INSECT DOING CONSIDERABLE DAMAGE TO PEAR ORCHARDS IN EASTERN STATES

Productiveness of Many Trees in Fruit Growing Sections Has Been Greatly Reduced by Thrips, a New Pest—Most Effective Control Is Spraying.

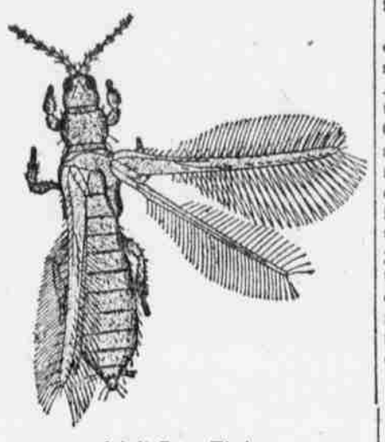
(By P. J. PARROTT.)

For a number of years pear blossoms in orchards in the state of New York and other parts of the east have blighted, resulting in more or less extensive losses in fruit yields.

Careful studies during the past year have shown that the injury is caused by the pear thrips, a new orchard pest, which has attracted considerable attention in recent years in California because of its destructiveness to various deciduous fruits.

The adult thrips, which is largely responsible for the injuries to the trees, is a small, darkish brown, winged insect measuring about one-twentieth of an inch in length. It appears in destructive numbers when the buds are opening, attacking the tenderest of the flower parts. The eggs are mostly deposited beneath the epidermis of the blossom and fruit stems. Hatching takes place within a few days, and the larvae seek preferably the calyx cups, undersides of calyces, and the folds or under surfaces of the tender, expanding leaves. The larvae feed for about two weeks and drop to the ground, in which they form a protecting cell. In this cell the insect completes its transformations and emerges from the ground in the spring as an adult. The thrips is single brooded; and the most active and destructive stages are coincident with the period that includes the life events of the swelling and opening of the buds and dropping of blossoms and calyces.

Injuries by the thrips in the Hudson valley have apparently occurred over a period of five years. During the past three years fruitgrowers generally have noticed blighting of blossom clusters of pear trees, although the nature of the causal agent seems not to have been suspected. According to



Adult Pear Thrips.

statements of fruitgrowers the most severe attack of the thrips occurred during 1910, when the pear crop in many orchards was much reduced. Besides losses in yields the trees were seriously checked by injuries to leaf buds and leaf clusters; and in some orchards the season was much advanced before the trees presented normal conditions of growth. The productiveness of pear orchards during 1911 was greater than the preceding year, but blighting of blossom clusters was general and orchards suffered losses in yields according to the severity of the attacks by the thrips.

Severe attacks by the thrips are a serious drain on the vitality and productiveness of the trees. In their weakened state they are also more subject to injuries by adverse weather or environment, and to attacks by various wood-boring insects. The needs of the orchard with respect to cultivation, fertilizers, pruning and spraying for other insects and diseases should be carefully considered in order that the most favorable conditions for recovery to health and productiveness may be afforded to the trees.

The thrips is a difficult pest to combat because of the nature and suddenness of its attacks. Spraying is the most efficient method of control. The period for effective spraying is during the time when the buds are breaking and until they are entirely opened at the tips. The most promising spraying mixtures are the nicotine preparations in combination with kerosene emulsion or soap. Two or three applications on successive days during the past year largely prevented important injuries to pear trees. The physical features of the locations of the orchards, such as the direction and elevation of the slopes of the land, and character of the soil, have a marked influence on the development of the buds and the time of blossoming. The time for effective spraying will therefore vary with individual orchards.

REWARDS OFFERED IN FRUIT GROWING

Great Crops Are Possible When Conditions Are Created to Produce Them.

Fruit growing offers many rewards in the way of great possibilities to those who get the most out of it. The careful planter and the liberal feeder and culturist, as a rule, gets what he is working for.

