

of young growth. The annual loss due to insects and disease is estimated roughly at 700,000,000 cu. ft., making a total annual depletion of 3,986,000,000 cu. ft. of standing timber.

**Increment.**—Investigations conducted in the various forest regions indicate that the natural reproduction of the principal species, both softwood and hardwood, is adequate to establish new stands, unless the forest has been subjected to very severe and repeated fires. Fire or the exclusive exploitation of one or more species may alter the composition of the stand temporarily and may cause local shortages of those species for a time, but natural reproduction can be depended on to replace them over a period, provided seed trees are left. Artificial reforestation by seeding or planting has a definite, if limited, place in Canadian forestry in the rehabilitation of badly devastated areas, in the afforestation of lands mistakenly cleared for agriculture and in the establishment and improvement of farmers' woodlots and shelterbelts.

It would therefore appear that there is sufficient timber of merchantable size to maintain the present annual cut and a reasonable amount of depletion from other causes until sufficient young growth attains merchantable size to meet the requirements. However, it must be remembered that it is necessary to have supplies of the kind of timber that industries require, located where they can be cut and delivered to the manufacturing plants at a cost that will enable products to be sold at a profit in the markets of the world. Then, too, the timber should be distributed in succeeding age-classes so that there will be a continuous accretion of merchantable timber.

*Influences Operating Toward a Sustained Yield Basis.*—During the past two decades public education in fire prevention has made great progress and the efficiency of the fire control conducted by governmental and private protective organizations has increased to such an extent that annual losses from fire have been greatly reduced in spite of increasing hazards. That there is still room for great improvement in fire protection is evidenced by the fact that during the ten years 1929-38 the records show that the average annual area of forest burned over amounted to 1,716,000 acres, including 551,000 acres of merchantable timber and 1,165,000 acres of young growth and cut-over land, involving the destruction of 833,000,000 ft. b.m. of saw timber and over 2,000,000 cords of other timber.

Another strong influence is the growing recognition of the importance of the young growth. Many stands of "second growth" that have come up after cutting or fire are now reaching merchantable size and are beginning to attract attention. Anticipating the need for practical guidance in the management of these accessible young forests, the Dominion Forest Service is devoting the major efforts of various forest experiment stations to the improvement of the quality and the acceleration of the growth of young stands that nature has established. Operators, too, are showing more interest in putting their operations on a self-sustaining basis and working plans are being developed with this in view.

Changes of great significance are taking place in the uses of wood that permit of the utilization of sizes and qualities that are unmerchantable for sawn lumber.