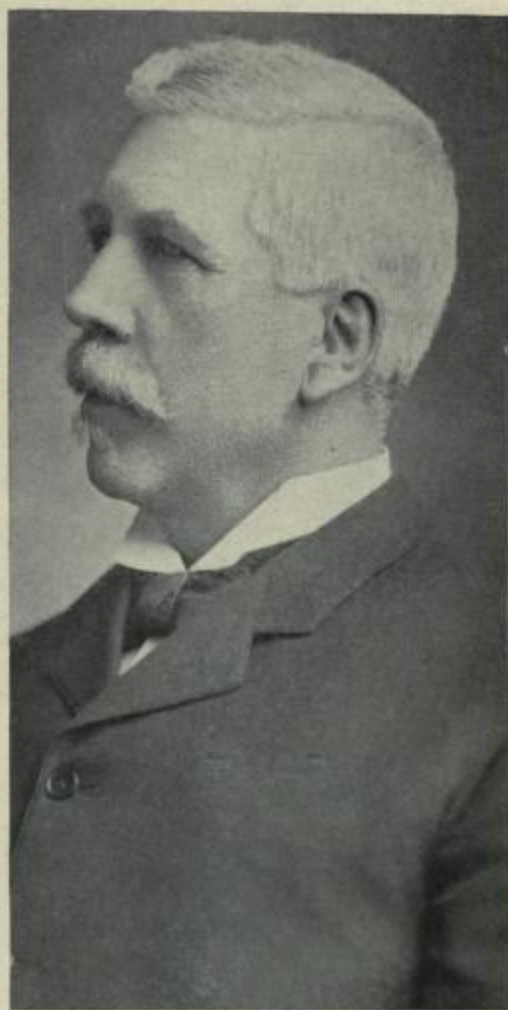
THE WAR AGAINST WASTE

BY WILLIAM WHYTE

ILLUSTRATED WITH PHOTOGRAPHS.

THERE is a story of a king's prisoner in some medieval time, whose duration of life was left in his own hands by the terms of an ingenious sentence. In a wall of his cell was placed a water-spigot. The source and quantity of supply he was not permitted to know, but he was bidden use the water freely or sparingly, as he pleased. Only, when no more water came, he must die. The flow was so great that he was relieved of fear, and he sported with it riotously, until it became mild, then weak. Here returned the fear. He grew miserly of water. Every drop might mean an hour or a day. Then, though it was after many years, he dared not drink at all, and so died, choking, even before the trickle ceased. He had wasted his resources, and conservation came too late.

From Cape Breton to Virginia the original English settlers of America found themselves in a country of natural opulence so great, especially in timber, water and soil, that such an eventuality as exhaustion or even appreciable impairment never suggested itself. That was only three hundred and fifty years ago—and less. They came from a land where thrift and care had been taught by centuries of experience, but the old ways were soon forgotten, and never renewed. Until very lately, there was no uneasiness, no economy. On the contrary, a tremendous incoming swirl of humanity swept across the continent after the eighteen-sixties, carrying with it the same recklessness, the same waste, so that forests have faded, streams have at some seasons washed bare the lands and at others left them parching. Iron and coal have shrunk to a known supply sufficient at the present rate of use for not much more than another hundred years. Oil and gas fields once thought perpetual have died out; and in some of the older sections, the soil itself has

