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mile from seed trees as adjacent to them. It seems hardly possible that wind could distribute the seeds so evenly in one season, since practically all of the trees were of the same age. Moreover, several measurements were made to determine the distances to which seeds of fir were normally carried by the wind. The result of one of these may be given as a typical example. The area had been burned twice. eleven years and four years ago, and was uniformly covered with a light stand of bracken fern. A line was run approaching the green forest from a point one-fourth mile (20 chains) away and the seedlings counted on a strip 33 feet wide. Twenty to fifteen chains from seed trees, the seedlings occurred at the rate of 12 per acre; 15 to 10 chains, 50 seedlings per ac e; 10 to 5 chains, 500 seedlings to the acre, 5 chains to the edge of the forest, 3,000 seedlings per acre. None of the seedlings were over four years old. If this be taken as typical, really efficient seeding of the ground does not take place at a distance of more than five chains (20 rods) from seed trees. These were medium-sized healthy trees on the margin of a forest well exposed to the light, the area seeded was in the leeward direction of the prevailing winds, the condition of the soil and soil cover furnished favourable conditions for germination, yet with several seed crops the trees could not raise more than 3,000 seedlings per acre at a distance of twenty rods, whereas the stands mentioned above had over six times as many trees at a distance twelve times as far from seed trees.

These facts, and the results of the investigations in the state of Washington, denote the probability of the dense stands of Douglas fir reproduction arising from several seed crops accumulated in the soil. The important point of these investigations is this: Where the seed trees have been killed by the first or second fire, the dense stands of young trees killed by fire cannot be replaced by natural methods. As stated above, one-half of the area logged over in the past twenty years is not now supporting adequate reproduction of commercial species because it has been burned at least twice.

Alder—The presence of alder, so commony distributed on the seaward-facing slopes, usual; acts as a deterrent and often excludes the reproduction of Douglas fir. Only once was fir found to be reproducing itself in potentially commercial quantities beneath alder, and this at the rate of 1,600 small trees on an acre, although the alder formed a complete crown cover. Fir is frequently associated with alder, however, but it occurs in groups or singly in the more open places. The fir is always conspicuous in this association, for, although it may be the same age, in the older stands it much surpasses the alder in height; also, as the