

### PEAR BLIGHT AND ITS CONTROL UPON THE PACIFIC COAST

This is the Third of a Series of Articles That Will Be Printed Daily Until Subject Is Completed—Every Orchardist in the West Should Save These Issues for Future Reference, as They Contain Valuable Information.

By PROFESSOR O'GARA, Assistant Pathologist United States Department of Agriculture. Written especially for the Medford Mail Tribune. Copyright, 1910, by the Medford Mail Tribune.

(Continued from Monday, May 9.)

**Hosts Plants.** The disease is usually most serious on the pear. It attacks the apple, however, to a very serious extent, sometimes disastrously as I have already noted. The quince, wild crab apple, various species of the hawthorne, the service berry, mountain ash and other wild fruits belonging to the pome family, are more or less subject to its attacks. The logan, which is a relative of the pome fruits, is a somewhat peculiar host for this disease. Wherever native shrub or trees of the pome species are abundant in the neighborhood of pear and apple orchards attention should be given them, and it would be better that they were destroyed. There is this much to say, however, the native shrubs do not, as a rule, tend to hold the blight over as do the cultivated orchards.

#### External Appearance.

The blight usually attracts attention in the spring of the year, and a month or so after the blossoming period. It is then found that the flower clusters are shriveling and dying, however, if examination has been made very carefully the blighted blossoms may be seen to have been infected for some weeks previous to this time. The twigs will also be found to be dying. In some cases the new shoots are seen to be attacked at the tip and the disease running downward killing the tender twigs completely and running down the bark of the twigs and branches in the form of an ooze, which is slimy in appearance and somewhat sweetish to the taste. Usually blossom blight accounts for the greater part of the infection points, but in some cases twig infection exceeds blossom infection. If the season is favorable and the other conditions are just right, the disease may not run further than a few inches. It may kill only the blossom clusters or the fruit spur a few inches down the twig and then stop. On the other hand if conditions are very favorable for the tree, which means favorable to the blight germs, the disease may run down into the main limbs and branches, and in extreme cases, may continue running downward through the growing season until it reaches the root system. Often it has progressed much further in the bark and cambium of the branches than appears on casual examination, for, as a general rule, it works only in the bark and cambium layers leaving the mature wood unharmed.

Sometimes a very small strip of cambium is left unharmed and the sap, therefore, is able to continue to flow upward; so that the leaves and branches may still carry their foliage or often mature their fruit. Very often, too, the bark and cambium may be completely girdled, but the young wood is still able to conduct enough sap to keep the foliage and fruit hanging, and often allowing the fruit to mature. On microscopical examination of the diseased tissues they are found to be completely filled with countless millions of minute germs. These germs are mixed with a gummy, sticky material formed by the sap of the tree and is produced by the decomposition of the tissues. The disease is, therefore, more in the nature of fermentation or perhaps we may say a gangrene of the bark and cambium produced by the invasion of this immense swarm of bacteria. The bacteria proceeds in all directions from the point of infections, that is, when they go down a twig or spur or a water sprout into the branches or bodies of the trees there is a development of the disease from this point upwards and downwards and laterally. On account of the vessels and fibres of the bark the most rapid development is lengthwise, that is to say, upward and downward on the branches. The disease has a tendency to develop in the green, fleshy or outer bark of the smooth branches. The branches of the pear tree usually remain smooth up to 8 or 10 years of age, sometimes for a longer period. During this time, the fleshy, outer bark grows as fast as the limb grows, but later on the outer layer dies and converted into firm corky material, or the characteristic rough bark of trees. This formation of rough bark often puzzles the orchardist in getting out pear blight, as the dead spots resemble, to some extent, the appearance of blight; however, a little study will soon enable one to recognize the rough bark formation by cutting through the dead

layer to the fresh, smooth bark which is found underneath.

It may be stated here that where the bodies of trees are covered with the rough bark and these sunken spots of bark are just beginning to die, the only method of inspection should be by digging out a small chip with a gouge so as to expose the inner bark and thus be able to tell whether or not there is any infection in the tree. Sometimes the blight runs in the green layer, leaving untouched the slightly tougher inner bark, but such cases can be easily recognized from their connection with blighted bark above or below. When blight is working in the tissues it invades the vessels of the bark, the intercellular spaces, and besides often breaks down in its progress the little pores or channels, or sometimes large lenticular spots which become filled with some of the gummy matter. This very frequently exudes, sometimes in tiny drops not larger than a pinhead or sometimes lodges on the bodies or branches in the form of copious gum masses flowing downward on the bark. When this exudate comes from newly invaded tissues in the summer time it is milky white from the numerous germs present in the liquid. Later, the gum oxidizes into an amber yellow or slightly brownish, then finally into a dark brown or almost black gum. Sometimes when it exudes from the bark or larger branches it is reddish brown from the beginning, occasionally it is quite red in appearance getting its color from the red decomposing bark. When the blight is running rapidly in the tissues, the margin is at first merely water-soaked or very slightly water-soaked in appearance. This is particularly to be noted in the bark and infected young fruits of apple, pear or quince. Later on various stages of its discoloration follow as the germs fully occupy and decompose the tissues.

(To be Continued.)

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Modern 7-room bungalow, close to West Main street, lot 50x132, \$50 range connected with hot-water tank goes with the property; price for a short time, \$2500.  
Ten lots on West Second street; these lots are worth \$300 each; improvements on property worth \$800, making a value of \$3800, that can be bought at \$2750.  
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### PAVING STARTS IN GRANTS PASS

Warren Construction Company Sublet Curb Work to Clark & Son—Start Grading of Main Street—

(Courier.)  
The great event in our local history began when work on G and Sixth Streets was undertaken which really inaugurated important public improvements in the city of Grants Pass. In the minds of the average citizen there appears a vision of beautiful streets which are to be forever made free from the everlasting mud which has for so many years been a real disgrace to the otherwise beautiful city. Our municipal fathers, the citizens' committee and the city engineer kept at the proposed improvements until every detail was finally worked out, the contract let and the work for which we have so long been waiting is actually in sight.

On Monday morning of this week Contractors Clark & Son began at the 4th and G Street intersection on the laying of the new cement curbs and extending the old sidewalk out to the 12-foot line, as provided for under the plan of street improvement. At the same time Manager Clark, of the Water and Light Co., put a force of workmen to removing old water mains and replacing the same with a much better quality of new pipe and all required modern gages and connections so that the pavement need never be disturbed to repair water pipes. He is also laying along the old gutter line the conduits for the light wires to connect with the cluster light posts at the street and alley corners.  
The Warren Construction Co. have sublet the cement and concrete work to Clark & Son, of this city, and the work will be superintended and inspected by Wm. Huggins, whose appointment has been ratified by the city council and citizens' committee.

### Canton RESTAURANT

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5-Room house, two nice lots, good well and city water; beautiful roses, fine loganberries, strawberries and garden. House completely furnished. Close to Oakdale. A dandy home for \$3,700. Terms.  
2 Fine lots and one room, of nice bungalow, finished; close to Oakdale in good locality. A good buy at \$1,100.  
4-Room house and 90x100-foot lot on good street for a quick sale at \$1,150.  
5-Room cottage, furnished, sewer connections, electric lights, oak shade trees; 5 blocks from park. \$2,200.  
2 Fine lots, close to coming pavement, east front, 50x186 feet. Cheap at \$100 each.  
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### Modern Cottage For Sale

A neat, modern, five-room cottage, close in on Oakdale, east front, fine lawn and shrubbery, cement walks and curb, paved street, large range goes with house, large barn; lot 50x145.

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