

THE BLACK KNOT.

As the leaves fall away from the Plum and Cherry trees, conspicuous excrescences are frequently seen upon the branches, which, from their shape and color, have appropriately received the name of Black Knot. This is an old enemy of the fruit garden, and its ravages have been so severe in some parts of the country, especially the older sections, that the raising of Plums has been given up. Though known as a very destructive growth upon the trees for a long time, it is but within the last few years that its nature has become known beyond a doubt, through the careful and prolonged study of scientific men.

The history of the investigations into the nature of the Black Knot would make a volume of no small size, and of interest in more ways than one. The insect theory prevailed for a long time; and there seemed to be very strong indications that the Knot was similar in origin to the galls of the Oak, Willow, etc. The fact that the excrescences, especially the old ones, contained living insects, their eggs, and remains of the dead, was taken as positive evidence that the "house" they occupied was built by the indwelling insects. The Knot is now known to be of fungus origin, and therefore is related to the Peach curl, Potato rot, Wheat rust, and a long list of other microscopic plants too small to be seen, except by their destructive effects, as they prey upon the higher forms of vegetation. The fungus, or parasitic plant, was first described in 1838, but it remained for Dr. Farlow, of Harvard University, to publish a full account of the minute plant, and its methods of propagation and growth. I can do no better than to give the argument against the insect theory, or for the fungus nature of the Knot, as briefly presented by Dr. Farlow: "First, the Knots do not resem-

ble the galls made by any known insects. Secondly, although insects, or remains of insects, are generally found in old Knots, in most cases no insects at all are found in them when young. Thirdly, the insects that have been found by entomologists in the Knots are not all of one species, but of several different species, which are also found on trees that are never affected by the Knot. On the other hand, we never have the Black Knot without the *Sphaeria morbosa* [the scientific name of the fungus], and the mycelium of that fungus is found in the slightly swollen stem, long before anything that could be called a Knot has made its appearance on the branch; and, furthermore, is not known to occur anywhere except in connection with the Knots."

The Knots range in size from an inch to a foot in length, usually growing upon one side of the branch, causing it to bend away from that side, or twist irregularly. The parasite first makes its appearance in the spring, when the affected branch increases rapidly in size, and becomes soft in texture. The bark is soon ruptured in various places, and the soft interior comes to the surface, expands rapidly, and soon turns green. Multitudes of minute spores are formed on this exposed green surface, which fall away and are carried by the winds, etc., to other twigs, thus propagating the disease. These spores continue to be formed until late autumn, when the surface of the Knot takes on a dry and black surface; in the meantime, insects may have taken possession of the soft tissue within, and so eaten and destroyed it that at the end of the season only a thick, hard crust, or shell, remains. Another kind of spore is found in small pits and sacks of the crust, and as they form late in autumn, they are the winter spores of the fungus, and the form in which the pest is carried through the winter. These spores ger-