

they have created in the affected portions of their host-plants. Small as they are, they consist of masses of tubes which correspond to some extent with the parts of the higher plants. Certain of these tubes, or hyphæ, as they are called, may constitute a more or less tangled mass amongst the tissues of the stem, leaf, or fruit on which they are growing. These play the part of roots, and are spoken of collectively as the "mycelium." Others grow above the surface of such leaf, &c., giving rise to minute ovoid or globular bodies; these tubes correspond with the stems of higher plants, and are called "aerial hyphæ," while the bodies to which they give rise coincide with the seeds and are termed "spores." The spores, which depend largely on the wind for their dissemination, are the chief means by which the fungi perpetuate their kind, though they may do so by portions of the mycelium. The spores are developed during the growing season in enormous numbers, and are launched into the atmosphere, where they float about or are blown by the wind, sometimes for great distances. It is well known that certain fungi show a preference for particular plants; thus black-spot is particularly partial to the apple and pear, while it fails to grow at all on many other fruit-trees. All, therefore, that the spores require is that they shall alight on their own host, and that climatic conditions shall be favourable, when they will soon proceed to germinate and "take root." Spores produced later in the season often adhere during the winter months to the stems of plants, resuming their activity on the advent of spring.

FUNGICIDAL ACTION OF BORDEAUX MIXTURE.

This brings us to the point where the use of Bordeaux really comes in. The special feature of Bordeaux mixture is not to exterminate the mycelia of fungi; in many cases it would be quite impossible for it to do so without at the same time destroying the tissues of the host. The main object of its use is to kill the spores before they have penetrated the surface on which they are lodged. Bordeaux should therefore be in position before or as soon as the spores. It is well to point out, however, that in the early stages, or in mild forms of fungoid attack, Bordeaux mixture most certainly has its use.

After its application Bordeaux mixture undergoes a considerable change: the water of which it is composed evaporates off, and there is left a bluish powdery deposit on the surfaces to which it is applied. This is a copper compound which under the influence of dews and light rains slowly dissolves, keeping the surfaces continually supplied with a protective film. So long as this condition is maintained alighting spores are destroyed.

WHEN TO SPRAY.

In the orchard undoubtedly the most important time to spray, generally speaking, is when the trees are leafless. At this time mixtures