

Closely Planted Orchards.

I had no idea when I offered as a lesson for fruit growers the example of the Hudson orchard of 30,000 trees planted on 300 acres, that that example could be made so much of as it has turned out. The more I consider the facts of the case and the criticisms which have been offered in the columns of the Country Gentleman, the more I perceive the great value of the lesson that may be learned from it. The object of planting gardens and orchards is not only that the planters may eat the fruits thereof, but that profit may be made from them. Now, let us look at this question of close planting so far as regards profit, and it will be seen, I think, that McKinstry's method is of the greatest value. An acre may be made to hold 108 trees at 20 feet apart, and only 27 at 40 feet apart. It may be taken for granted that for the first 25 years of bearing there will be no trouble from interlacing or crowding of the trees, and if there should be trouble, that may be easily avoided by proper pruning. Mr. McKinstry has this year gathered from some of his trees planted 20 feet apart 8 barrels of apples per tree. This would make a yield of 864 barrels per acre. At 40 feet apart, the yield at this rate would be only 216 barrels per acre; and few orchardists can boast of more than 8 barrels per tree even at 40 feet apart. Some of my own trees which are 40 feet apart, although loaded until the branches reached the ground, produced less than 8 barrels each, including a considerable proportion which were blown off by high winds and spoiled, while some others at 24 feet apart bore equally well.

Those of my trees which are 40 feet apart are more subject to injury from storms than those of Mr. McKinstry at 20 feet apart, for these mutually protect each other. So far as to the question of profit; now as to some other points. Young trees need protection, and at 20 feet apart this is gained without any drawback for 20 or 25 years at least. After that time, if necessary or desirable, every alternate tree may be grubbed out, and a new one planted to take the place of the old one, and renew the orchard when those that are left shall be worn out, and themselves need removal. Again, at 20 feet apart, and with more than 100 trees on an acre, the labor of attending to them is greatly reduced in proportion. The objection in regard to this so-called close planting would be reduced at once if those who object could but see an orchard so planted. Part of Mr. McKinstry's orchard is planted with apples and peaches alternately, and this gives ample space for the apples, and secures protection for the more tender peaches, and those at 10 feet apart are intended for shelter and protection, and may be thinned out when fully grown. On the whole, the discussion which has grown out of my first communication has doubtless furnished what I hoped and thought it would, viz., a valuable lesson for fruit growers, and this lesson, I am sure, may be studied, and the example be followed with profit.—[Cor. Country Gentleman.

Woodpecker vs. Apple Worm.

If woodpeckers are plenty in the orchard, they will take care of the apple worm, even when cuddled up under the paper bands, dreaming of wings, and do away with the necessity of examining the bands every week or two. At first I thought the codling moth had hatched in advance of our bi-weekly visit, and escaped the rub of the smoothing-iron by boring through the bands instead of escaping from under them; but the rattling stroke of the red-headed woodpecker a few trees off, and the similar peck of his industrious little white and black-backed downy cousin (*Picus pubescens*) told the story of the holes, and promised that just in proportion as their little crops were filled, the apple crop would prosper. From some bands every larva and pupa had been dislodged by our thorny-tongued benefactor; and if any were present where he had been, they had evidently come since his departure and before his return. A barrel of apples for every one is a small valuation. If swine and sheep can be kept in the orchard, so much the better, but in any event I mean to try to keep in the woodpeckers and keep out the gunners, and ask and expect that every tree will cease to be a wormy nuisance, and "comfort me with apples" fit for other uses than vinegar and the still.—[N. Y. Tribune.

Mr. Door, of Lenawee Co., Mich., says that he has found peas and clover the best crop to raise in an orchard, provided plenty of gypsum (land plaster) is used on the clover.

The War with Cabbage Pests.

In old soils especially the cabbage has a tendency to form club-roots or (as this well-known disease is sometimes termed) fingers and toes. It is a veritable plague, and not only occasions wide gaps in the fields, but often destroys an entire crop. The generally-accepted belief is that club-root is due to the attacks of the cabbage-grub. By others the disease is said to be produced by a microscopic parasite which develops with greater rapidity in moist than in dry soils. Burning the affected roots and changing the crop for a few years is the recommended remedy.

Farmers in this country have experienced relief from grubs at the roots by loosening the earth close to the roots with a hoe and pouring in about the root, in near contact with the plant, a gill of soft-soap and water two or three times during the season. The solution consists of one part of soft-soap to twelve parts of water. Weaker suds poured on the top is claimed by some gardeners to destroy the green worm.

A good method of preventing the inroads of the cabbage-grub is to make each plant unpalatable to the grub. According to the Kansas Times this is done as follows: In the spring procure some fresh-burned lime, let it become air-slaked, then mix it with an equal quantity of soot. In planting the holes are made with a trowel in the usual way, each plant is dropped into its place and an inch of soil put over the roots; a good watering is given first, then a moderate handful of the soot-and-lime mixture thrown in and the hole filled up with the remaining soil. Equal parts of soot and fine garden-soil mixed with water to the consistency of thin mortar, with the plants dipped into the mixture up to the base of the leaves previous to planting, is also advised as a preventive to clubbing. Wood-ashes mixed with water and poured into the holes has been tried with success.

