

is of long standing. If anything effective is to be accomplished in its control, extensive and radical measures must be adopted, not only by those directly interested in the production of fruits subject to its attack, but also by those authorities who have under their control the roadsides and waste places where trees subject to its attack harbour the disease. Other trees besides the apple, pear and quince, both cultivated and wild varieties, subject to the disease, are the hawthorn (*Crataegus*), June berry (*Amelanchier*), and the mountain ash (*Pyrus*).

THE DISEASE, ITS CAUSE AND APPEARANCE.

CAUSE.—*Bacillus amylovorus* (Burrill).

B. amylovorus is an organism averaging about 1.5 microns long and .6 microns broad. A micron is 1-25000 of an inch, therefore it would take over sixteen thousand placed end to end, or over forty-one thousand placed side by side to extend one inch. As seen through the microscope, 1-12 oil immersion lens, it appears sometimes oval in shape, sometimes almost spherical, but more often cylindrical with rounded ends. (Figs. 1 and 2.) The cells are usually single, though often in twos, seldom in threes or chains. Often, however, they are found in small clumps, the organisms evidently being matted together by the interlacing of their flagella.

They have from one to four flagella, usually only two, which are from 6 to 12 microns long and usually situated at or near the poles. (Figs. 3 and 4.) They are usually actively motile.

GENERAL APPEARANCE OF THE DISEASE IN THE TREE.

The disease may occur in the bark of the twig, the branch, or the trunk of a tree and also in the fruit, more especially in immature fruit. Any one or all of these parts in the same tree may be affected, and the disease may spread from one part to another.

The disease is found on the apple tree more often in the form of twig blight, and on the pear tree in the form of body blight. Cases of body blight, however, occur in apple trees and cases of twig blight occur in pear trees. The reason that body blight is more common in pear trees appears to be because the bark of the pear tree is more spongy, thicker, and more juicy than is the bark of the apple tree; and these conditions are most favourable for the rapid and continuous development of the organism. These conditions exist in the young growth, *i.e.*, the twigs, water-sprouts, and suckers of the apple tree; and hence when the organism finds entrance to these parts the disease develops there and progresses down the affected part until it meets with adverse conditions, which it usually finds in the bark of the large branches or the trunk of the tree. And so, as a rule, it is only the young growth of the apple tree