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Suggestions for the Better Care of Texas Peach Orchards

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SUGGESTIONS FOR THE BETTER CARE OF TEXAS PEACH ORCHARDS.

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CULTIVATION.

Cultivation is one of the most important factors in peach growing in Texas. Occasionally a good crop may be secured without proper cultivation, but to insure regular crops of good fruit the tree must have the food to make peaches. A tree may be compared to a manufacturing plant. The raw materials are water and plant food. If there is a lack of any of these, or if the food is locked up in hard lumps, so the tree cannot use it, it cannot turn out a perfect peach as the finished product.

Many soils are badly depleted and it is very necessary for them to have good care if the orchard is to be a success. Much of the winter-killing is caused by poor cultivation. The tree must not only have enough food to ripen a crop of fruit, but also to mature fat, healthy buds that have the strength and vitality to withstand the winter and have plenty of reserve food to start off in the spring.

When cultivation stops too soon the supply of food and water is cut off and the tree prematurely ripens during the dry, hot weather and starts a weak growth with the fall rains. This new growth does not ripen properly before winter and is killed.

Cultivation in this section should not cease before the 1st to the 15th of September. Not only are the poorly nourished trees more likely to winter-kill, but they are especially susceptible to attacks of insects and diseases. The borer will attack a diseased or poorly nourished tree in preference to one that is making a vigorous growth. Moreover, lack of culture allows weeds to grow and provide harbors for insects.

A good plan is to cultivate the orchard up

to the middle of September and at the last cultivation sow a cover crop of oats or rye and vetch. This will prevent the soil from washing off by the winter rains and will utilize the surplus fall moisture, protect the land during the winter and furnish a green crop to plow under in the spring, adding humus and building up the soil.

PRUNING.

Objects of pruning:

(1) In the newly-planted tree to establish a balance between the roots and top.

(2) To form a low, open top. This type of tree is easier to harvest, prune and spray.

(3) Force new wood, as the fruit of the peach is produced only on one-year-old wood.

As the young tree comes from the nursery, it has lost a large part of its root system in digging. The top must be cut back to establish a balance between them. As soon as planted, head back to 18 to 20 inches and keep all buds rubbed off the lower 6 inches of the trunk. The next year all but 3 to 5 of the best limbs, well arranged about the trunk, should be removed and those that are left to form the main scaffold limbs should be shortened back to about 6 to 8 inches. In selecting branches do not have them all coming out at the top of the trunk or directly opposite each other, else a weak crotch that is easily split will result. Choose limbs that are well distributed around the trunk from the top to within a few inches of the ground. With the exception of keeping all other buds rubbed off the trunk, this is all the pruning required.

The next year the branches should be thinned out, forming a well-balanced, low, open head. Remember that peach trees always bear their fruit on one-year-old wood, so they have to be pruned more heavily than most other fruit trees after they come into bearing. The idea in all subsequent pruning is to keep a low, open head with plenty of new fruiting wood.

OLD, NEGLECTED TREES.

Often trees are left unpruned for a number of years, or until they are making little new

growth from year to year. In most cases this fruiting wood is in the top of the tree and at the ends of the branches. The inclination is to leave this top and take off the lower limbs. This is a serious mistake, for, if followed up, the tree gets higher and higher until it is out of reach of the picker and most of the branches are bare of fruit. When a tree has been thus neglected, the way to prune it is to cut it back. Cut out the top and cut back the branches, inducing the formation of new wood low down. If the tree has been neglected badly it may have to be heavily pruned (dehorned). Where such drastic measuse are necessary, often it is better, in order to have some fruit that season, to dehorn only half of the tree, leaving the other half to be cut back next year. If trees are properly pruned when young and kept pruned, it is rarely necessary to dehorn. But even an old tree, if not decayed, can often be brought back into bearing by proper pruning coupled with other good care.

THINNING.

One of the reasons trees fail to bear regularly is because they are allowed to overbear. All the food and vitality of the trees are used up in trying to mature a very large crop of fruit. The result is, the fruit buds for next year are not well nourished and are easily killed by any unfavorable conditions.

