

leaves overhead will be dense and the lower parts of the stems beginning to be clear of branches when it is time to thin; and when that time arrives it will be well for the farmer to remember that it is possible by injudicious thinning in a few minutes to undo the work of years.

In considering this phase of managing the plantation, it will be well to bear in mind always that the ash and the elm are the longest-lived trees, will be the most useful on the farm in the long run and are to be considered the permanent trees. Where they are, therefore, likely to be over-shadowed by some more vigorous and less valuable neighbours, like maple, cottonwood or willow, it will often pay to sacrifice a few of the offending branches, or even cut down some of the trees altogether. Cottonwoods, willows and Russian poplars are best for rapid height-growth in order to give a shelter as quickly as possible, and the chief use of maples on a plantation is to shade the ground and save work to the farmer in the way previously referred to. This is the reason why plantations always have a plentiful supply of maples; and while, of course, the maple grows up to be a useful tree, still when it comes to thinning time there will usually—at first, at any rate—be a good many more maples taken out than anything else to allow the more useful trees to get a chance.

Altogether, thinning is a subject which requires much judgment, and it will be well always to remember that there is one safe rule in thinning and that is: 'Do a very little at a time.' It is easy taking out another tree at another time, but once a tree is out you cannot replace it.

THE USE OF WILLOW AND POPLAR CUTTINGS.

After a farmer has a plantation on his land consisting of a mixture, among others, of willow, Russian poplar and cottonwood trees, he has in the cuttings obtainable from these a supply of planting material which he can use to the greatest advantage in extending his plantations as much as he wishes.

Cuttings are made in the spring by dividing the small twigs of the previous year's growth into pieces 8 to 10 inches long. They may be from the thickness of a lead pencil up, and in preparing them care must be taken to make the cuts without splitting the wood, otherwise they will not grow.

Small lots may be made and planted just before growth begins in the spring, but if large quantities are required it may be necessary to prepare them before spring opens and store them till planting time. They can be kept quite safely in such cases by being packed away in the cellar in a box among damp moss or moist sand. They should always be planted deep, leaving about an inch above the surface of the ground.

Plantations raised from cuttings should always contain a large percentage of willow, as this tree acts in some measure as a soil cover to shade the ground among the more open-crowned poplars. A better mixture will be made by adding about 30 or 40 per cent of maples, or box-elders. The maple is a better soil cover and gives correspondingly better results in the plantation, but it, like ash and elm, cannot be raised from cuttings. These varieties are propagated from seed only.

GAPS IN PLANTATIONS.

Occasionally gaps are made in a plantation in the first year or two of its growth by the death of some of the trees. These vacant spaces should be filled up as soon as possible, and if seedlings of the kind forming the row are not available cuttings of Russian poplar, cottonwood and willow should be used instead. The fact that they are of a different variety from the greater number of trees forming the row is of very little importance. What is important is the covering of the ground with trees as soon as possible, so that the moisture may be preserved. Complete rows of the same varieties may be of importance in an orchard, but this is not the case in a plantation, which should not be looked upon as so many trees of so many different kinds. It is a planta-