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PEACH YELLOWS AND PEACH ROSETTE.

FIG. 1.—A single rosette. (From U. S. Department of Agriculture.)

PEACH YELLOWS.

It has been recently reported to the station that a few isolated cases of peach yellows exist in Central Missouri. Growers in that section have sent the station a few peach twigs, showing abnormal growth, that may, or may not, have been the result of this disease. By a visit to the orchards in question, no satisfactory evidence of the disease could be found, the growers having very wisely cut down and burned suspected trees, to prevent possible spread of the disease. Correspondence with prominent practical horticulturists has not enabled us to postively locate a case of the yellows. A number of growers, who have travelled much in the state, believe that, in these supposed cases of yellows, the trees have been diseased from some other cause. Other growers, who are also acquainted with the yellows in other states, feel equally certain that the disease has occurred in Missouri. Whether or not the peach yellows has actually occurred in our state, it is certain that this disease is slowly spreading westward, that it has already reached the Mississippi Valley, and that we can not be too careful in preventing its getting a foothold in Missouri peach orchards. Many states, where this disease has become established, would gladly appropriate immense sums of money to get rid of it. The main object of the following is to describe the distribution, dangerous character, and symptoms of peach yellows, so the orchardist may readily recognize it when it first occurs, and stamp it out before it spreads beyond control.

SYMPTOMS.

Often the first indication of peach yellows, which may also attack other stone fruits, is the premature ripening of the fruit. The fruit is unnaturally blotched or clouded with red, and is of inferior taste, being insipid or bitter. This may occur a few days or even a few weeks before the normal period of ripening, and may include all the peaches on the diseased tree, or only a part of them. In the latter case the remainder ripen at the usual time. Either before or after the ripening of the fruit, the winter buds may prematurely burst into growth, forming numerous tufts of

small leaves along the branches. This growth is well illustrated in Fig. 2. Usually the trees also put out numerous sprouts from the trunk and main branches. This sprouting and multiple leaf growth is generally most noticeable in early autumn. It may, however, take place in summer, or, the buds may remain dormant

FIG. 2.—Winter buds unfolding in autumn; caused by yellows. (From U. S. Department of Agriculture.)

until very early spring before they assume this character of growth. Autumn flowering is also a symptom of yellows, though it may also occur from other causes. If a peach tree, affected by yellows,

is allowed to take its natural course, it usually presents all the above characteristics before it dies, but it is impossible to predict in what order the symptoms will occur. If the disease is allowed to go on, year after year, however, its characteristics become more noticeable. There is a general falling off in vigor, the fruit is undersized, the early ripening becomes more marked, the leaves are small and sickly, often becoming cup-shaped, and many of the buds fail to start in spring. If yellows once appear in any part of the tree, death is sure to ensue, sooner or later, the tree seldom lasting more than five years at most.

DISTRIBUTION.

The yellows is of American origin. It has been known to peach growers, in some of the Atlantic coast states, for many years. It has spread westward somewhat slowly, until it has now reached the Mississippi river and the peach region of Michigan (see Fig. 3), and isolated cases of it may exist in states west of the region indicated. Its gradual, westward march indicates the danger of its gaining a foothold west of the Mississippi, and emphasizes the necessity of prompt action, should it be detected in our orchards. Unless its symptoms are recognized by the grower, isolated cases of it may exist for years, in private orchards, without its presence being generally known.

PREVENTIVE MEASURES.

There is no known cure for peach yellows. The only safety against its spreading lies in promptly cutting down and burning, root and branch, every tree that is known to be affected by it. Ample experience has proven that even cutting away and burning the parts that show the disease will not save a tree, but that spread of the disease may be checked if the trees are entirely destroyed as soon as they show symptoms of the disease. The cause of peach yellows is unknown. The most careful investigations, made by the department of agriculture and others, have failed to detect the presence of any fungus or bacterial germ, to which the disease may be attributed. We recognize the disease only by its symptoms, and consequently can not state in what ways

it may sometimes be spread from tree to tree and orchard to orchard. This much is known, however, that, if a bud is taken from a tree infested with yellows, and inserted in a healthy stock, the latter will take the disease *provided the bud lives to unite.* This is true, even if the bud is taken from a vigorous shoot of a tree that shows yellows in some other of its branches. For this reason buds or young trees should never be obtained, unless they are known to have been propagated from stock that is free from yellows.