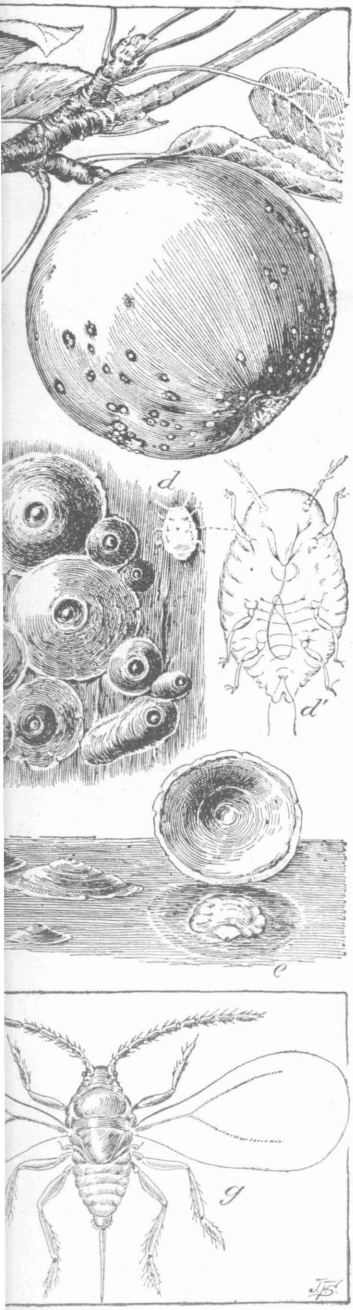
When a tree has set more fruit than it should bear, a portion should be taken off. If it is properly thinned not only will there be as many bushels of fruit as if it were all left, but the peaches will be large, more highly colored and consequently bring more dollars.

Peaches should be thinned as soon as danger of frost is over. Be sure and thin before the seed becomes hard. .It is the formation of seed and not the pulp of the peach (which is nearly all water) that takes the vitality of the tree. Leave the little peaches 6 to 8 inches apart on the limbs and, of course, leave the most perfect specimens. This is a good opportunity to harvest the culls.

ORCHARD PESTS.

No attempt has been made to discuss all

Fig. 5.—San Jose scale: (a), Adult fema
scales; (d) larva just hatched; (d')
moved, showing body of female bend
enlarged; (g), adult male of the Sa



ale; (b), male scale; (c), young
e, much enlarged; (c), scale re-
(f), body of female insect, more
e scale.

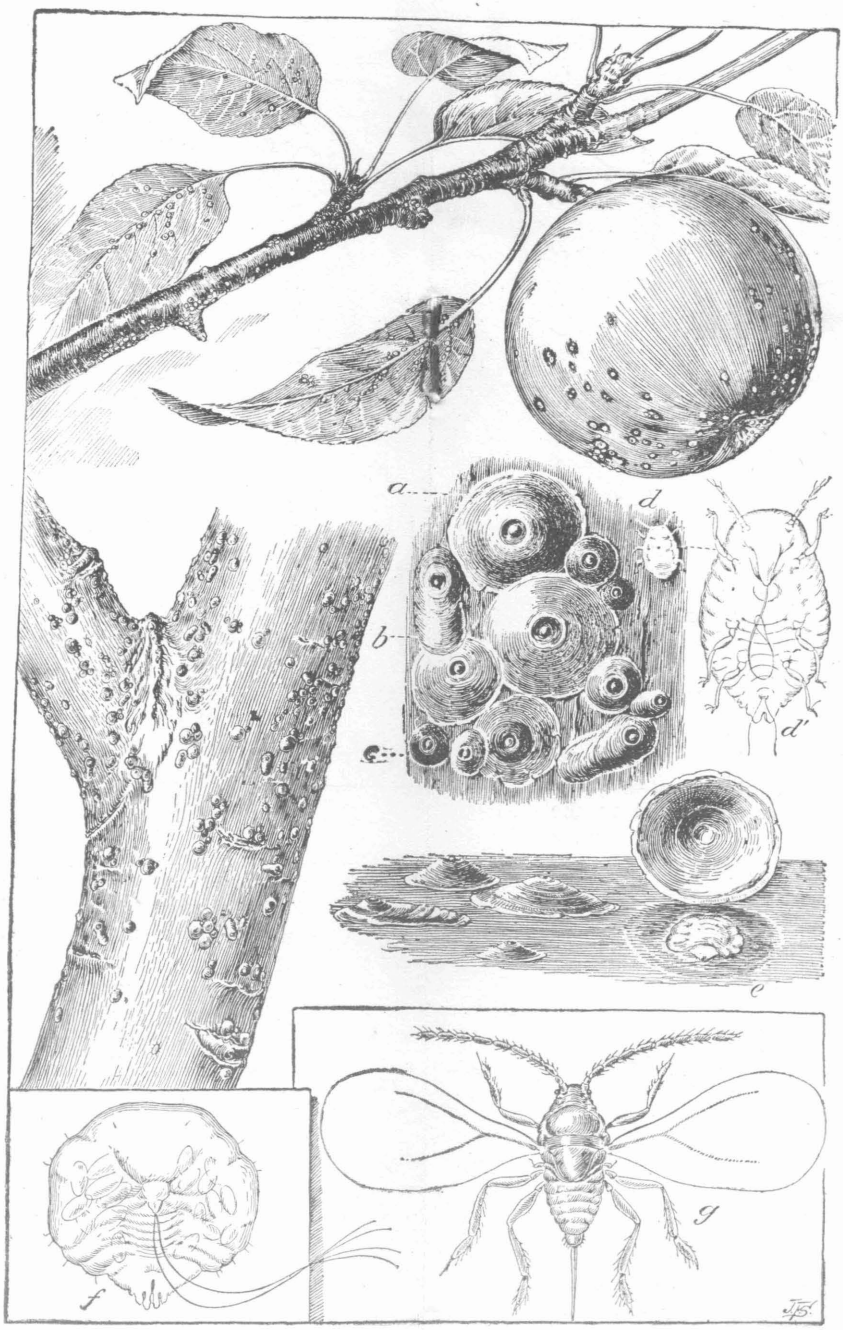
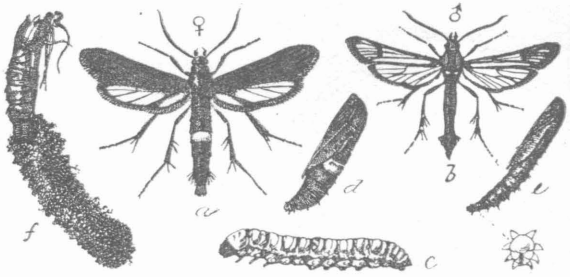


