

without throwing efficiency to the winds. Eight supervisors cannot get the maximum service from 286 men over such an immense territory as 10,000,000 acres, and the best proof of this statement is the annual report of the Department of Lands and Forests.

Is 300,000 Adequate?

Ontario spends over \$300,000 annually for forest patrol, including expenditures by the province and by limit-holders. Is this adequate?

The inadequacy is not in the amount expended, but in the thing it buys. Money can be wasted with as much facility in a forest as in a town. Ontario is not getting, by any means, all that it is paying for in the way of forest fire protection.

The best protected forest area in Eastern Canada is probably the 24,000 square miles in Quebec under the care of the St. Maurice and the Lower Ottawa Forest Protective Associations. These were organized by limit holders on business lines, with competent managers, and a plan whereby one inspector is assigned to about ten men.

Their patrol, including time and money spent on building lookout towers, trails, camp fire places, repairing telephone lines, etc., costs about a quarter of a cent per acre per year. Relatively speaking, the results are excellent, and justify a much heavier expenditure for a correspondingly more complete fire protection service. With the expenditure per acre incurred in Ontario, practically complete protection from fire can be secured.

At a quarter of a cent per acre, the entire 10,000,000 acres said to be under license in Ontario could be patrolled for \$25,000 and patrolled about as thoroughly as the lands of the private associations in Quebec. The Ontario licensees now pay \$70,000 annually for a protective service that, frankly speaking, is not in the same class. The Quebec associations are far from full-grown, but they avoid at least the costly overlapping incident to the "every man for himself" plan to which the Ontario licensees are bound. Some of the Ontario licensees pay as high as \$5 per square mile for fire patrol per year. The highest assessment yet made against the members of the St. Maurice Forest Protective Association in Quebec is \$1.92 per square

mile, but that low rate is obtained by unification of ranger control, the mapping of patrol districts on economical and proper lines, and improved methods of communication and transportation, through the construction of trails, telephone lines and lookout stations. In Ontario, however, every licensee shifts for himself. Co-ordination of patrol service is practically unknown, and the limit holder pays dearly for a small degree of protection, or sometimes fails to get it at all on account of the fire ranger being used primarily for other work. Apparently only in the parks and in some of the reserves has even a small beginning been made in the construction of trails, telephone lines and lookout stations. And yet this mechanical foundation is absolutely essential to any well-organized forest fire protection service. Surely the interests of the wood-using industries of present and future demand that the Ontario Government organize the licensed lands for patrol purposes. It does not seem an exaggeration to predict that if such action were taken, the amount of protection to the best timber in the province would be quadrupled, without a penny of additional cost to either licensee or taxpayer.

On Unlicensed Lands.

The situation on unlicensed lands is far worse than on licensed lands. The Dominion Forestry Branch estimates that Ontario has 70 million acres of land, containing more or less merchantable timber, in addition to a very large area which is relatively non-productive on account of muskeg, repeated fires, climatic conditions, etc. Of this probably about 20 million acres are included in forest reserves, parks and timber limits, leaving something like 50 million acres of unlicensed Crown timber land not included in parks and reserves, and exclusive of non-productive areas such as muskegs, lakes, areas repeatedly burned, and lands too far north to produce timber of commercial value. On this vast area, there is a very large amount of merchantable timber, largely pulpwood, which has not been placed under license on account of relative inaccessibility to transportation or for other reasons. Enormous quantities of timber have been destroyed by fire, and great areas have been rendered unpro-

ductive by the great conflagrations which have swept over them time after time.

Each year, lands under license are surrendered by the limit-holders, usually because the timber has been cut out. In other cases, the area under license is reduced because of failure of the limit-holder to pay ground rent or stumpage dues. To a certain extent, these losses are made up by the issuance of licenses covering new areas. However, for years past, there has been a steady decrease in the total area of Crown lands held under license. The reports of the Department of Lands, Forests and Mines show, for instance, that in 1912 there was a net decrease of 996 square miles from the total area under license in 1911. The reduction in 1913 was 891 square miles and in 1914, 184 square miles. In 1915, the reduction was 1621 square miles.

The rapidity with which cut-over lands in Ontario are being surrendered to the Crown is shown by the statement of the Department that 307 square miles were surrendered, as cut out, in 1912. In 1913, 1914 and 1915, the areas so surrendered were 257, 1,111 and 602 square miles respectively. New licenses were issued in 1913, 1914 and 1915 covering 100, 500 and 312 square miles respectively.

A Losing Deal.

It is perfectly obvious that unless the burned-over and cut-over lands, including those surrendered by license holders, are allowed to restock naturally, so that they can in the course of time be cut over again, the lands fit for cutting and of reasonable accessibility will ultimately become exhausted or approximately so. When the pinch begins to be felt, to the extent that new areas of merchantable timber, of suitable accessibility to transportation, can not be located for the issuance of new licenses, there will be an increasing tendency toward the reduction of the forest revenue of the province. During the past ten years, these revenues, which go into the provincial treasury and relieve direct taxation to that extent, have averaged between a million and a half and two million dollars annually. During 1903, 1904 and 1905, due to the extensive sale of new timber limits, they ran well over two million dollars annually. Since Confederation,