

"The disease is characterized by the formation of galls at the crown of the plant. The galls are more abundantly produced at the base of the stem, but may occur on the upper part of the root. The galls in some cases occur several inches above the ground on the stems. They present a very much roughened exterior and vary in size from that of a pea or smaller up to 4 or 5 inches in diameter. In form they are often confluent. Seriously affected plants are killed. Usually the disease will be found in the field in patches in which many of the plants are dead or in various stages of decline. The diseased plants are of a weak growth; the foliage is yellow and the leaves reduced in size."* If any case of this disease is suspected, specimens should be sent to the Plant Pathologist for examination, in order that proper measures may be taken for its eradication should it be introduced.

APPLE.

ANTHRACNOSE (*Neofabra malicorticis*).

This disease, also known as black-spot canker and Pacific Coast canker, is apparently confined to the Pacific North-west. In this Province it is serious only in the Coast and Island sections, although it also occurs at various points in the Interior. The disease may attack the fruit, causing a rot, but the chief injury is done by the formation of cankers on the tree. These are most abundant on the smaller branches, but may occur on the larger limbs or on the trunk in the case of young trees. Complete girdling often results, usually from two or more cankers becoming confluent.

Infection takes place at the time of the fall rains. Small injuries may facilitate this, but are not necessary, the fungus being capable of penetrating uninjured bark, probably through the lenticels in most cases. The first apparent result of an infection is the formation of a small, circular, reddish-brown spot on the bark, extending to the underlying tissues. The development of these incipient cankers is arrested during the winter months, but when the sap begins to rise in the spring activity recommences, the canker extending most rapidly up and down the branch. By the time growth becomes active in the tree the cankers cease to extend, and a well-marked crack is formed, delimiting the canker from the surrounding healthy tissue. The surface of the canker is now shrunken and shrivelled. The dead substance gradually disintegrates and falls out, although remains of it may cling to the wound for two or three years. If the cankers have not been too large the wounds will gradually heal over, but in the case of large wounds there is danger of various wound-parasites entering before the healing process is complete and setting up decay in the wood.

From the above it will be seen that the canker is only annual in its activity. The fungus, however, continues to live for two or three years in the dead tissue of the canker, producing large numbers of spores which may bring about new infections. During summer numerous little pustules appear on the surface of the canker, beginning at the centre of the area, and later extending to its margin. The bark at these points finally cracks, exposing an underlying mass of fungus-tissue from which the spores are produced. These are mature in late summer or early fall, and are scattered by wind and rain. Cankers one year old or more, therefore, while in no danger of directly spreading, are a fruitful source of new infections.

On the fruit the fungus causes a rot which may occur both in cellar and cold storage. Typical rot has also been recorded in apples still on the tree.

Control.—Since the canker is an annual the most important thing is the prevention of new infection. Spraying with double-strength (8-8-40) Bordeaux mixture is the most effective means of protection, but it must be done before the fall rains begin. Where the disease is bad it may be necessary to repeat this after an interval of one or two weeks. Where late varieties are grown it may be too late to be of much use if left until the fruit is picked. Lime-sulphur seems to be much inferior

* Biennial Crop Pest and Horticultural Report, 1911-12, Oregon Agricultural College Experiment Station.