Fig. 5.—San Jose scale: (a),Adult female scale; (b), male scale; (c), young scales; (d) larva just hatched; (d') same, much enlarged; (e), scale removed, showing body of female beneath; (f), body of female insect, more enlarged; (g), adult male of the San Jose scale.

the insects and diseases that attack the peach, only the ones of especial importance to this State have been briefly treated.



PEACH TREE BORER.

(a) Adult female.
(b) Adault male.
(c) Larva.
(d) Female pupa.
(e) Male pupa.
(f) Adult emerging from cocoon.

Peach Tree Borer: This insect probably is causing more damage to the peach industry of Texas than all other factors combined. It is the larva of a moth the male of which resembles the yellow jacket and the female the mud dauber. The eggs are desposited on the trunk of the tree from about the 1st of August to the 5th of September. In from five to eight days they hatch and the larvae or worms either enter the trunk through some crack or opening in the bark or fall to the ground and enter the crown of the tree just below the surface of the soil. They grow very rapidly during the fall, but do not go far from the point they first entered. Beginning with spring and continuing until about the middle of July their growth is very rapid and the injury done is correspondingly great. About the middle of July they pupate and from August 25 to September 5 the adults appear and the female begins laying eggs.

Control: Dig out the larva the last of October or the first of November with a sharp knife or bent wire. About the middle of July or first of August, before the eggs are deposited, wrap the trunk with paper, tying it

securely at top and bottom. One of a number of repellent washes may be used instead of wrapping. Also the earth may be mounded up about a foot high around the tree. Keep the ground free of weeds and trash, have the soil well cultivated and the tree in a healthy growing condition.

San Jose Scale: Next to the peach tree borer, the San Jose Scale is probably the most destructive insect the peach industry of Texas has to contend with. When first hatched this is a small, yellow, louse-like insect. Shortly after hatching, it begins to suck the sap of the tree and soon forms a hard, scaly covering, about the size of a pinhead in the full-grown insect. They multiply very rapidly and a limb may be completely covered by the greyish scales, giving it the appearance of being coated with ashes. They attack all parts of the tree—trunk, branches, leaves and fruit. They are found on most fruits and berries and some forest trees. The injury is caused by the insect sucking the sap and if not controlled will kill the tree.

Remedy: Spray the tree while dormant with Lime Sulphur Solution. (See page 11 for formula.)