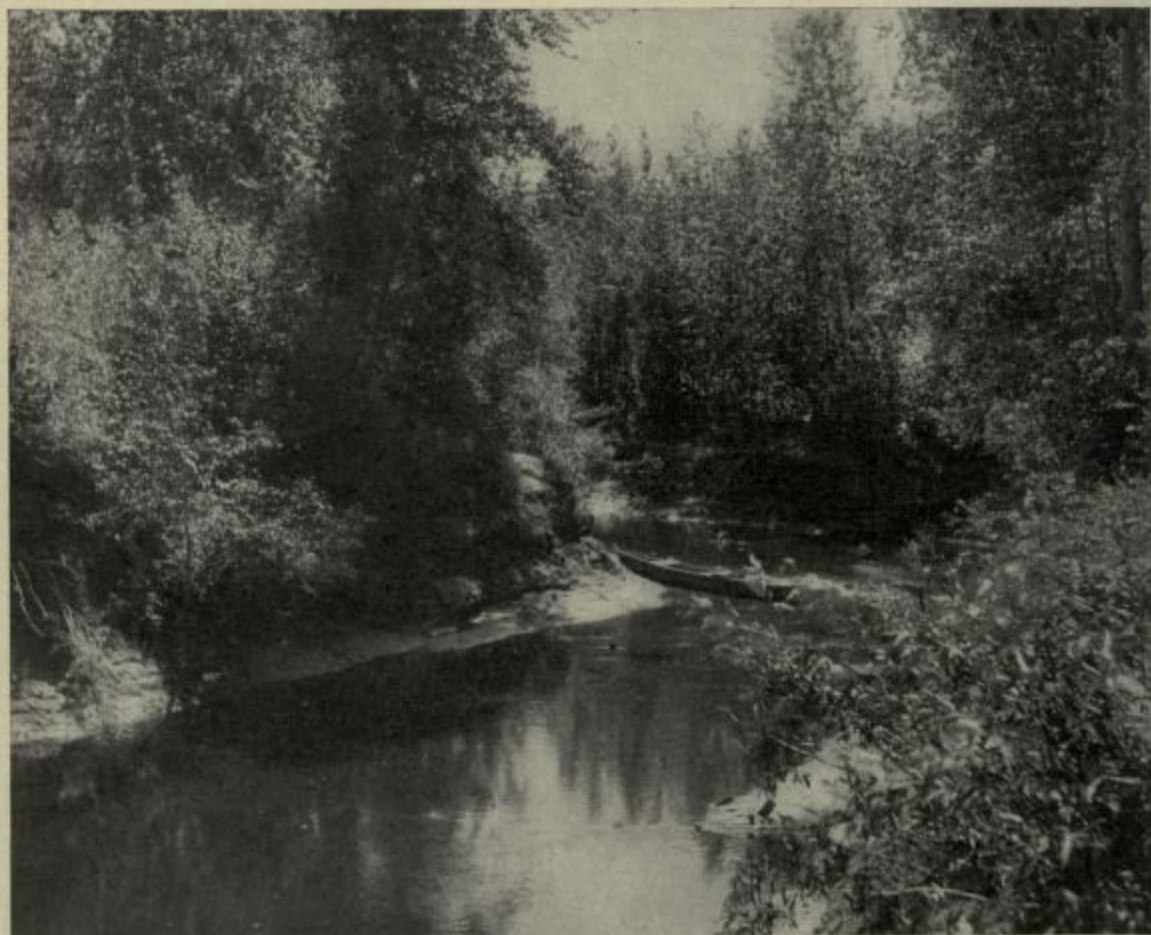


WILLIAM WHYTE

become sterile. We have sported with our resources until the end of them has begun to threaten, but we are more fortunate than the old king's prisoner in knowing what is left; and beyond that remainder, we know how we may bring back out of nature's eternal reservoir a restoration of original opulence to at least the most important of the things we had.

The conference held at Washington in February by the United States, Canada and Mexico was the first move toward what is hoped will be a world-wide system of conservation whereby may be preserved for

The commissions to which the work will be entrusted will do it well, undoubtedly, having their governments back of them in common, and all the skill of the world at their command. But back of the governments must be the force of the people, the power of public opinion and a clearly informed purpose. There cannot be too much publicity, too wide a diffusion of exact knowledge touching exact needs. No doubt this will be forthcoming. It is no part of my present intention to go into the matter as a propagandist at large, but there are some phases I wish to speak of in particular—not



FOR DEPENDABLE WATER WE MUST HAVE WOODS

each people the best it has for itself, and the most useful for others. The questions and policies involved are stronger than national boundary lines, since nature knows nothing about such things, and her stores and streams underlie or cross them in such a way as to require treatment in the mass and by the centralized best judgment of all the peoples. This first move is therefore of continental scope, and is concerned directly with things that lie at the very base of the daily individual life and sustenance of everyone living between the two great seas.

as a statistician nor a Jeremiah, but as one whose own life's work has brought him into contact with a few facts in nature that apply intimately to the well-being of his countrymen.

The governments will deal eventually with all resources of whatever kind, but there are two so closely related that they are practically one, and on that one rests more than on all the others. I mean timber-and-water.

