

veterans were 316 and 70 years old. The scattered veterans were 356 years old, and they doubtless represent the remnants of the stand burned 316 years ago. One finds some trees 155 years old, but it is evident that they established themselves beneath an old stand, for they were suppressed for the first 55 years, being only two inches in diameter at that time. Something happened 100 years ago to release them, for they began to grow rapidly a few years after that date. It may have been the fire recorded by the scars 100 years ago on adjacent trees, although the stumps of the 155-year-old trees do not show fire scars of that date. Nearby stands, however, are 100 years old, and the effect of the fire recorded 70 years ago is to be found in adjacent stands of that age.

YOUNG FORESTS

Under the heading of young forests are included all those areas where the young trees of the commercial species are in the process of reproducing a forest. A new forest may be in process of re-establishment beneath an old forest or upon areas wholly or partially cleared by fire or by logging or by both. Practically all of the reproduction of Douglas fir forests is taking place on areas cleared by fire alone or by logging and fire combined. A new hemlock forest, however, may be established beneath an old fir forest. This is because young hemlock trees can endure shade, while young fir trees will not grow well if shaded by the crown cover of larger trees.

The object in this section of the report is to show the decrease in the number of trees per acre as the stands grow older. The death rate is greater, the greater the density of the stand, yet the denser the young stand, the better will be the quality of the lumber produced by the surviving trees. As the shade is so dense that the side branches are killed off early in the life of the tree, the wood laid down on the stem after this is free from knots, hence the quality of the lumber is improved. Crowding also forces the young trees to grow more rapidly in height and more uniformly in thickness, with the final result of more logs to a tree and less taper in a log.

Dense young stands are necessary to produce the largest quantity of the best quality of commercial timber. For this reason the agencies which bring about dense stands should be encouraged and those which tend to retard or destroy their development should be eliminated.

For convenience of presentation, the description of the forest reproduction will be given under three sub-titles, namely, that in which Douglas fir predominates, that in which hemlock is the most abundant, and that in which cedar is the most numerous.