

manufacture of pulp being the major industry, large trees are not necessary; hence a rotation or growing period of eighty years is strictly adhered to. The matured stands are cut clear and the clear-

are taken a large amount of windfall will occur, causing the local market to be overstocked. This difficulty is overcome by what is known as a cutting series, an arrangement of the stands and age classes in consecutive order. The forests have, as a consequence, the appearance of a flight of stairs.

Saxony is particularly famous for its efficiency in forest finance. Complete records have been kept of the forests since 1816, so that statistical material is available in Saxony better than anywhere else in Europe. The value of the forest has increased in the course of the last century at a compound rate of 3 per cent per annum, thus doubling every twenty-four years, while the woods were furnishing a surplus cash dividend of $2\frac{1}{2}$ per cent on an annual average.

The famous Black Forest, situated in the highlands of Baden and Wurtemberg, presents an entirely different plan of management, though the species are practically the same as in Saxony. Spruce and fir predominate.

Owing to the absence of the pulp industry in this vicinity the trees are left to grow to a larger size, requiring a rotation varying from 100 to 120 years. Very little planting of seedlings is done, as reforestation is obtained by natural seed regeneration. This method of propagation, known as the shelterwood compartment type of regeneration, was originated by George Louis Hartig, and is in vogue in many parts of Germany.

The idea is simple, and consists merely in removing a stand in three different cuttings, two partial and a final, within a regeneration period of twenty years. The first cutting is a preparatory cutting to obtain proper soil conditions, the second is a partial cutting to give more food to the oncoming seedlings; the third, or final, cutting takes place after the regeneration is well under way. The result is a close approach to the primeval forest. The average acre's yield at maturity is 25,000 feet, board measure, which sells at an average price of \$20 a thousand.

In the show forest of Count Bergheim, at Weinheim, is a plantation of sequoia (California big tree) fifty years old. Judging from the wonderful results of this plantation, it is surprising that this species is not cultivated on a larger scale. An accompanying picture shows one of the trees in the plantation which calipers thirty inches at breast-height.



Eighty Year Old Spruce in a Saxony State Forest. Smaller Second Growth in The Background.

ed areas are planted up immediately with about 3,000 seedlings per acre, at a cost of \$8 to \$10. Of these 3,000 seedlings, only about 130 will reach maturity, the rest having been removed from time to time by way of thinnings, thus furnishing additional revenue.

The prices obtained from the sale of the different wood products seem to us phenomenal. Fifteen dollars a cord is paid for pulpwood and from \$25 to \$35 a thousand for spruce sawlogs in the woods. The logs are all peeled immediately after cutting and the brush and debris scattered over the ground, enriching the soil by their decomposition.

It is interesting to note the measures that are taken to minimize the damage by wind. Spruce is a flat-rooted wind-weak species, and unless preventive measures