Curculio: The plum or peach curculio is an insect often mistaken for the boll weevil. They feed on the foliage and blossoms at first, later the female cuts a semi-circular opening in the skin of the newly-set fruit and deposits its egg. This hatches into a white grub that burrows to the center of the fruit later, causing it to drop from the tree.

Preventive Measures: The beetle has the habit of playing 'possum when disturbed. A sheet may be placed under the tree in the early morning and the tree jarred. The insects then can be gathered up and destroyed. This should be repeated for several days and

may be supplemented by spraying with arsenate of lead at the rate of two pounds to fifty gallons of water. Two pounds of lime should, also, be added to prevent burning the foliage. Spray just as the fruit is dropping the "shuck," and if necessary make another application ten days later. Clean cultivation and destruction of all fallen fruit will very largely control this insect.

The Fruit Bark Beetle: This is usually known as the "shot-hole borer," from the appearance of the injured tree. It is a black beetle that attacks trees that are weakened from some other cause. They very rarely attack healthy trees.

Control: Cut off and burn infested branches at once and give the orchard clean cultivation. Spraying is of doubtful value.

Peach Leaf Curl: This is a fungus disease that attacks the peach leaves early in the spring, causing them to swell, curl, discolor and finally fall.

Control: Spray with concentrated lime sulphur solution before the buds swell in the spring. Spray applied for San Jose Scale will control this disease.

Crown Gall: This is a bacterial disease at the roots, causing the formation of cancerous knots. They cut off the food supply.

Control: Affected trees cannot be cured: therefore, plant only trees free from the disease.

Brown Rot: A fungus attacking the ripe or nearly ripe fruit. It sometimes kills the flowers and twigs and often causes peaches to break down in transit. The spores usually enter through breaks in the skin caused by insects or rough handling. It is often found associated with curculio.

Control: Bury or burn all decayed fruit.

Spray with self-boiled lime sulphur solution. This may be combined with the arsenate of lead and applied as the peach is shedding the shuck. Spray again about ten days later with the self-boiled lime sulphur solution alone.

SPRAY FORMULAS.

Home Made Lime Sulphur Solution.

15 lbs. quick (unslacked) lime,
15 lbs. sulphur, powdered,
50 gallons water.

Mix the sulphur with just enough water to make a paste. Place the lime in an iron kettle or boiling vat, cover with sufficient water to slack the lime without burning, add the sulphur and boil for one hour, adding more water from time to time if necessary to prevent burning. After boling an hour add sufficient water to make fifty gallons of the mixture, strain through a fine sieve and apply immediately.

Self Boiled Lime Sulphur Solution.

8 lbs. pure unslacked lime,
8 lbs. powdered sulphur,
50 gallons water.

Mix the sulphur with enough water to form a paste. Place the lime in a kettle or vat and cover with four to six gallons hot water and add the sulphur immediately. Stir vigorously for a minute and cover the kettle or barrel with heavy bagging. Allow the mixture to boil ten minutes, adding more water if necessary to prevent burning. At the end of ten minutes add enough cold water to make 50 gallons of the mixture. Strain through a fine screen, working all the sulphur through the screen, and apply at once.

Commercial lime sulphur may be diluted according to the following table. A hydrometer with full directions for using may be pur-

chased for $1.00. Much better results may be expected where the solution is correctly diluted than when guessed at:

DILUTION TABLE.

Hydrometer readings		Gallons of water to one gallon concentrated lime-sulphur.
Degrees Baume	Specific Gravity	For San Jose Scale
36	1,330	9
35	1,318	8¾
34	1,306	8¼
33	1,295	8
32	1,283	7½
31	1,272	7¼
30	1,261	6¾
29	1,250	6½
28	1,240	6
27	1,229	5¾
26	1,219	5¼
25	1,208	5
24	1,198	4½
23	1,188	4¼
22	1,179	3¾
21	1,169	3½
20	1,160	3¼
19	1,151	3

The diluted spray should test 5° Baume or about 1.035 specific gravity.

TREE WASHES FOR BORERS.

Hale's Wash.

16 lbs. hard soap,
2 gallons boiling water,
2 qts. crude carbolic acid,
Lime enough to make a good paint.

Scott's Wash.

1 bu. lime,
10 lbs. sulphur,
½ gallon gas tar,
Water enough to make 50 gallons.

Paddock's Wash.

10 lbs. lime,
6 lbs. potash and water to make 50 gallons wash.