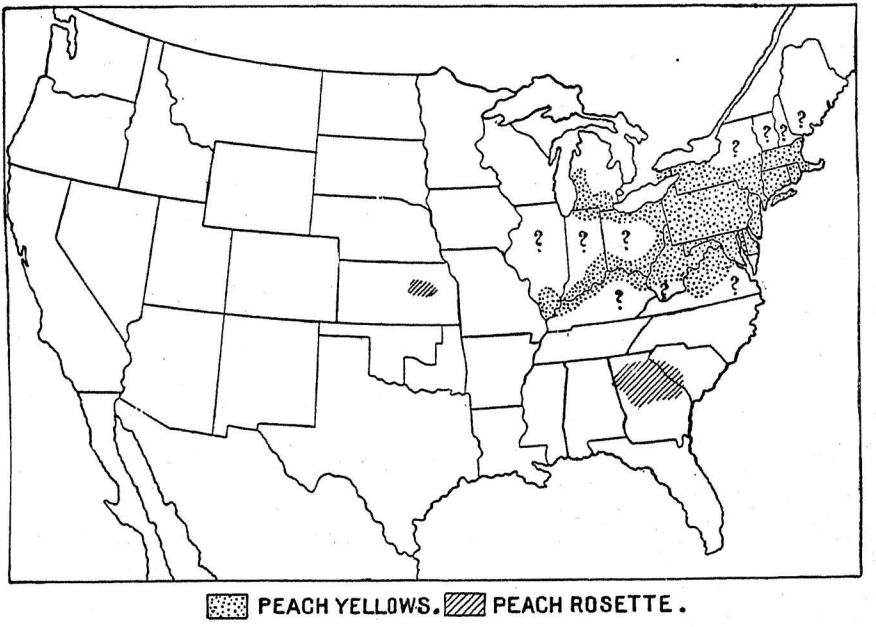

FIG. 3.—Approximate distribution of yellows and rosette. The interrogations denote that the exact limits of the disease are unknown. (From the U. S. Department of Agriculture.)

PEACH ROSETTE.

Peach rosette, another subtle disease, has this autumn been reported to the station from South Missouri. Fig. 3 shows the distribution of this disease to be small, but whether it has actually occurred in Missouri or not, it is well to discuss it here. The

rosette is similar to yellows but differs in these respects: It generally attacks the tree in the spring, the multiple leaf formation being so marked as to form very thick tufts or rosettes like that shown in Fig. 1; the fruit withers and drops while green or else ripens at the normal season, is without the red blotches of yellows peaches, and one season is sufficient for this disease to kill the tree.

The preventive methods are the same as those recommended for yellows.

LEGISLATION AGAINST PEACH YELLOWS.

A number of states, among them Michigan, New York, Pennsylvania, Connecticut and Ohio, have enacted laws for the stamping out of peach yellows. While these laws differ, somewhat, their general object is to prevent growers from allowing diseased trees to remain unburned, to prevent the shipping of diseased fruit, nursery stock or buds or in any way disseminating the disease, and to place the enforcement of these prohibitory laws in the hands of proper authorities.

This is a step in the right direction, and such a law, enacted now, might save Missouri vast sums of money, by preventing possible infection of her peach orchards by yellows or rosette. The effort necessary to prevent the spread of these two most serious diseases of the peach, before they once get established in our state, would be very small, when compared with the immense expenditures that would be necessary to eradicate them after they became general.

ACKNOWLEDGMENT.

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