

dark green of the fir foliage contrasts sharply with the lighter green of the alder foliage, it can be seen from long distances.

As stated above, the best reproduction of cedar was found under the protection of alder stands. A few of the sample plots may be described. Beneath alder twelve years old, cedar occurred at the rate of 2,000, fir and hemlock each at the rate of 160 per acre. A strip was run from the bottom to the top of an alder-covered slope, the alder being sixteen years old. At the bottom it formed a complete crown cover, and there were beneath it 3,700 cedar on an acre. About half way up the slope, where there were frequent open patches in the crown cover, cedar occurred at the rate of 1,260 per acre, fir 1,000, and hemlock 240 on an acre. Near the top of the slope the alder formed not more than one-half the crown cover and there were 1,400 fir, 940 cedar and 20 hemlock on an acre. As the alder disappeared the fir became more abundant, until finally it reached 2,200 per acre. In another place beneath a complete crown cover of alder 24 years old, were found 86 cedar, 28 hemlock and 8 fir on an acre. These were sixteen years old. The area also contained 24 fir trees, the same age as the alder, which surpassed it in height by twenty feet. One often found more than twice as many dead as living cedar trees beneath the alder, indicating that the shade was too heavy.

No sample plots were made in the younger stages of hemlock reproduction beneath alder, but their presence was frequently noted. In a stand twenty years old hemlock occurred at the rate of 800, balsam 200, and fir 60 per acre. Beneath another stand of alder 25 years old there were 1,600 hemlock, 1,280 cedar, 40 fir and 10 spruce saplings on the average acre.

On flats not far above tide-water and along streams alder stands, with their under-vegetation, occur in such density and luxuriance of growth as entirely to exclude the reproduction of commercial trees. Often a secondary cover of vine maple and a third layer of bracken fern or salmon berry shut off most of the light which gets through the crown cover of the alder.

*Salal*—An undergrowth of salal is found almost everywhere in the more open forests; it does not occur as a rule beneath the dense second growth stands, and it does not usually form a complete cover on areas severely burned. It seems to grow most luxuriantly in conditions of medium shade. Light ground fires seem to stimulate its development and heavy fires to retard it. When not much more than a foot high, and when there are spots of bare soil or patches of moss, it makes favourable conditions for the germination of all the commercial trees. For example, a square yard plot containing 150 shoots of salal had