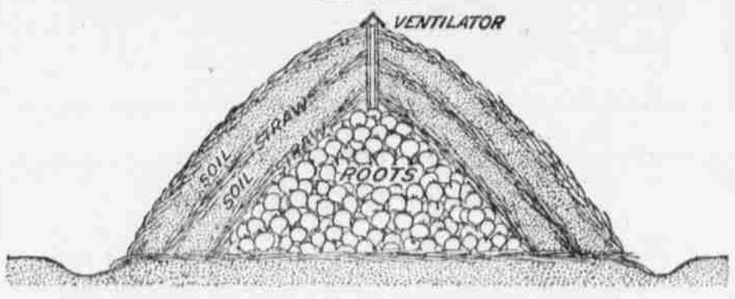
In all kinds of fruit culture great crops are possible when the circumstances are created to produce them. A well-cared for strawberry plantation, says a writer in Green Fruit Grower, often yields wonderful results; and the same can be said of raspberries, currants, gooseberries, etc., and yet it is not best to engage in fruit culture with that as an incentive. Figure on a fair crop, and if you get a large one, so much the better. I would not be understood to discourage aiming high—not by any means—simply to caution tthe inexperienced against building on these exceptional yields.

Do not plant too closely, and give what you plant close attention. We know a man who may not be termed a model fruit grower, yet this man makes the most of what he has, and is successful.

Good varieties, good plants, suitable ground, and proper care will produce fine fruit. Economy is very essential to success, and yet one must not be penny wise and pound foolish. There must be thorough work done, and plants must not be crowded. It takes some thought to know just how much work and money to bestow upon a crop to make the most possible profit from it.

It is difficult for the inexperienced to realize the great value of experience in fruit growing. After one has traveled the road he can see the value. To those who are about to establish themselves in this interesting industry, I would say to go slow at first; make small beginnings; gain your knowledge as you go on; study your location and soil so that you will know better than any one just what is possible to accomplish with it.

EXCELLENT STORAGE FOR THE ROOT CROPS



Cross Section of an Easily Constructed Pit for Roots.

E. J. Delwiche of the Wisconsin station makes the following recommendations regarding the storage of roots for feeding purposes:

The best place to store roots is in a root cellar near where they are to be fed. Such a cellar may be a part of a barn, basement, or it may be built conveniently near to the stock barn. In most places the root house can be built most economically of concrete. Ordinarily cement is the only material that has to be purchased. The gravel and sand are usually available at no great distance on most farms. While the temperature in a root house should never fall to the freezing point, it should be at a low point for best results in keeping roots.

When no cellar is available, roots may be stored in pits. For fall and early winter feeding they need not be covered to any great depth. The roots are put in conical pile about four feet in diameter on a bed of clean straw, then covered with a layer of two inches of long straw. Clean rye straw is preferred for this purpose. The straw at the apex of the pile is made to form a chimney five or six inches in diameter for ventilation. Dirt is thrown on the pile to a depth of six inches. The roots are piled as high as possible so as to shed water. When wanted for feeding the whole pit is taken into the barn at once. For early winter feeding the layer of dirt should be thicker, and in addition a covering of straw should be placed over the whole pile.

The illustration shows a pit intended to remain over winter. This provides for two layers of straw and two of earth. A ventilator made of four-inch boards is placed at the apex. When severe freezing weather sets in, the ventilator is stuffed tightly with fine hay. In such a pit roots will keep without freezing even in the coldest winters. If desired, the piles may be made oblong instead of conical in shape, retaining the gable form. While pits do very well, so far as keeping the roots is concerned, it must be understood that they are but makeshifts at best. A root house which is accessible at all times is much more satisfactory and more economical.

APPLYING WATER TO CROPS

Irrigation Supply and Its Use Should Demand Most Thoughtful Consideration of Best Minds.

Every day the question arises to the irrigator: "How am I to know how much water to apply to my crops?" There are ways by which this can be done and the time will come when every irrigator will avail himself of these means. Water is the most valuable thing in the arid region—more valuable than gold or silver or any other of our resources or products. Therefore, the water supply and its use should demand the most thoughtful consideration of the best minds, writes Alex McDonald in the Denver Field and Farm. I have found by actual experience that 16 inches of water, including rainfall, supplied during the growing season will produce 75 bushels of wheat and 130 bushels of oats, if properly distributed and conserved.