For cabbage-worms Professor Riley recommends hot water judiciously applied from a watering-pot. This must be done with caution, as it is liable in careless hands to do more harm than good. The Professor also advises, for the same purpose, applying repeatedly a solution of whale-oil soap and water in the proportion of one pound of soap to six gallons of water. Pieces of boards raised an inch above the surface of the ground afford an opportunity of examining and destroying the transforming larva under them once or twice a week.—[N. Y. World.

Coal Tar for Insects.

An enquirer asks, "in using coal tar for insects on apple trees, how long and how often do I burn? Will it affect the codling moth?"

In answer to this I will state that I never made it my special business to smoke apple trees, but smoking curculio out of plum trees has been my special effort and object in using coal tar, and in this I have been entirely successful, and in passing among my apple trees, to reach the plum trees, I smoked about a dozen apple trees that were loaded with fruit, and the apples from these trees were free from the codling moth, while all my apple crop, with these exceptions, were terribly infested with these worms.

I would say, for the benefit of the enquirer, procure some tar from a gas house. Put a part of it into a pan; to this fasten a wooden handle, so as to get four feet away from the smoke. Take a shaving and a match, and he will soon have a dense smoke. With this pass under the tree, and my word for it, no insect that he ever saw will stay in the tree five seconds to breathe such an atmosphere. The stench of the smoke will remain in the foliage and limbs of the trees for two or three days, unless washed off by rains, and so long as it does remain no insects will return. One or two minutes' smoking under each tree is quite sufficient. Hold the pan low enough so as not to burn the lower limbs, and carry it so as to smoke the entire tree.

I will leave entomologists to tell at what period the various insects are likely to enter the trees to commence their depredations, and that is the time to commence to smoke them out.

I do earnestly hope that many orchardists will try this remedy, and if it proves as successful with others as it has with me, let us make it as widely known as possible.—D. W. K., in Prairie Farmer.

The curculio commences to puncture fruit soon after it is formed, and attention should be paid to their destruction until the fruit is nearly full grown.

The Yellows in the Peach-tree.

The important subject of yellows in the peach was introduced at the annual meeting of the Michigan State Pomological Society by A. G. Gulley of South Haven, who had been appointed Commissioner to examine the disease and report all information gained in relation to it. He was convinced that as yet no remedy had been discovered for this mysterious trouble, the very nature of which remains unknown, and whose attacks have baffled the experiments of all pomologists. He thought it evident that the yellows is transmitted by insects, and the seeds of the disease carried to the flower of the peach affect the fruit; also that a sick tree will communicate its disease to other trees until whole orchards are affected. Young and old trees suffer alike, and there is no remedy except extermination and the digging up and burning of the trees affected.

All present admitted that the yellows is contagious in a most remarkable degree; but a few believed in it being an epidemic or that it is likely to pass off after having exhausted its energies.

Mr. Hanford of Indiana had tried applications of pure linseed oil on pear-trees affected with blight, and found it all that it was claimed to be. As there is much in the blight of the pear that is similar to the yellows in the peach the suggestion was made to experiment with linseed oil on peach-trees.

The summary destruction of trees affected, whenever and wherever found, is undoubtedly the only means of arresting the yellows when once it has made its unwelcome appearance. Its prevention lies mainly in the propagation of trees only which are in perfect health and vigor. Observation has proved that the yellows most frequently appears in orchards that have been neglected in their cultivation. It is liable to exhibit itself particularly in a yellow, sickly foliage, feeble shoots and small fruits prematurely ripened.

The Black Knot.

This disease, which has done so much injury to plum and cherry trees throughout America, was the subject of a communication from M. B. Bateman to the Cincinnati Horticultural Society. Our readers will no doubt read with interest the following extract therefrom:

It is very important that all owners of plum and Morello cherry trees should be informed of the nature and appearance of the disease, and as soon as a particle of it is discovered cut it away and burn the affected branches. The disease is well known to be contagious, is not caused by insects, but found to be the work of a fungus which is propagated by spores or seeds, and spreads in the young wood by its thread-like roots. These do not work rapidly up and down the branches, but cause warty excrescences several inches in length on the sides of the branches. These swellings are greenish and soft during the early part of summer, and so juicy as to attract the curculio to deposit its eggs therein, especially when stone-fruit is scarce. Other kinds of larva have also at times been found in these green knots, and this has given rise to the opinion that insects are the cause of the mischief; but in hundreds of cases no vestiges of insect work could be discovered in the knots, as it was found that the first stage of the disease began under the bark where no insects had access.

The spores of this fungus are said to ripen on the diseased trees during winter, and as this season is the best time for discovering the knots or swellings, all who have any suspicions of the disease being in their trees should search for it at once and apply the knife.

In many parts of Germany burnt earth is much employed for horticulture. It there often usurps the place of loam, the use of which is not generally so well known as in this country. The refuse of the garden clay, rotten wood, lawn-sweepings, etc.—is all thrown together and slowly burnt in the summer. Many kinds of plants root freely in the soil thus prepared, and it is very serviceable for seed-sowing, being free from weeds. It is the custom of most establishments to annually burn a large quantity, as it is credited with stronger renovating powers, even when merely applied to enrich the garden, than rubbish applied in a decayed state.