Cement is coming to the relief of iron and steel. Newer methods of combustion are decreasing waste and realizing more fully the



FOREST SURVEY PARTY AT RIDING MOUNTAIN RESERVE, MANITOBA

heat contents of coal. With the precious metals we need not trouble, seeing that the arts and exchanges will care for them, and that they are precious principally because they are so cunningly hidden in the earth that their exhaustion is not imaginable. And the last hundred years have disclosed the operation of a law in economics through which, when art exhausts the supply of any natural thing of daily use, an abundant substitute presents itself. For example, fifty years ago, as whale oil and its illuminants were flickering out, petroleum came in and brought with it a troop of by-products such as never before had been heard of. Coal itself has had its ups and downs since it succeeded wood and peat, and has been forced to give up substitutes—secondary but preferable, as electric light and energy. It is too

thing is impossible comes dangerously near to stating his own limitations. Many wise men, whose works have given

soon to say that a method will yet be found whereby art will parallel nature in gathering and directing that fluid, or element, or whatever it is, which somebody has explained as "a manifestation of an attribute of matter," and the rest of us know as "the current." But while it is too soon so say so, it would be indiscreet to say the contrary. So many "impossibilities" of a few years ago are the commonplaces of to-day that a man who says any new



WESTERN CEDAR AND BLACK PINE. ROCKY MOUNTAIN PARK RESERVE, ALBERTA

weight to their words, openly hope for a primary control of electricity. When or if that comes, anxiety about the supply of coal and oil and natural gas may be dismissed.

And so with everything else but wood and water. Hewers of one and drawers of the other shall we remain until the end of time. Too much of both have we been, these latter days. The example of our neighbor to the south teaches us, if we be capable of learning, that we must hew less wood if we would still have water to draw, and that we must not draw it wastefully.

to do as yet more than initial harm. Here is where Canada may profitably stop and see what the big sister has done with her resources, and shape her own conduct in ways of righteousness, accordingly.

The timbered area of what are now Canada and the United States was originally about a billion and a quarter acres. Nearly four hundred and fifty million acres have been stripped, practically all within the last fifty years, mostly within the last thirty-five. The rate of destruction has been very swift. It must be checked.



FOREST RANGER INTERVIEWING CAMPERS, CYPRESS HILLS RESERVE, ALBERTA

That is the point: The United States has come to the edge of a period where distress is imminent, through utter improvidence, and the indulgence of private and corporate rapacity in dealing with the natural water supply and stripping the earth of trees. Canada, with less than a tenth of the population but a greater superficial area, has been gleefully toddling along on her own side of the fence, swinging her little axe and burning her little fires just like her big sister, but without the plentitude of numerical power

In the United States scientific forestry is practiced on seventy per cent. of the publicly owned forests, but on less than one per cent. of those privately owned. There are taken from the forests each year twenty-three billion *cube* feet, while the new growth is less than seven billion. Since 1870 not less than \$50,000,000 and fifty human lives have been destroyed each year by forest fires. The methods of cutting and treatment are such that only 320 feet of timber are used out of every 1,000 feet that stood in the forest.



