

Peach Yellows, Little Peach and Peach Rosette*

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THE "little peach" disease is important inasmuch as it occurs quite seriously in Michigan, New York and Ontario. This disease resembles yellows in many respects, particularly in its foliage symptoms, yet it is very distinct, in fact the opposite in other respects, namely, its fruit symptoms. The fruit on trees affected by "little peach" is undersized, belated in ripening but similar in color and appearance to the normal fruit, especially to imperfectly developed specimens. It is rather flat and insipid but not so distinctly off-flavor as in the case of the yellows. It may be only slightly reduced in size in mild cases or in extreme cases may be reduced to tiny peaches less than three-quarters of an inch in diameter. Trees affected by the little peach rarely produce the wiry, bushy growth. When forced to throw water sprouts by heavy cutting back or winter killing, they do to some extent make twig growth resembling yellows.

Trees with the little peach *usually* roll their leaves upward and droop the foliage as yellows occasionally does. The leaves begin to discolor on the inside of the tree, especially on the main limbs and the yellowing proceeds outwardly as the season advances. "Little peach" is quicker than yellows, killing the tree ordinarily in three years instead of four or five years. The twigs die back from the top in the same way. It apparently spreads more rapidly in the orchards and since it has not the premature red spotted fruit its symptoms are more obscure and more difficult to recognize. This makes it rather harder to handle than the yellows. The "little peach" occurs mainly in Michigan, Western New York, and to some extent in Ohio, Pennsylvania and New Jersey.

PEACH ROSETTE

The rosette which occurs in Georgia and the neighboring state of South Carolina and also to some extent in Missouri and Arkansas, is still another disease of the same type. It is only interesting to Ontario growers for comparison. The affected trees produce small, very short, bushy growth like extreme cases of the yellows, but they are so dense as to form small rosettes or bunches of leaves on the trees. The affected trees usually throw their fruit while it is still small and the trees, in fact, are usually dead by the time the fruit should ripen. Occasionally trees partially affected produce small green, shrivelled and imperfectly developed fruit, but it is not premature. On the healthy side of half diseased trees, which only rarely occur, the fruit is nor-

mal. The trees mostly die, root and branch, before the season is over. This rapid death of trees affected by rosette is a distinct advantage to the orchardist as the disease mostly eradicates itself.

HOST PLANTS OF YELLOWS GROUP

Peach yellows occurs mainly on the peach but it also occurs on the Japanese group of plums sufficiently to be of importance as a plum disease. So far as we know, other plums are not affected by it. It also occurs on the nectarine (the smooth form of the peach), and on the almond and apricot, these latter being, of course, only occasionally grown within the range of this disease.

but further investigation, particularly in Japan, would be necessary to determine this.

YELLOWS ON NURSERY STOCK

Unquestionably yellows can be budded into nursery stock. This has been done experimentally, notably by Smith. I have done it myself in a number of cases. Naturally well-marked specimens are selected for this purpose. Nurserymen ordinarily would not bud from pronounced cases of the yellows. On the other hand, incompetent help may secure bud sticks from diseased trees, but what is more likely, buds may come out from incipient or incubating cases which do not show



Spraying by Hand Power in the Essex Peninsula of Ontario

Orchard of J. O. Duke, Ruthven, Ontario. This illustration shows an excellent way to mount a hand pump. There is plenty of room for the operators to work.

The "little peach" is known only on the peach and Japanese group of plums. It may possibly also attack some other stone fruits. The Japanese plums are so peach-like that they form ready hosts for these diseases. The rosette occurs on the peach and on the native Chicksaw plum, and probably also on the Japanese group of plums.

Apparently peach yellows and peach rosette are native American diseases. If this is the case, they are doubtless diseases of our native stone fruits just as year blight is with some fruits. Rosette is probably a disease of the wild Chicksaw plum. "Little peach" may possibly be a native American but I doubt it, since it only recently appeared and the date of its appearance some twenty years ago corresponds with the introduction of the Japanese plum into American horticulture. My suspicion, therefore, is that it was introduced with the Japanese plums,

the true symptoms at the time. Smith transmitted the disease by budding from the apparently healthy side of a diseased tree. Unfortunately buds cut from yellows trees slightly affected grow fairly well in the nursery.

This is not the case, however, when pits are used from diseased trees. So far, all attempts to grow trees from diseased pits have failed. Recently I planted 100 pits from trees well marked with yellows, with premature red spotted fruit, and 100 pits from typical cases of "little peach." None of these grew. Not a single seed germinated. In all cases, so far as I know, where pits from well-marked diseased trees have been used, a similar result has been obtained. If this could be assumed to be always true, it would remove one great possibility of reproducing disease. Unfortunately we do not know what happens when pits are taken from trees only slightly affected or from

*The fifth instalment of Mr. Waite's address on "Fungous Diseases of Ontario Orchards," given at the convention of the Ontario Fruit Growers' Association.