

BLACK ROT OF THE GRAPE (*Laestadia Bidwellii*.)

This fungus, aided by moisture and high temperature, is often associated with rank and succulent growth. It affects leaves, shoots and berries, usually making its appearance in June, in the form of circular reddish brown spots, of lighter color in the centre. They are more distinct on the upper surface of the leaf, than on the lower. Around these diseased parts, minute dark colored pimples can be seen. These show the various stages in the growth of the fungus which we shall describe, when referring to the attack upon the fruit. On the shoots the disease causes long brown spots somewhat depressed. It is not in the attack upon either leaves or shoots that much damage is sustained, but when the fungus reaches the fruit. The berries are attacked shortly after the leaves show the presence of the disease. The trouble often shows itself as a small brownish spot on the surface, near the stem end; this gradually spreads and covers the whole surface, changing in color, till it becomes quite black and the berry eventually withers, assuming a dry, shrivelled up condition. (See figs. A and B, showing unaffected and affected fruit.) An examination of the surface reveals many small black pimples in which the fungus can be detected; these pustules can be seen by the eye, but sections of them under the microscope show many interesting stages in the life history of this parasite.

Its thread-like structures with partitions, during development not only grow between the cells, but in some cases penetrate them. Among the tissues of the shrivelled berries minute cavities are seen in which spores are developed. These cavities may be quite near each other, but contain entirely different forms of spores, for we find four kinds connected with the spread of this fungus. When mature the spores escape through minute openings on the surface of the pimples referred to.



Fig. 3.

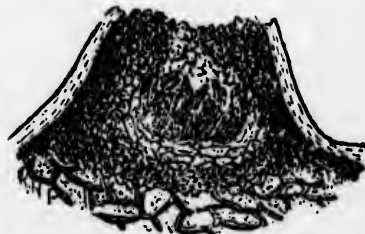


Fig. 4.

Among the most important germs in spreading the fungus during