THE WESTERN PROVINCES ARE FERTILE BECAUSE OF THEIR MANY STREAMS

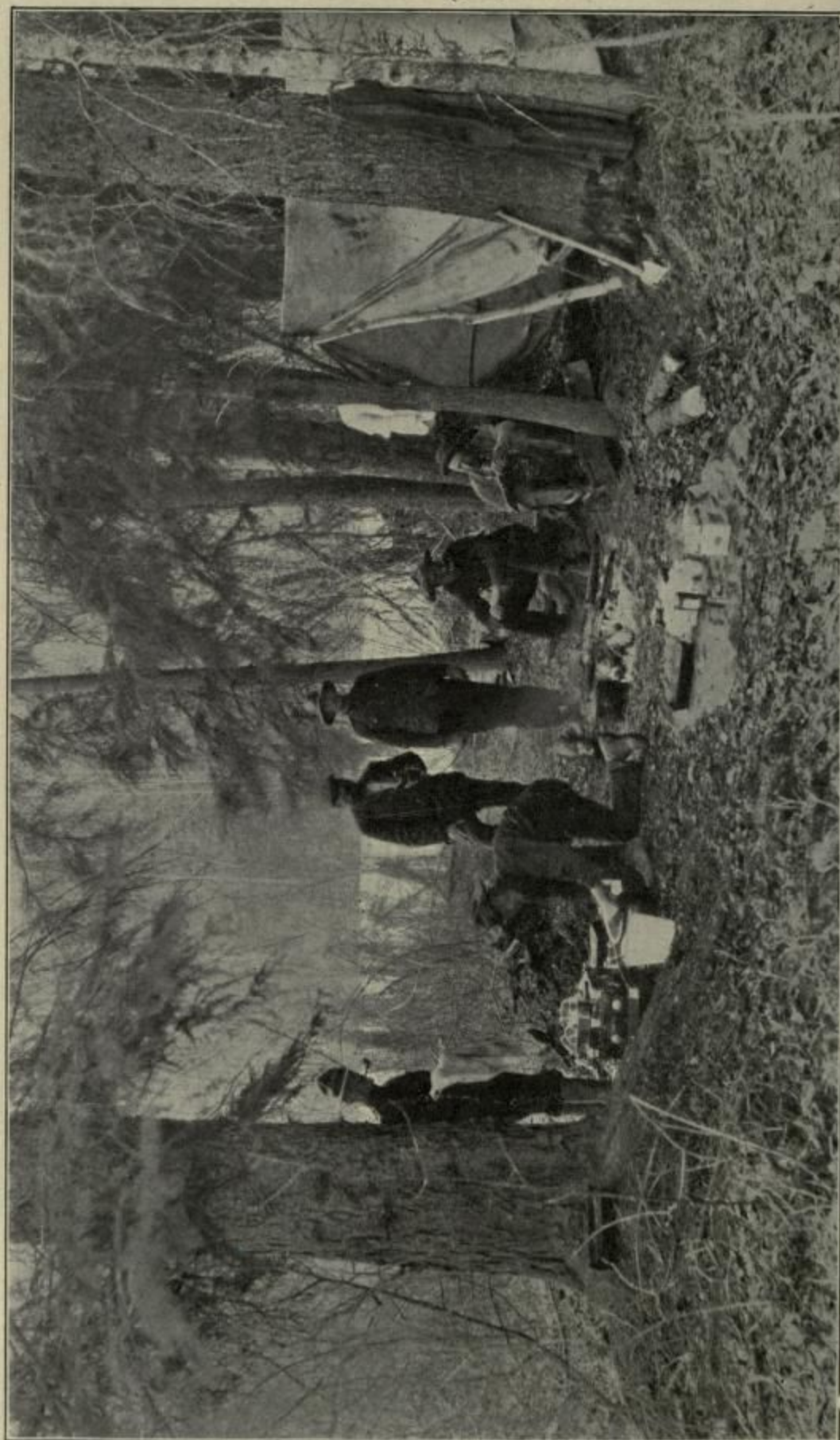
There are some three million private owners, over whom and whose methods practically no control is exercised.

The regions at the headwaters of great rivers, drainage-basins of first instance, have suffered most from wanton cutting. The

affluents of the principal waterways furnished cheap and easy access to the timber-markets, and this, with their surrounding growths of splendid wood, invited the lumbermen. For a generation or two the axes rang, and the rivers were scummed with



IT IS ESTIMATED THAT 332,612 LINEAR FEET OF LOGS WERE CUT FROM THE RESERVES IN ONE PROVINCE ALONE LAST YEAR



SPRUCE TIMBER OF GREAT SLAVE RIVER. MAJOR JARVIS AND HIS MEN. IN THE TREES OF THIS REGION IS A NATIONAL ASSET OF THE HIGHEST IMPORTANCE

rich freights of logs, until the trees thinned out and the streams rebelled, rising in the spring when nothing held back the thawing snows, and in the summer either roaring over banks with sudden rains, or for lack of rain shrinking to runlets that any thirsty herd of cattle might drink in two. The soil of the upland, going off with the melting snows, began to wash away to the underlying rock and gravel, while the soil of the valleys and lowlands went out with the floods.

The disturbance of those natural arrangements which worked out to a seasonable equalization of water supply changed the face of the immediate basins of the Mississippi and the Ohio. No one will ever know the money measure of the havoc thus wrought, as against the personal gain to the so-called lumber kings who caused it. To check it, and insofar as may be to restore the old conditions, the United States has been obliged to come forward with the institution of a system of dams in the upper reaches of those rivers, to govern their flow throughout the year. Reforestation and afforestation, both slow processes, have begun, and in time the evil will be corrected, so far as human skill may go.

