

acres are covered by fires of less individual importance, but which in the aggregate are rapidly depleting our forest resources. From 1921 to 1925, 709,517 acres of merchantable timber were burned over annually, and the average amount of timber destroyed annually is estimated to be equivalent to 3,900,000,000 feet board measure. In addition there were 866,940 acres of young growth and 574,932 acres of cut-over land burned over, on which the increment of perhaps 30 years, on the average, was destroyed.

Speaking generally, there are two annual periods in Canada when the forest fire hazard is highest—in the spring, after the disappearance of the snow, when the forest floor is dry and the green underbrush has not yet developed, and again in the fall when the green growth is dead and the ground is covered with dry leaves. Statistics collected by the different government administrations and the Quebec protective associations show that over 95 p.c. of the fires of known origin are due to human carelessness and therefore preventable. Campers, settlers and railways are responsible for most of the fires whose origin is determined. Other causes, including lumbering operations and incendiarism, account for small proportions, and only a few are attributed to lightning.

Losses through Insects and Fungi.—From 1912 to 1923 the spruce bud-worm caused tremendous damage to the spruce and balsam fir forests in eastern Canada. In Quebec, it was estimated that 100 million cords of pulpwood were destroyed by this insect, and in New Brunswick the loss was placed at 15 million cords. In this region the active stage of the infestation is now practically over, but the insect is now causing damage in Northern Ontario and Cape Breton island. Other insects, though not as destructive as this one, entail a heavy drain on the forest. While the attacks of fungi are more insidious, the loss caused by the various forms of rot and other fungous diseases is probably not less than that caused by insects under normal conditions. The butt rot in balsam fir is especially prevalent, and the value of the hardwoods is also greatly decreased by rot. Poplar and white birch seldom reach over 10 inches in diameter without considerable decay, and, since these species form such a large proportion of the young growth, the loss, though it has never been computed, must be very great.

Summary of Losses and Increment.—The annual consumption of standing timber for use amounts to about 2,800,000,000 cubic feet. At a very low estimate, fires destroy annually about 750,000,000 cubic feet of merchantable timber and the young growth on 1,500,000 acres of various ages, representing the annual growth on 25 to 30 million acres. The destruction occasioned by the spruce bud-worm averages 1,345,000,000 cubic feet per annum, besides the injury from bark-beetles and other insects. The loss due to fungi and windfall is not known, but is undoubtedly large. It may be safely estimated that the forests of Canada are being depleted at the rate of upwards of 5,000,000,000 cubic feet per annum. With about 534,000,000 acres of young, growing forest, an average annual increment of 10 cubic feet per acre would cover this depletion, but in view of the destruction of young growth which occurs and the deterioration of the forests and the soil, caused by repeated fires, there is little hope that this increment is being produced at the present time throughout Canada, although particular areas are producing greatly in excess of this quantity.

8.—A Sketch of the History of the Canadian Lumber Trade.

An article on the above subject was contributed by A. R. M. Lower, M.A., of the Department of Public Archives, to the 1925 edition of the Year Book, where it appears at pages 318 to 323.