

found in the whole crop picked from the 12-acre sprayed orchard. It will be noticed, by referring to the samples photographed that the spotted apples show a light color while the other two are much darker—a fine high color. This is true of the crop in each orchard throughout.

The only question is as to whether the same results could not have been obtained with a less quantity of material used. With Mr. Johnston it seemed to be not a matter of quantity or expense. It was an experiment he was engaged in and a sure result he was working for.

PRUNING PEACH TREES

THE unusual number of questions upon the pruning of fruit trees and vines indicates that the following report of experiments in pruning peach trees, conducted by Prof. J. C. Whitten, of Missouri Experiment Station, and published in the Experiment Station Record of September, will be of interest:

The experiments followed the severe winter freezes of 1898-99 in pruning back peach trees. The cold had killed practically all the fruit buds, while the wood of the trees was badly discolored to the heart. In the experimental work some of the trees were left unpruned for comparison. With others the new wood was pruned back about half, as is the customary yearly practice. In the majority of cases with the older trees the limbs were cut back into 3 or 4-year-old wood, leaving arms in the main branches 3 to 5 feet long. Most of the pruning was done in February, soon after the freeze, though in some instances it was continued until the leaves were just starting. The following spring the trees which were not pruned at all started into leaf growth first. They made a feeble growth during the summer, the growth being confined principally to the tips of the branches. There was almost no indication of growth in the body of the tree. Trees that had been pruned back

severely were rather tardy in beginning growth in the spring. When growth finally started, however, it was very vigorous and continued throughout the season, some 6 to 9 feet of new wood being made, which ripened up well during the season. Old trees that were cut back to the ground leaving only a stump died in many cases. Those that did sprout made an unsatisfactory growth. Trees pruned back by cutting away 1-3 to $\frac{1}{2}$ of the 1-year-old wood also made unsatisfactory growth, but little better than where the trees were left unpruned entirely.

The best results were secured in pruning back into the 2 to 4-year-old wood, the severity of the cutting depending upon the age and vigor of the tree. It was observed that trees with smooth, bright looking bark sent out branches from their trunks more readily than those whose bark was thick, rough, and dull colored. There was practically no difference in the results obtained in cutting back the trees at different times from just after the freezing until the leaves had made some growth. In the rejuvenation of orchards thus severely pruned, good cultivation to properly aerate the soil in spring and to conserve moisture during the summer is advised.