These are but two of many instances that might be cited. The Maritime Provinces of Canada could furnish others, though none so glaring. But an indication of the tendency in Canada is furnished in the statement made by W. C. H. Grimmer, Surveyor General of New Brunswick, at the annual meeting of the Canadian Forestry Association, held in Toronto last February. Mr. Grimmer said then that timber limits in New Brunswick, which in 1898 were rated at \$8 per mile, were held in 1908 at \$200 to \$500 per mile.

Great Britain's Royal Commission on Coast Erosion last year made a survey of the timber resources of the world, more especially as bearing on the supply for the British market, which takes about £30,000,000 worth annually. The commission's investigation confirmed the belief already prevailing that the sources of supply hitherto depended upon were becoming exhausted, and found an explanation in "the reckless exploitation and the destruction of forests by fire and other agencies in the United States, Canada and Northern Europe, while the use of timber is constantly increasing," no substitute for wood having yet been found.

Northern Europe as referred to in that

report must not be taken to include the German empire. That country, when first the Romans and then the Huns assailed it, was one vast forest. In the centuries of its history as separate states and principalities, it was almost denuded of trees. But through the far-reaching wisdom of the governing body now directing it from Berlin, this has been changed. About one-fourth of Germany to-day is wooded; and under the best and most practicable set of forestry laws on the books of any country, forestation is not being fostered, but enforced. The interior supply is far short of the demand, and probably will be, always. But no tree comes down without another being planted, and the growths along the watersheds and courses are so cared for that already the natural waterways are coming into restoration. The great estates of that empire are not permitted to be dealt with for private purposes to the detriment of public weal—a point in which England might see a little light.

Germany, moreover, though in that behalf Canada was first, has had an eye to the development of artificial waterways. One may travel across nearly all the states of the empire by motor boat, on rivers and commercial canals. Canada has nothing to learn from any other country about that, but rather, considering population, something to teach. The United States has been taking this to heart, and is contemplating new enterprises, one of which will tap the great lakes at Chicago and furnish water-transportation through to the Mexican gulf.

It is not in this article that I will broach the question of joint action with the United States in maintaining the level of those lakes, nor of governing international streams that furnish power. Whatever that question may involve will come within the purview of the conservation body itself. My present wish is to show and emphasize the necessity for taking a course completely opposite to that followed in the United States at and after a stage of development such as our own is at present. In this, it is by no means required that we await any initiative outside ourselves.

Canada has made a beginning. The eastern provinces may have much to repair. The western have much to build up. And the West has not been idle, though perhaps the provinces have been willing to lean upon

the Dominion government for a good deal that they might have done or be doing for themselves.

The great forests of Canada are northeast and northwest of Ontario, and on the eastern slopes of the Rockies. To the west of Hudson Bay and up to the Arctic shore are wide sweeps of land now wooded, and others, boggy or otherwise unattractive to agriculture, where afforestation now would provide enormous wealth in the future.

The Dominion forest reserves all lie in the northwestern provinces. There are twenty-six of them, including parks where timber is managed the same as in the reserves proper, but excluding the eastern slopes of the Rockies, though the same management is followed there also. The work of creating reserves is still in progress. Last year the region around Watertown lake in southern Alberta was examined for this purpose, and a recommendation was made that 195 square miles be set aside. Recommendations have also been made that 130 square miles be added to the Spruce Woods reserve in Manitoba, 238½ square miles to the Pines reserve in Saskatchewan, 45 square miles to the Beaver Hills reserve in Saskatchewan, and 192 square miles to the Cypress Hills reserve in Alberta.

Aside from the Dominion reserves in the west, there are important provincial reserves in Quebec and Ontario, of comparatively ancient origin. The Ontario government has several such, and a new one, covering a million acres in the Rainy River valley, was set aside this year. In Quebec, the Algonquin Park reserve has 1,280,000 acres—two thousand square miles, an enormous territory. It may not be amiss to say that the recently created Hunters' Island reserve, in declaring which the province of Ontario and the state of Minnesota joined, was brought about largely through the efforts of a Canadian railway official, Mr. Arthur Hawkes.

On the extreme west of the country, in British Columbia, the forests need to be looked after, and the present water law requires change. A correction of the unused records is necessary. Many of the streams are greatly over-recorded. An overhauling of the whole system seems to be called for, beginning with this feature. There are questions of the right to store water for later use, and of how much the government should or can do in extending irrigation

works. The acre-foot measurement should be substituted for the miner's inch, and the duty water shall perform should be specifically defined. Title to the water itself being vested in the crown, the extent to which private enterprise may go ought to be settled. British Columbia is vitally interested in the care of its water supply, since irrigation has come to play so large a part there; and this means care for the timber on the mountain slopes and at all heads of streams. The irrigation conventions held in that province have taken these matters up and should have the ear of the provincial legislatures. In this the United States has direct interest, since both the Kootenay and the Columbia rivers take their rise in British Columbia, so that the cutting of the forests in country tributary to them would have an injurious effect on the rainfall and the volume of water not only in Canada, but in the States.

