the smaller trees that would stand upon the same space, and planted at suitable distances to make a thrifty growth, then the large trees should be cut away, and their place supplied by smaller trees; if the object be to get the greatest amount of wood. But if the trees possess any particular value for their fruit, or will continue to increase in value by age, without detriment to the timber already formed, as would be the case with pines and cabinet woods, then it will be more profitable to continue them in existence. At the same time it must be remembered that, if the trees stand in a grove or timber belt, they will greatly retard the growth of the small trees which are beneath them.

This rule will be found changing to suit all kinds of soil and timber; and will indicate to the grower that every tree that shows signs of decay, should be at once cut down, to make room for others. Also, that in most cases, for mere fuel, the maximum of wood producing property, in our native forest trees, will be reached between 20 and 30 years after the trees are firmly established. Eighteen years is the time allowed by law in France, in which owners may cut over their wood-lands. But experiments made in Massachusetts, have proved that 20 to 30 years is much preferable. We have made our estimates for 25 years.

When trees are cut off in the winter, they will send up sprouts from the roots, except such trees as never do sprout. Also by cutting in the winter the small trees which are growing on the ground, receive the sun and commence their vigorous growth in the spring of the year. Trees cut in the summer, or even after vegetation has commenced, and until some time after all vegetation has ceased will be certainly killed. The young trees are also likely to be killed at that time by being broken down, and damaged at a time that will kill them.

In cutting down as well as in trimming forests or timber belts, all the chips and brush should be removed from the ground. This fuel could be either bound in bundles, or cut short and put in baskets or boxes for convenience in handling, and be all sold by the pound as is done in France and some other places. It would make excellent kindlings at all times, and in summer would make a fine quick fire, and thus save much wood that would be otherwise used. Such fuel would find a ready market, as soon as its merits were understood; and machinery might readily be adapted to cutting and preparing the brush.

PROPOGATION OF TREES.

In this report, a scientific or elaborate description of the different methods of growing trees cannot be given. All trees may be propogated by layerings, many by cuttings, while all our native trees and the more common exotics, valuable for forest trees may be grown from seeds. Valuable varieties may be multiplied and perpetuated by budding, grafting and inarching. All who will give a little attention to the subject can grow them in some of these
ways. The nursery-man succeeds better than others only because he has given the subject more consideration. An acre of trees can be grown with a little different knowledge, but without exercising any more skill than the cultivator would exercise in keeping the same land in corn. The culture of trees in Wisconsin requires no better preparation of the soil in the first instance, and no better after-cultivation, than a majority of other crops.

The cost of producing seedling trees of maple, ash, oak, elm, pine, spruce, tulip, birch, cherry, cedar, and similar trees, whose seeds can be had in abundance for the mere cost of gathering, and without expense for transportation, will not exceed two dollars for 1,000 trees when a year old. This estimate is intended to include the cost of seeds, preparing the soil, hoeing, weeding, &c., for one season. A few others like the hickory, butternut, walnut, beech and chestnut, the seeds of which possess an intrinsic value, would cost as much more than that price, as the seeds are more valuable, and as their bulk and weight would increase the expense of transportation.

Although trees may be grown at the cost named to the grower, yet, no one must expect to buy such trees at the mere cost of raising them; because he who grows trees for sale will expect to make a profit on his skill and labor. These cheap trees are such as are grown in seed-beds, at the rate of millions to the acre, and are taken up the first year for the purpose of sale at that age, or to be transplanted to the nursery row, where they are to stand until they are removed to their final place of growth.

Where rapid and strong growth is required, it is better to plant trees where they are finally to stand, than to make use of the seed-bed and nursery. What may be lost in rent of land, is more than compensated by saving the labor of transplanting, and in amount of growth.

FORESTS AND TIMBER BELTS.

To grow trees in a forest or timber belt from seeds, the land should be well and cleanly cultivated or fallowed the summer before planting, so that it shall be as clean of weeds as possible, and mellow. Before planting it should be marked out, so that there need be no mistake about where every seed is planted, as that will greatly facilitate after culture. Two or more seeds should be planted in each hill or place where a tree is desired, to insure the growth of at least one tree at the point. If more than one come up and grow they can be used to fill vacancies, or sold, as the grower shall see fit. Trees thus grown will send their strong tap-roots deep into the soil, and bring moisture and nourishment from below, as well as from the surface; and thereby they will stand firmer against the force of the winds, than transplanted trees, Such trees will not be retarded, perhaps killed, by the transplanting which the seed bed and nursery process requires, and consequently will never require to be headed back on that account. The labor and expense of transplanting, no inconsiderable item, will be saved by planting the seeds where the tree is to remain. Altogether, a man may better afford to plant and kill