

is often the cause of much after trouble, in bringing back the tree to its proper shape. Cutting off large limbs during the winter season and excessive pruning has the effect of making a broom-like head, by inducing a number of small branches to grow out, rendering the head of the tree impervious to sun and air. As a rule, summer pruning, which is done principally by pinching the growing buds, promotes fruit bearing, whereas winter pruning promotes wood growth. Nevertheless, winter is the season when superfluous branches have to be removed and the excessive growth of the previous season cut back to the required bounds. In removing large limbs, they should be sawed off as near the trunk as possible, beginning on the lower side to prevent splitting, after which the wound should be smoothed with a sharp knife and covered with grafting wax or painted with some of the preparations recommended in Bulletin No. 12. In cutting back the growth of the previous year, the cut should be made close to a bud, generally an outer one, the cut being slightly diagonal but nearly horizontal, so as to offer as little surface as possible exposed. Always use a sharp knife, which should be kept exclusively for the purpose. M. B. Childs, Yakima, in a paper read before the Washington Horticultural Society at Seattle, says, regarding pruning:—

"The first year after setting, head the shoots back from eight to twelve inches, according to the vigour of the growth, those least vigorous to be shortened in the most. Exercise the same care in reference to the terminal bud and number of cut as before. Care and judgment must be exercised in selecting the position of the bud. If straight shoots are desired, cut to inside buds for trees of a spreading character like the Greening; or for compact growers like the Northern Spy, cut to outside buds. It is best to cut outside buds on the side next the wind, in order to throw the growth toward the wind, and sometimes on the opposite side of the same tree it will be necessary to cut inside buds to maintain an evenly balanced top.

"The second year from planting the previous season's growth should be headed back to about twenty inches, the less vigorous growth to be pruned the most. Keep the length of the cut as nearly even as possible, varying, of course, to suit the buds that come in the desired position.

"Remove all cross branches and those having a tendency to grow towards the centre of the tree, except the fruit spurs. These should not be removed, even from the first year's growth. The fruit spurs are thrown out straight from the trees and look like thorns or growth on seedlings. The mistake is often made of removing these, and, in consequence, leaving long, bare poles.

"The third year from planting, shorten back to from two to three feet of previous year's growth. This pruning applies to apples, pears and the plum family. Cherry trees should be dropped from the list the first, and the method of pruning them will not be handled in this paper.

"This is the last of the shortening in on these varieties. With this, the fourth season's growth, the head will be formed, if all has gone well, and with the exception of an occasional refractory branch, which should be shortened in, will not need to be touched.

"The tree is now ready for fruiting. Commencing in June, pinch prune, removing all superfluous growth, and keep the head symmetrical. This