The western provinces thus far have fairly well conserved their timber and therefore their water resources, but energy is needed in two directions—the planting of trees on farms and along highways, and rigorous regulations for the prevention of fires. The railways especially should be obliged to institute a system of forest ranging, and means of communication by wire or 'phone throughout all wooded regions traversed by their tracks. Then again, the same general rule as to seasons of comparative safety and danger from fires are now made applicable all over the Dominion. In this aspect, at least, the existing system needs revision. The greater danger lies in the western provinces, where population is more thinly distributed, railways farther apart, telephone service not so complete, rainfall less and not so frequent, and the winds not only drier (in fact they are dry) but of about double average velocity.

Between Ontario and British Columbia the whole west of Canada is forestable. The eastern provinces, as noted, are stirring to repair their losses and withhold the axe. His Excellency Earl Grey has put his hand to the work, and gone into co-operation with the Forestry Association and the Department of Agriculture. At the Toronto Convention referred to, his lordship urged the seriousness of the case upon the attention of the whole people, and was not unmindful of the western plains.

Not so long ago, the people of Manitoba

were told they could grow no trees except the Manitoba maple, the poplar and the birch. Look at our elms to-day. Broadway in Winnipeg is one of the most beautiful streets in the world, and the elms have made it so. The foliage has become so thick that the trees themselves will have to be thinned out. Of all the elms planted in Winnipeg, the records do not show that one per cent, has died.

For several years officials of the Canadian Pacific railway have co-operated with the Forestry Department of the government in the work of planting trees in the prairie country, at the same time doing their utmost to demonstrate to farmers generally the simple proposition that trees on their farms will draw moisture while serving as a protection against wind, snow and hail. If I were Minister of the Interior, I would require every homesteader, on receipt of title to government land, to plant trees on his farm, and I would undertake to show him that the purposes were not only utilitarian, but that in breaking the monotony of the prairie view, the trees would serve to beautify his home.

We railway men are not altogether unselfish in our anxiety to protect the forests of Canada. These forests protect our interests. If our railway building in the mountains is to be safeguarded, we must require the preservation of the trees. On the other hand, the wheat growers on the prairies have also a selfish interest, which fact they will recognize if they are wise. The prairie provinces are fertile because of the mountain streams. Take away the trees at the headwaters, and the streams are gone. When the Cypress Hills were stripped of timber, the railway was the

first to suffer in the loss of its bridges, which were swept away in the sudden rise of the rivers.

For settled conditions at their best, water is a first necessary thing. For dependable water we must have woods. The city of New York has recently expended \$150,000-000 in the construction of works to ensure a water supply. Without state protection to the forests of the Catskill mountains, whence the supply is drawn, that money would be wasted, and New York be left arid. I think this case is clearly to the point.

"The sole source of water is the rain," says Dr. McGee, Secretary of the Dominion Inland Waterways Commission, "and on one-sixth of this (in the final analysis) depends the habitability and productivity of the country." Each adult man, according to this same competent authority, takes into his system at least one ton of water in the course of a year, and each bushel of grain requires in its making from fifteen to twenty tons of water. Now, without trees to protect and disburse this water, all of which in one form or another comes from the sky, what would be the possibility of life—animal or vegetable in any part of the world that by our standards may be adjudged enlightened? Here then is one of our very first concerns as a people in possession of a country still new: to preserve the forests, to spread tree-growth over the plains, to protect the streams. Let us join hands earnestly and heartily with the two other countries sharing with us this most favored of all the continents in conserving all its natural resources, but most of all, the woods and waters. And let us first of all be assiduous in setting and keeping our own house in order.

A WOMAN'S LOVE

BY S. E. KISER

I LIKE the maid who gives me cause to smile,
 I love the child that gives me little care;
 Men praise the ones who keep them laughing while
 They bend beneath the burdens they must bear,
 But woman—ah, God bless her!—
 Her love is true and deep
 For the child that brings her sorrow
 And the man who makes her weep.