

name of timber berths or timber limits, at an annual rental per square mile. Though the lease is from year to year, yet by custom it is understood that as long as the rent is paid, the lessee may continue in possession indefinitely until he has cut off all the timber he desires. Sometimes the holder is merely a speculator; at other times he is a lumberman, who is keeping the limits in reserve for future working, and thus, frequently, large unworked areas are tied up from year to year by parties who have a quasi right to continue this under the original lease. This makes it difficult to apply new regulations to limits already under lease. Sections of country not yet under lease—and considerable new tracts have in Ontario been rendered accessible by the Canadian Pacific Railway—are in a different position, and governments can readily lay down rules for their future working as timber limits.

Germany, France, Sweden and India have their forests cared for under more or less stringent regulations, and even the small Province of Cape Colony, in South Africa, has its Forestry Department, under Government control, and is doing a good work that should put us to shame. The forests there are being arranged for scientific working, the fundamental principle being, the conservator says, that the cutting shall not exceed the growth. Why should we in America with a splendid heritage, in the pine forests of Maine, Quebec, Ontario, Michigan and Wisconsin have been so prodigal and reckless, and have shown so little farsightedness, as to have gone on from year to year for half a century past allowing this heritage to be diminished gradually in value without even an attempt to prevent it! How often are we blind to the future? The Cape Colony Report for 1884 very well puts it that the policy should be pursued of setting our faces against forest destruction as fully as other moral evils are faced. Further than this, with us here, each State and each Province has an interest in the action which its neighbouring State or Province takes or neglects to take on this question. Our great rivers have often their fountain heads, or the fountain heads of their tributaries, in one or more States or Provinces, and then course their way to the great lakes, or the sea, through other States or Provinces. Have not those whose lands along the route are watered by these rivers, the cities, towns and villages which are scattered along their banks, and the public which makes use of the steamboats and other craft which ply upon their surface, an undeniable interest in seeing that these waterways are not impaired by the burning or cutting away of the forests at these fountain heads?

It is the province of every State to legislate for itself, or to withhold legislation, but in this case, the neighbouring States have a clear right to ask that their waterways and water supplies shall not be impaired or cut off by its neglect to provide proper legislation or proper oversight.

The remedial measures which I would suggest with a view to the preservation and renewal of our forests are in some respects equally applicable to the United States and to Canada.

The leases of timber areas I would restrict to definite periods of five or at most seven years, and when the lease expired, the particular area covered by it should have a rest of say twenty-five years, to allow of the young trees attaining merchantable value. The effect of this would be to largely check speculation in timber limits, and would give ample time to *bona fide* lumbermen to get out all large sized timber. It should be incumbent on each lessee to show his *bona fides* by erecting a mill within a given time either at or convenient to the limits, unless he has a special permit to work the limits for square timber.

The timber limits themselves should be restricted in size to about fifty square miles. This is now done in Manitoba by the Dominion Government. The parcelling out of the timber country into definite, limited areas would enable each Government to more systematically carry out the system of alternate leases and rests for the forests.

The production of square timber should be discouraged, on account of the great waste of material in forming the square log, and because of the additional food for forest fires which this waste material creates.

The cutting on crown lands of trees under twelve inches at the stump should be punishable by a heavy fine, which would be easily collectable at the mills when the drives of logs come down after the spring freshets. This would have the effect of preserving the younger trees until they attained a merchantable size.

The starting of forest fires should be made criminal. Nineteen-twentieths of the forest fires are preventable. There is no reason why camp fires should not be put out, and the knowledge that to allow them to spread was punished by imprisonment, would quickly make camp parties careful, more especially if every member of each party were made responsible.

Not only in the forests which have been cut off by the lumbermen, but wherever fires have swept through areas of crown lands not specially suitable or available for settlement, resowing or replanting should take place. Where

burned areas are left to themselves, trees of a less desirable kind almost invariably spring up. How to effect this resowing and replanting economically is a question of some importance. It can be done in part by the forest rangers hereafter referred to, but, I think, that as a condition of every lease of timber limits, it should be made incumbent on the lessee either to pay a given sum per square mile of territory included in his lease towards the expenses of the Forestry Department of the Government, or that he should actually plant and care for a young tree for every trunk he fells. This would not be an expensive proceeding. It would involve the cultivation of one or perhaps two acres as a forest nursery, and the subsequent setting out of the young trees, and to this might be added the duty of collecting and sowing through the forest, of seeds of desirable kinds of trees. When it is remembered that each forester in Cape Colony is expected, without assistance, to annually raise 40,000 young trees, and that his duties involve the transplanting of these to the burned and other districts within his section, it will be observed that the task thus proposed to be imposed on the American lumberman is not formidable.

Lastly, each Government, in the case of Provinces still possessing forest areas of importance, should organize a Forestry Department in connection with the management of its crown lands. The objects of the Department would be:

*First.* The general preservation of the forests from fires, and from deterioration by improper working.

*Second.* The replanting of the crown forests where burned or exhausted.

*Third.* The encouragement of tree-planting by land owners generally, and the dissemination of information about trees and tree culture.

There should be a Superintendent of Woods and Forests, whose duties should be organization, general supervision and frequent inspection. Under him would be forest rangers or foresters, who would have given districts in which they would reside, and for the oversight of which they would be responsible:—their duties being to prevent encroachment by lumbermen on released crown lands; to see that small trees were not cut; to investigate the cause of every fire happening within their districts, and punish the guilty parties, for which purpose they should have certain magisterial powers; to raise in a small plantation young trees for replanting the burned districts; and to collect and sow the seeds of desirable kinds of trees. Each forester would probably require the aid of an assistant. The administration of the department need not be expensive, and whilst the