More water added to the soil did not increase its production, but rather decreased it. Less water than this produced nearly as much as the amount given. Hence the water that is added to the soil in excess of the needs of the plant is wasting wealth and it behooves the irrigator, or the men who are using water, to study this question well, so that they may make water do its whole duty, and thus increase the area of tillable land. Many who are not used to irrigating often look upon it as a mysterious work. I invariably say to these men if they pose as farmers: "Do you know when soil is in good condition?" If they answer yes, then I tell them to keep it that way. They do not have to wait for rain; they can supply water themselves and hence there is no excuse for not keeping it in good condition so far as moisture is concerned.

Next, how are we to find out how much water to apply in the soil? I have used the following plan: Take a ship auger with a shank tree three feet long or more, bore into the ground before the crops are planted, take all of the soil and put it in a receptacle. Properly cover to prevent loss of moisture, and take it to a drug store and weigh it. Then take this same soil and place it in an oven, or anywhere a temperature of about 104 degrees may be obtained, until thoroughly dried. Then weigh the soil again. From this the water in the ground can be computed. Then after irrigating do this again, and it will tell you, if you do it immediately after irrigating, how much water the soil contains when saturated, and if you wait 24 hours and take a sample in like manner it will tell approximately how much water the soil holds in a form that plants can use.

In fact, successful dry farmers in the northwest follow this plan every year. Of course precipitation there comes in the late fall, winter and early spring, and they find that if they have equal to 12 to 15 inches of water available for plants that they can count on a crop. If not, they must conserve this moisture by summer fallowing and await more precipitation. Then again, other tests may be used. Dig into the ground 3 or 4 inches and take a handful of the soil and squeeze. If it remains in a ball, then it is unnecessary to supply moisture. Of course, this pre-supposes that there is moisture down below and that the ground is not too sandy. Some may say this is too much trouble, but they should be willing to trouble themselves when there is money in it.

I have personally observed that men are pouring water onto their soil, which if used intelligently would irrigate from two to four times as much land as they are now irrigating. If one acre of land will produce a net income of $30 and upward, and by a little investigation they could, with the same amount of water, cultivate four acres and get better crops, is it not worth a little investigation? The intelligent farmer, whether scientific or not, wants to make money out of his farming operations. If he owns water, he wants to turn that water into money that he may have the necessitites, or even the luxuries of life in more abundance. Then why waste the water by excessive irrigation? While it is true that alfalfa requires more water than, perhaps, any other crop grown in the west, yet if the soil is deep and in proper condition so that the roots of the plants will go on down, they will be able to reach the subterranean water in a greater or lesser time and materially aid the farmer in reducing the amount of water necessary for his alfalfa.

Clovers Valuable Forage Plants.

Director Brooks of the Massachusetts station says of the clovers: "For four important reasons the clovers are among the most valuable forage plants:

First, the manurial cost of their production is exceptionally low; second, they are richer in protein than most of the forage crops—far richer than the grasses; third, they enrich the soil in nitrogen as well as subsoil it, so that the following crops are almost invariably good; fourth, in permanent mowings they ultimately so enrich the soil in nitrogen that the grasses as well as the clovers make vigorous growth.

Disease-Breeding Houses.

In closely built houses, where there is poor ventilation the air becomes contaminated by gases arising from filth and the accumulation of droppings. As the hens are exposed to these gases during the night, it is no wonder that the system becomes poisoned by them and disease results.

A Motive for Christian Service

By REV. JAMES M. GRAY, D. D.,
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TEXT: "Wherefore also we make it our aim whether at home or absent, to be well-pleasing unto him."—2 Cor. v. 9 (R. V.).

The motive for the service of Christ held before us in the context of these words is the hope of the future life which the believer has through Christ.

