

preserved by the King of Bavaria. We were met at the station by one of the forest guards, who took us through a portion of the forest to the nursery, where his chief, the Assessor, met us. This was our first experience of an artificially planted forest and we were much impressed by the extraordinarily regular growth of the trees — acres upon acres of tall straight stems of clean growth, free from all lower branches.

There was no underbrush of any kind, nothing but tall stems about four to five metres apart, growing out of a carpet of damp moss, with a perfect canopy overhead without gaps or breaks. It is a very impressive sight to see so regular a crop of timber, practically all of one species (spruce in this case).

The roads are carefully laid out at right angles and at regular intervals to give convenient access to all parts of the forest.

To describe the appearance of this forest it is necessary to say a few words on the rotation system, which is so universally practiced in scientific forestry.

This principle is founded on the clean-cutting of a fixed portion each year and its immediate replanting, either artificially or by natural regeneration. To carry this out, in a logical manner, it is necessary to cultivate the varieties which mature within a certain time. The usual practice with spruce, in Bavaria, is to take from 90 to 100 years as the time necessary for a crop to complete the quickest and consequently the most profitable portion of its growth, by the end of which period it will have reached a diameter of sixteen to twenty inches at the butt. If left longer the trees would still increase in size, but at a rapidly diminishing rate.

Having decided upon the variety and the time required for its development into profitable timber, the next step in creating an artificial forest on the rotation system is to plant an equal portion each year un-

til the whole is planted up in the period allowed for the timber to reach its profitable development. Thus if you have 1,000 acres to plant in spruce, which you propose to cut at the age of a hundred years, you would plant ten acres a year, until the whole was planted. The first clean cutting would only begin at the end of one hundred years, when the oldest ten acres would be cut and immediately replanted; every succeeding year another ten acres would be cut and immediately replanted. Having once established your forest, you may thus count upon ten acres of fully developed trees every year, for all time to come.

The above is a brief statement of the rotation principle, leaving out of account such questions as the number of trees to be planted to an acre, the extent to which, and age when, thinnings should be made and whether the replanting should be done artificially or by natural regeneration.

Forstenrieder Park is a very perfect example of a forest artificially planted on the rotation system. Trees are seen at all stages of growth, from fully developed trees, ready to cut down, to seedlings only just planted.

Forest Planting.

The young trees are reared in a nursery in the forest itself, under as natural conditions as possible. They are planted out in rows, at the age of two to four years, and at regular intervals of four feet each way, or about 2,700 trees to an English acre. The object is to create a perfect canopy as quickly as possible, the branches meeting at an early age and the upward race starting at the outset. As time goes on the stronger trees overtop and crowd out the weaker ones, an overhead canopy is formed which causes the lower branches to die off, and tall clean stems are the result.

Thus, in a German forest, nature does its own work and no artificial