Pruning Grape Vines in Summer.

Grape vines are managed in summer in different ways by different men; and when one has read the various methods of summer pruning published in the agricultural papers, he finds the opinions of grape growers so various that he is merely befogged by them, if he is a novice in the business. Even the books published on grape culture are of little value, as they were written from fifteen to twenty years ago, and when our ideas on grape growing were very crude. I will state a few points that twenty-five years' experience have proved to me to be correct, as follows :

1. Thrifty vines, as the Concord, Hartford Prolific and other vines of very free growth, should have trellises ten or twelve feet high, in order to obtain the greatest amount of fruit, after the vines have fruited four or five years; and the summer pruning should consist in cutting away feeble shoots wherever found, thus throwing the vitality of the vines into the stronger canes, which will produce the fruit buds of the next season.

2. Pinching back bearing canes to within a leaf or two of the nearest bunches is of no benefit to the fruit, as the leaves of the canes are the lungs of the vines; and I claim if the vines be shortened in at all, it should be done very moderately, merely stopping the further growth of canes by pinching them off near their ends.

3. In no case should the most thrifty canes be shortened during the summer, as they will be the canes which bear the next year's fruit.

4. As the fruit begins to turn in color, do not remove any leaves to expose the grapes to the sun, as they ripen no sooner by so doing, and the effect of the sun is injurious rather than beneficial, while the removal of the leaves actually retards the ripening of the grapes by checking the flow of sap through the canes, which the leaves regulate according to the requirements of the growing fruit.

5. To produce the best fruit, and in perfection, the small clusters of grapes, when the vines set a great deal of fruit, must be cut or pinched off, leaving but one bunch generally to each shoot or cane. Many vines are often so productive that it is impossible for the roots to afford full sustenance to the entire crop; and in such cases I remove about one half, always leaving the largest bunches, and the result is splendid fruit, while that on vines not so served is of much less value.—*Farmer's Friend.*

Plum Culture.

M. B. Bateham visited the noted plum orchards of the Messrs. Brown, of Huron County, Ohio, the past fall, and he reports in the *Rural New Yorker* that they had planted about 7,000 trees altogether. The greater part of their youngest orchard, two years planted, was killed to the ground by the previous winter—as were several hundred trees of older growth. They have also lost many trees from the same cause in previous years. This winter-killing is not so much in consequence of the severe cold, as the condition of the trees when winter sets in. The mischief is evidently a result of the shedding of the leaves during hot and dry weather in the latter part of summer, followed by the starting of the terminal buds and a fresh flow of sap on account of moist and warm weather early in autumn, leaving the wood sappy during the winter. Frequently it will occur that tufts of new leaves put out at the tips of the young shoots, which continue green until killed by the severe frosts in November. Some varieties, I was told, are more liable to this trouble than others ; but I could not discover much difference.

The remedy, I think, must be found in the choice of soil, or its preparation for planting—to secure such depth as will induce the roots to go deep enough to resist the effects of drought. Or, what amounts to the same thing, have the soil worked so deeply that it will absorb and hold moisture sufficient to withstand drought ; then the leaves will not fall prematurely.

Mulching is another means of contributing to the same end, and will be found immensely beneficial both to plum and pear trees. Apply the mulch any time after the spring rains and surface cultivation, covering the ground with refuse straw, corn stalks, marsh hay, or other litter." The curculio is not considered a hinderance to plum cultivation on a large scale, When plum trees are planted amongst other trees, or only here and there on the ground around the farm, or suburban dwelling, then each tree requires faithful watching from the time the flowers fade in the spring, till the fruit is as large as a pigeon's egg, to prevent the ravages of the curculio. The season for the deposit of the eggs of that insect being over, there is no difficulty with the fruit for the balance of the season. There is but one way to prevent the curculio from doing injury to the fruit, and that is the jarring process. That process is exacting as to time and constant attention, but all who tried it faithfully admit that it has been successful in securing the crop of the trees in a perfect condition, and that it pays. All other methods have invariably failed from some cause or other, and since it was first tried as recommended by J. J. Thomas, in 1845, it has lived and kept its position as the main reliance of the plum grower. We have little confidence in any other plan that has yet been presented to the public.

Paris Green in the Orchard.

Some time since an enquiry was made as to whether there is any way to destroy the canker worm on apple trees. Four years ago they attacked my orchard by millions, and a few days after it looked at a distance as if fire had passed through the branches, not a leaf left. In the orchard I had about one hundred and fifty trees, twenty years old. I had taken great pains with my trees, and they did extremely well up to this time. I felt almost discouraged, and knew of no remedy. After a time the trees all leaved out again, but grew very little that season. The following season the trees were loaded with these pests by billions, so that if one passed under the trees he would be covered with the destroyers and their threads, which hang down with a worm at their ends, about as thick as the warp of open gauze; on these threads they swing as a pendulum when the wind blows, and by these means pass on to the next trees, if near enough. This time, too, they left scarcely a leaf, and then disappeared. The trees leaved out again, but looked weakly, and grew but little. The third season I was on the look out. As the trees leaved I found them again covered. I could stand it no longer, but declared war; bought a hand pump and $5 worth of Paris Green; put a kerosene barrel into my wagon, filled it with water, added one tablespoonful of green to a pailful, gave it a good stirring, and had a man to drive around under the trees and keep the mixture well stirred; I took the pump and sprinkled about a pail, evenly as possible, on each tree. The second day after I operated a second time with a weaker solution and less quantity, as I found their number but few, and those not in good health. The past season I kept a good look out, but failed to find one. I have other orchards, but so far have not been troubled. I keep my war material all ready now; if the enemies appear I shall storm their works immediately. There are a number of orchards hereabout nearly destroyed by the canker worm.—*T. L. G., in Factory and Farm.*

The Grape Mildews.