The nature of this hope is set before us in verses 1 to 4. Paul in the previous chapter had been speaking of his sufferings and afflictions as a Christian, and comforting himself and other Christians in a like case by the thought of the outcome of them all in the "far more exceeding and eternal weight of glory." This glory is a certainty, for he goes on to add: "We know that if the earthly house of our bodily frame be dissolved, we have a building from God, an house not made with hands, eternal, in the heavens." There are so many things which a Christian may know if he will only take God's word for them, and this thing, so full of comfort, is one of them. We who are in the present body groan in it for many reasons, but our desire is if we are Christians not merely to be rid of it but to be "clothed upon," i. e., to receive our new resurrection and glorified body. In other words, the hope set before the regenerated man is not death but that which sooner or later follows death, the resurrection and all that it implies. It is then that what is mortal shall be swallowed up of life.

Assurance of Resurrection.

After speaking of the hope set before the Christian the inspired writer goes on to show how assured it is in verses 5 to 8. "He that wrought us for this very thing is God," he says. The very object God had in view in the salvation of any man and all his work of grace in him was to this very end. A great theologian has said, "The end of God's way are corporiety," a thought which Paul sets before us here as applied to the resurrection from the dead. Moreover, God has not only wrought us to this end, not only is this God's purpose concerning us Christians, but he has given us a pledge of it in the dwelling of his holy spirit within us. The holy spirit in every believer is an "earnest" or foretaste of this thing, his indwelling certifies to our resurrection, so that "we are always confident" or of good courage concerning it.

Wherefore, says the apostle, "we labor," or rather we make it our aim or ambition, that "whether present or absent we may be accepted of him." Paul was always looking for the return of the Lord Jesus Christ, and if he, Paul, were present in the flesh on the earth when he came, he wanted to be found accepted or well-pleasing in his sight. It was possible, however, that he might be absent from the earth and from the body when the Lord came, but in that case also he wanted to be accepted of him. Whether he were present in the body or absent from the body he expected to stand before him. "We must all appear before the judgment-seat of Christ," he says, "that everyone may receive the things done in his body whether it be good or bad." The reference here is to Christians. They will not have to stand before Christ's judgment-seat in order to have it determined whether they are lost or saved, that is determined the moment the Christian takes Jesus Christ by faith to be his savior, but they must render an account to him of their stewardship as Christians in order to determine the matter of their rewards. It was for this reason that Paul wished to be found well-pleasing to him, and this reason sets before us the power of the Christian's hope to produce a holy life.

Reason for Evangelism.

But there was one special matter in which Paul desired to be well-pleasing to his lord, and that was in the saving of lost souls such as he had been, and such as all men are by nature. "Knowing therefore," he says, "the fear of the Lord,"—i. e., having our eyes on the judgment-seat of Christ when we must give account of our service with reference to our reward—"we persuade men."

This was the motive for such service with him. He was not thinking just now of the peril and retribution that would fall upon the lost, though of course, at other times he emphasized that motive for saving such; but he was thinking of his own accountability when, raised from the dead at Christ's second coming, he must face his record of service. Paul's motive should be our motive, for we have the same accountability, and must face the same Lord. How are we fulfilling it? We have many ambitions; can we say that we have this ambition?

Passengers Had to Work Their Way.

A drummer and a friend climbed aboard a ramshackle train in an isolated Missouri town. The train was a feeble, asthmatic piece of mechanism, and the Humane society should have prosecuted its owners for allowing it to run at all.

It finally came to a dead stop just in the edge of town, and after a long interval of trying to make it go the engineer stuck his head in the door and bawled:

"Say, you two gents'll have to get out, till I git it started!"

The Case.

"How did it happen that Jopps did not keep the good position he had?"

"On one important occasion he lost his head."

"How did that happen?"

"It was cut off."

Cheerfulness is also an excellent wearing quality. It has been called the fair weather of the heart.—Smiles.

We seldom take a deep and vital interest in the affairs of our neighbors—unless they owe us money.