SLIME-FLUX OF ORNAMENTAL HARD-WOOD TREES

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Nature of Disease

Slime-flux of hardwood trees is caused by the fermentation of oozing sap. Wounds of various kinds, in such trees as Birch, Elm, Maple, Poplar, Sycamore, and Weeping Willow, which bleed very profusely, may develop a chronic exudation of slimy, mal-odorous ooze. Certain species of fungi, closely related to the yeasts are commonly found in this ooze, along with other fungi and bacteria. Fermentation of the sap which is exuded from the fresh wound causes the death of the bark and wood adjacent to the wounded tissue and often large areas of bark are killed. It is not known what specific action the different organisms in the slime exercise in causing the death of the bark. It is supposed that they do not act as parasites but rather that the products of fermentation slowly produce the death of the adjoining tissues. If such bleeding wounds are not taken care of, they may involve the branches above, so that these branches gradually wilt and die. When the last stages of this wilting process are reached, sometimes one may be led to believe that the tree is suddenly dying. This, however, is not true, for the process has been going on for some time. Doubtless the products of fermentation have been carried in the sap stream of the branches, gradually causing their death. Although most of the trees above named may be at times affected, the Birch, Elm, Maple, and Poplar seem to be more commonly affected.

Prevention. The most important step in preventing slime-flux is to care for any wounds before the ooze begins to form. Trees which bleed commonly should be watched so that any wounds that occur can be shaped and immediately prepared for rapid healing. If bleeding continues and a wound-dressing will not adhere, the surface of the wound may be allowed to dry out for some time. If this is not effective, the surface of the wound may be cauterized or burned with a gasoline cork. In such a case, caution should be taken not to heat the callus or bark at the edge of the wound. Old wounds which have developed slime-flux should be cleaned and treated in the same way.

Surgical methods. There is a correct way, as well as the wrong way to prepare a wound for successful and rapid healing. Tools must be sharp. A knife such as that used for budding is useful in cutting along the margins of wounds. For cleaning out cracks and crotches, a Farrier's knife is useful, while a draw-shave may be used for scarifying larger surfaces. When all of the diseased tissue is removed, the wound should be shaped up so as to be pointed above and below, since this facilitates healing. The edges of the wound should be cut at right angles to the surface of the bark, for slashing cuts do not readily heal.
When it is necessary to remove a whole branch, care should be taken to make a cut as near the parent branch or trunk of the tree as possible. This aids early healing. Stubs of branches can never heal; they die and become infection courts for wood-decaying fungi.

If the care of the tree has been such that cavities and decayed parts are present, a simple method of tree surgery may obviate the need of much greater use of time and money later. The heart of a tree is dead wood and is of no importance to a tree except for strength. Its removal, if decayed, will therefore not be a detriment; it may be beneficial and worth while in cases where the time and labor involved are not too great. The mallet, chisel, and gouge are the essential tools. If the cavity extends down the branch for a considerable distance, it should be provided with a hole as a drain at its lower end, or if the cavity is cup-shaped, the lower edge of the cup should be cut away to allow drainage.

Disinfection. After the wound is cleaned and well-shapened, a disinfectant is applied. For this use a solution of corrosive sublimate, one part to 1000 parts of water. This solution can be prepared at any drug store. It should be kept in glass or porcelain containers only as it will attack metals. The material is a deadly poison and should be so labelled and kept out of reach of children. Thoroughly wash the clean wound with this solution, and then after the wound has thoroughly dried, coat with a wound dressing.

Wound Dressing. The sole object of painting a tree wound is to prevent the wood from infection by decay-producing organisms until the wound is healed by callus formation. Wound dressings do not induce more rapid callus formations but the protection they give allows growth of healthy tissue over healthy wound tissue.

There are many antiseptics for tree wounds that have been recommended by different experimenters and applied with various degrees of satisfaction. For several years, the Oregon Experiment Station has recommended the use of bordeaux paint. This, we believe, comes nearest to combining the necessary properties for a successful tree paint. When applied with care, this bordeaux paint will remain permanently for several years.

Bordeaux paint is prepared by stirring raw linseed oil into one of the commercially prepared bordeauxs. The writer has had success with the Sherwin-Williams Fungi-Borde. A quantity of the dust sufficient for the treating project at hand, or for a day's operation, is placed in a pail. While stirring, raw linseed oil is slowly added until a thick, smooth paint is formed. It is desirable that the paint be rather thick when prepared, for it apparently becomes thinner after standing a short time. It is most conveniently applied with a brush and should be brushed out to a thin, smooth coat. Therefore, in the preparation of the paint, be sure to stir and mix the paint until it is of a very smooth consistency. The paint should be applied to wounds after they have been allowed to dry out for two or three weeks, following the application of corrosive sublimate solution. Examine the coating of paint the following year, and if the wood has cracked or perchance the paint has blistered over the area where slime-flux has oozed out, repaint these portions. Always keep in mind that cracks in wood should be completely covered. A thin coat well brushed out sticks better than a thick coat.