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CARE OF THE FORESTS.

Forest preservation in Canada was the subject of a contribution by Mr. A. T. Drummond, of this city, at the annual meeting of the American Forestry Congress at Boston. In a *raume* of the present position of the forest preserves of this country, the author points out that, though in the Provinces of Ontario and Quebec there are still considerable areas of red and white pine along the northern tributaries of the great lumbering rivers, the trees are of diminished size compared with those common 30 years ago, and the lumbermen are fast approaching the limit of the growth of these most valuable of our lumber woods. New Brunswick's preserves have also been greatly encroached upon; Nova Scotia has scarcely any left; in the Northwest the country is chiefly prairie, and there the question is how far forests may be created; in fact it is only in British Columbia that they are yet largely untouched, and these, with what remains in the eastern provinces, it is urged, should be conserved as to be a continued source of revenue. The money to be gained from the manufacture of lumber, however, is not the only measure of importance of forests to the country. That is an item affecting the welfare of the individual provinces or states of the two great political divisions of the continent alone, and if their people choose to waste in a comparatively few years the natural wealth with which they have been endowed it would only be a matter of regret to their own citizens who would have to make up in other ways the revenue their governments generally derive from the forests under their control. There is another and a wider ground in which the people of the whole country are interested. The denudation of the forests has been scientifically proved to have a serious effect on the rain fall of the adjoining territory, and on the streams flowing through it. In this connection, which, on account of local geographical conditions, applies less to Canada than the United States, many states may be and are affected by the unwise action of one of their number. Streams running through and serving the purpose of several states may be so dried up as to cause serious loss to their inhabitants who are in no way to blame for permitting the causes of the trouble. Two years ago a serious fall in the level of the Hudson was attributed to the stripping of the forest land at the head waters of the river, and the feeders of the Erie canal fell so low as to cause fears that a greatly increased expenditure would be necessary to maintain the usefulness of that avenue of commerce. Thus states possessing large wooded areas owe a duty to their neighbors as well as to themselves, and how they may best discharge it is the subject of Mr. Drummond's essay. The work is twofold in its nature—preservation and renewal. Besides Germany, Franco and Sweden, in Europe, India and Cape Colony

have forestry departments, the latter being arranged on the fundamental principle that every tree cut down shall be replaced by a newly planted one; as the Government report says, forest destruction is as firmly opposed as any other moral evil. The expense of this is not so formidable as might be thought, each South African forester being expected, besides his other duties, to annually raise and transplant to the burned and cleared districts 4,000 young trees. This is urged on American Governments as an example worthy of being followed as regards one part of the problem—replanting. Preservation is a more complex and, perhaps, more difficult object to secure. The present system of granting leases, by which lumbermen have virtually continuous control of the limits once they obtain possession of them is open to objection, though with regard to existing leases it cannot fairly be altered without compensation to the holders. In new districts though, it is urged, a wiser course might be pursued in the way of restricting the leases to definite terms of five or seven years, when the land would be given a rest for say 25 years, to enable the smaller trees to reach a suitable size for the lumberman's use; limits should also be of restricted size as is the case in Manitoba and the Northwest, where alone the Dominion Government have control of the wood lands, so that the systematic work of replanting and protection might be more readily carried on; square timber production which causes both a waste and danger, increasing the material by which fires are carried, should be discouraged; the cutting of trees under 12 inches should be a punishable offence, and the starting of forest fires a criminal one, involving the punishment of every member of the camping party whose negligence was the cause of the catastrophe. These, Mr. Drummond thinks, are the remedies for the evil which all acknowledge to exist in a greater or less degree in each of the provinces—in Quebec, owing to recent legislation, perhaps, least of any—and the means of enforcing them, he sums up in the organization of a forestry department by each local government, with a regular superintendent to look after and oversee the forest ranges and their duties, to prevent encroachment by lumbermen on unleased 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, to raise exhausted or young trees for replanting the burned districts and to collect and sow the seeds of desirable kinds of trees, and to generally encourage tree-planting by land owners and disseminate information about trees and tree culture.—*Montreal Gazette*.

Ross & Co., of Quebec, have purchased a tract of pine of S. Coleman, Chicago, situated on Monistique river, north of Driggs station.

A QUESTION OF STUMPAGE.

