GUMMING, DISTORTION, AND PITTING IN CHERRY AND APRICOT

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Introduction

Severe gumming of trunks and branches, distortion of shoots, leaves, and fruits, and severe necrotic streaking and pitting of trunks have been observed in experimental plots at Summerland, B.C. These symptoms are often associated with each other, and have been observed in sweet and sour cherry and apricot, They have occurred in uninoculated as well as in inoculated trees, They are not known to indicate any recognized disease, though they have appeared most frequently in experiments with twisted leaf of cherry, Some but not all of them have been transmitted,

Observations

Gumming of trunks and branches

For many years, very severe gumming of trunks and branches (Figures I, 2, and 5) has been observed in some sweet cherry trees naturally infected with twisted-leaf virus, Other naturally infected trees have produced no gum, Severe gum has been produced in sweet cherry and apricot trees inoculated with some selections of twisted-leaf virus, but not in trees inoculated with other selections of this virus. Gum pockets are formed in or under the bark and gum is exuded, In time pockets of gum and dead tissue become embedded in the wood.

Distortion of shoots, leaves, and fruits

For several years, distortion of shoots, leaves, and fruits (Figures 1-4), not due to the twisted-leaf virus, has caused difficulty in experiments with twisted leaf, In sweet cherry the leaf symptoms resemble closely those produced by twiated-Leaf virus (1, 3), and the fruit symptoms resemble those sometimes but not always found with twisted-leaf. Some terminal buds die. Some terminal and adjacent shoots grow only a few inches and may be curved through almost a full turn, Many of these show necrosis on the inner side of the curve and killing from the tip backwards, Shoots below the terminal bud are sometimes more numerous than normal. They may be all stunted, or one or two may grow several feet while the rest are stunted. Longer shoots sometimes weave, changing direction slightly but several times In the growth of a single year. These symptoms have been observed in several varieties of sweet cherry, and are particularly severe in Sam which is unaffected or only slightly affected by twisted leaf. Similar distortion af shoats and leaves has been observed to a smaller extent and in milder form in Montmorency sour cherry, Similar distortion and stunting of shoots, sometimes in severe form, has occurred without recognized leaf symptoms in Wenatchee apricot,

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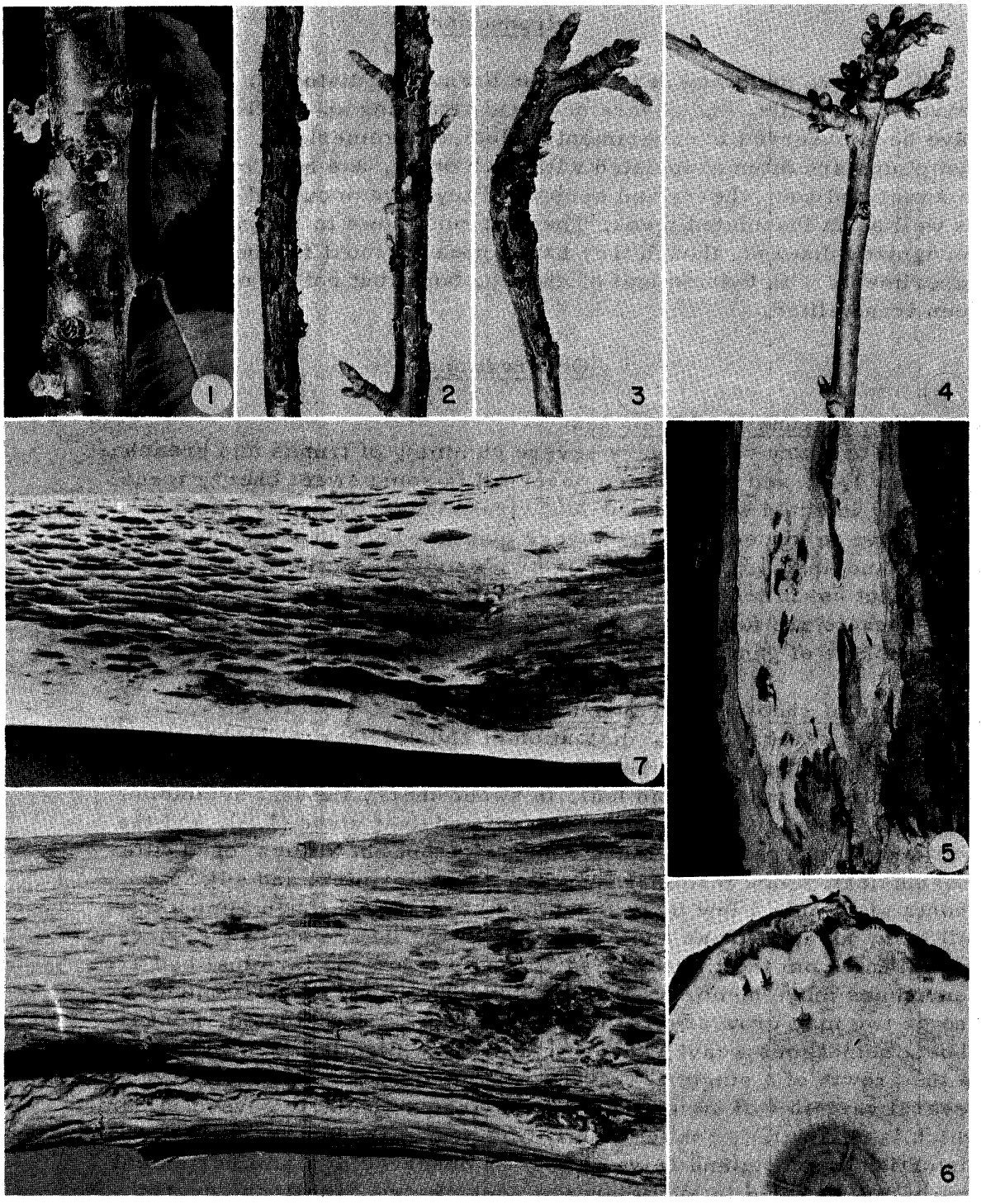