The warm and rainy weather of the last of June and first of July is especially favorable for the development of the various kinds of moulds, mildews and other species of fungi. Of this group of parasitic plants, the grape vines are specially infested : the two leading species of which are the *Peronospora viticola*, or American grape vine mildew, and *Uncinula spiralis* or "oidium," as it is commonly called. The last is closely related to the *Oidium Tuckeri* which has proved so disastrous, at some seasons, to the grape crop of European countries. The oidium is a surface feeder, never sending its threads deep down into the tissue of sending its threads deep down into the tissue of the leaf. Running here and there over the surface of the leaves, young stems and berries, it gives, while young, a cobwebby appearance to the surface when viewed with a hand lens; but after forming a multitude of spores, to the naked eye it looks as if the surface had been finely dusted with flour. This mildew makes its appearance often quite early in the season, depending upon the weather, and gradually develops itself during the summer months.

The story of the other mildew is somewhat different, it being confined very largely in its action to the leaves, and develops itself very rapidly, usually only upon the under surface. It is, then, a deep-seated parasite, sending its absorbing threads far into the tissue of the foliage. To the naked eye all that one sees of this species is usually some yellowish spots on the upper side of the leaves, and a corresponding distribution of frosty, mouldy places upon the under side. These frosty appearing spots are due to multitudes of threads, which pass through the stomata, and branching in a tree-like manner, bear a spore upon the extremity of each ultimate ramification. These spores, which are formed very rapidly, germinate in a few hours, and thus spread the disease to new spots on the same or another leaf. Besides these aerial spores, there is another kind found towards the close of the season, within the tissue of the grape plant. They are provided with a thick coat of cellulose ; and, as they do not germinate until spring, their special office seems to be to carry the mildew over the dormant and severe months of winter.

REMEDIAL MEASURES.

A mixture of six pounds of potash, two gallons of coal tar, and one-fourth pound carbolic acid, diluted with four barrels of water, has been used and recommended by some. This makes a wash which is applied to the vines. The application of flour of sulphur, either alone or mixed with slacked lime, is the leading and perhaps the most effectual remedy. This can be best distributed by means of a pair of bellows, and should be applied even before the vines show signs of mildew, and thereby avail yourself of the ounce of preventive when it equals a pound of cure. Should the mildew appear, the operation should be repeated two or three times during the year, or as often as a good judgment will decide.

The collecting and burning of the foliage would tend in good measure to diminish both forms of mildew in coming years. But concerted action is required in a work like this, that it may be the most successful; and for this we cannot hope until the grape crop is on the verge of total ruin, and doubtful if then.

As all fungi are lovers of moisture, and flourish only when it is quite prevalent, the using of only those localities for vineyards that are naturally dry, or the thorough drainage of those that would otherwise be wet, would do much to lessen the amount of mildew and do good to the grape vines in other ways than one.

"Early and over-bearing are prolific sources of mildew," and the sharp edge of the pruning knife may do much to keep away these pests. Any culture, in fact, that will secure the most healthy and hardy vines will be one of the best means of avoiding the diseases which might otherwise prey upon them.—*B. D. H., in Scientific Farmer.*

Washes for Fruit Trees.

Insects and mildews injurious to the leaves of fruit tree seedlings and root grafts can be kept in subjection, or destroyed, by a free use of the following combination of lime and sulphur : Take of quick or unslaked lime four parts, and of common flour of sulphur one part; break up the lime in small pieces, then mix the sulphur with it in an iron vessel, pour on them enough boiling water to slake the lime to a powder; cover the vessel close as soon as the water is poured on. This makes a most excellent whitewash for orchard trees, and is very useful as a preventive of blight on pear trees, to cover the wounds in the form of a paste when cutting away diseased parts; also for coating the trees in early spring.

It may be considered as a specific for many noxious insects and mildew in the orchard and nursery; its materials should always be ready at hand; it should be used quite fresh, since it soon loses its potency. This preparation should be sprinkled over the young plant as soon or before any trouble from aphides, thrips or mildew occurs, early in the morning while the dew is on the trees. This lime and sulphur combination is destructive to these nests in this way by giving off gaseous sulphurous compounds, which are deadly poison to minute life, both animal and fungoid; while the lime destroys by contact the same things, and its presence is noxious to them. In moderate quantities it is not injurious to common vegetable life.

Another recipe for a wash for orchard trees is to put one-half bushel of lime and four pounds of powdered sulphur into a tight barrel, slaking the lime with hot water, the mouth of the barrel being covered with a cloth; this is reduced to the consistency of ordinary whitewash, and one-half ounce of carbolic acid is added to each gallon of liquid at the time of application. Apply to the trunk; it will not hurt the branches or foliage if applied to them also.

An experienced fruit-grower recommends the use of the following simple method : He takes lye from wood ashes or common potash, mixes a little grease with it, heats quite warm, and with a little syringe throws it up into all parts of the trees, branches and trunk. It will effectually kill all kinds of caterpillars and worms that are infesting the tree or running over the bark. Trees treated in this manner are exceedingly healthy and vigorous in appearance, possessing a smooth, glossy bark.