An agitation is on foot in New Brunswick to secure the removal or the reduction of the stumpage charged by the Provincial Government by all logs cut on the public lands. The logs sawn in that province are almost entirely spruce, there being little pine of any value. The wood exports are, therefore, almost exclusively of spruce deals and boards and scantling, which find sale in Great Britain. Here they come in competition with the woods of Norway and Sweden and Russia. The Norway woods have the advantage of a shorter sea voyage, consequently cheaper freight than the New Brunswick deals, and the cost of the labour employed in logging and milling is less. Under these circumstances the profitable production of spruce lumber in New Brunswick is carried on with difficulty. Not long ago, the New Brunswick Government increased the rate of stumpage. They gave the lumbermen longer leases of their lands, and holding that this gave their business greater security on the ground of permanency, the Government decided to exact heavier stumpage in return for the so-called privilege. It is now claimed that, looking at the disadvantages under which the lumberman and the manufacturers of lumber are laboring, the stumpage charges cannot be borne and ought to be abolished; and it is maintained that although the Provincial Government may lose some revenue, the people of the province must gain very largely. It is, in fact, asserted very positively that if the stumpage is adhered to by the Provincial Government, the lumbering business cannot go on. The answer of the Government has not yet been received.

It is claimed by some that in fairness the Government ought not to levy stumpage charges at all. Under the terms of the Washington treaty and for Dominion purposes it became necessary to abolish an export duty which New Brunswick had for many years imposed on sawn lumber. The Dominion recouped the Province for the loss by an allowance of \$150,000 annually. It held by many that this \$150,000 a year was actually in lieu of New Brunswick's revenue from the lumber on her own lands, but the several Governments of the Province have thought differently, for they have not only accepted the \$150,000, which represents the loss sustained by the Government in those days three times over, but they afterwards levied a stumpage tax and have steadily gone on increasing it, so that now they receive from stumpage more than they formerly received from the export duty. They had the power to do this but there is a suspicion that it was not good policy and that if the Provincial expenditure had been kept within reasonable limits they need not have resorted to the stumpage and especially to repeated increases of the rate. However this may be—and it is a domestic question for home settlement—it is

now certain that the lumbermen of the Province, who are largely manufacturers of their own lumber, for which they have to find a market where they can, claim that they are heavily handicapped by the stumpage fees and are unable to conduct their business with any profit to themselves with such a burthen on their backs, especially in these times when the lumber market in England is so demoralized. As lumbering and the manufacture of lumber constitute the great industry of New Brunswick; as this interest permeates every branch of trade and effects alike the farmer, the laborer, the mechanic and the merchant, the lumbermen's complaints will, no doubt, receive respectful consideration from the Government and the Legislature. If this were a question of whether a few persons engaged in a particular business should sink or swim, the Government might not be induced to modify their policy as they might assume that others would step in to take the place of those who might drop out. But this is not the fact or the reasonable assumption here. Not a few persons only but scores of thousands feel the effect of the depression and the burthens. All those who have invested capital in the lumbering on the public lands are complainants. And it may be that the existence of many business houses, carrying on extensive enterprises, is staked on the decision of the Government.—*Montreal Herald*.

BOILER CORROSION BY SULPHUR.

A French commission on the inspection of boilers and the investigation of accidents resulting from their explosion, had its attention drawn to the explosion of two boilers, one at a colliery in Nièvre, and the other, at the Ougree Iron Works, in Belgium. In both cases the accident was attributed to the destructive effect on the metal of sulphuric acid. In the case of the boiler at Nièvre, it contained large scales of oxide of iron, and also sulphur in some form of combination was found on the corroded parts. At the Ougree Works, sulphuric acid was actually found in a free state as well as in the form of sulphate of iron. Two samples of the soot left by the smoke in the parts destroyed were analyzed. They gave sulphate of iron, between 52 and 53 per cent., and free sulphuric acid in one sample 1.42 and in another, nearly, 12 per cent. The action was thus explained: The soot was deposited during the working of the puddling furnaces in an entirely dry state, but when the fires were put out, the soot, loaded with moisture, entered and combined with the metal into a paste. The oxidation of the sulphuric acid then occurred, and the iron was in this condition to be attacked. The corrosion action was thus going on constantly when the boiler was not at work, and in parts that could not be cleaned out, while no action occurred where the soot had been cleared away.