Figures 1-8. Symptoms in sweet cherry. Figure 1, Distortion of leaves and fresh gum on branch. Figure 2. Old gum blisters and cankers. Figure 3. Distortion and canker on shoot. Figure 4. Stunting and distortion of terminal and two side shoots. Figure 5. Gum in bark, embedded dead tissue and pitting in wood. Figure 6. Dead streaks in cambium and resulting damage to wood. Figures 7 and 8. Pitting in the wood.

Necrotic streaking and pitting of trunks

Hecently, extensive striated areas (Figures 5-8) have been observed in the trunks of sweet cherry trees, particularly those showing gumming or distortion. These areas extend from the main roots upwards for a foot or more, and are sometimes continuous around the trunk, Outwardly the bark shows poorly defined sunken areas, The outer wood shows grooves and ridges, The grooves are discontinuous and from a fraction of an inch to several inches in length, Examination in depth shows that there have been vertical streaks of dead cambium with growth of wood on both sides, and increasing numbers of such dead streaks in successive years, The ridges are continuous vertically ,with numerous joins and branchings, and result from normal wood growth. In some less severely affected areas growth is almost stopped but without necrosis, resulting in a continuous ring of wood of varied thickness. In some sweet cherry trees on maezard roots there was a marked difference in the severity of pitting in stock and scion portions of the tree. In Montmorency sour cherry trees on mahaleb roots, the short piece of mahaleb trunk was without any pitting, while the Montmorency trunk was severely pitted. In one such tree, pitting was severe in the lower trunk, diameter 2 1/4 inches, and the severity decreased progressively so that pitting was only just discernible in a branch 3 feet higher up and 1/2 inch in diameter, Pitting symptoms in Wenatchee apricot are similar to those in sweet cherry ,

Discussion

Investigations are being continued to determine the cause or causes of the above syndrome in sweet and sour cherry and apricot, and to determine, more fully, the relationships of the several symptoms. Varietal susceptibilities are being studied, The possibility of soil transmission is being examined, Attempts are being made to evaluate the apparent absence of correlation between this syndrome and ring pox of apricot, in contrast with the strong correlation of twisted leaf of cherry and ring pox of apricot (2). In British Columbia, twisted leaf of cherry (1, 3) has only rarely been found with the fruit symptom which has been more general further south. This fruit symptom has been pronounced when it has been present, but its transmission has not been regular, Further consideration is being given to some indications that this fruit symptom may be correlated with the above syndrome rather than with twisted leaf of cherry as it is usually encountered in British Columbia, The above syndrome has been observed and studied mainly in experimental plots, but has also occurred to a small extent in commercial sweet cherry trees, It has sometimes been confused with twisted leaf, but this confusion is not considered to have affected the main part of the work with twisted-leaf virus, This paper is intended to indicate the problem, It is realized that much further work is required,

Literature cited

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