

a quarter of a mile from it, on lighter soil, they rot quite badly. Another thing about plums: if you plant them where they are open to the air it is a great preventive of rot. If they don't get the wind to keep the dampness away they are very apt to rot.

Mr. HILBORN: Isn't that true of peaches

Mr. CLINE: I think it is, even in grapes it is an advantage to cut away some of the foliage, if very heavy, and let the air in underneath.

Prof. CRAIG: I am very glad indeed to have evidence coming in from so many sides on this question. It is especially gratifying to me that the growers are taking it up and getting practical results. Using the carbonate of copper in suspension without the ammonia is a valuable and cheap preventive for fungus.

Dr. BEADLE: We should emphasize the necessity of spraying early. When this fungus appears so that we see it, it has gone to seed. The spores, as we call them—or seeds, as they might be called—fall upon the fruit, and in favorable circumstances they spread immediately—take root, as you may say—into the tissues of the plum. After that has taken place, all the carbonate of copper in the world won't be of any possible benefit—the fungus has got into the tissues of the plum, and is out of reach. The great point is to kill the first crop.

Mr. CASTON: We are told by the scientists that the germs of all this fungus are ever present with us, but one year is more favorable than another. I find they do the greatest damage in wet, close, damp weather. If we have a breeze blowing so as to keep the grain moving, we have no rust on the wheat. Do these fungicides kill the germs, or does any aroma given off repel the germs? Does any one know whether the fungus may not take the leaf or the young wood and go up by the way of the stem into the plum, so that the rot may be from the inside instead of the outside? How does this spraying mixture act in repelling these diseases? Is it of much practical value in a season that is favorable for the propagation of these diseases? Will the game be worth the candle, considering the cost of it?

Mr. ALLAN: It is like mildew in grape. The same principle applies. We used to use the sulphur on the grape about the time the mildew appears. Now we scatter the sulphur upon the soil; and the result is, so long as we have a good current of air surrounding the vines, we find very little difficulty in subduing the mildew. That is the reason I introduced that point into the discussion—as to using the solution before the leaf appears on the plum tree at all—and the important point, in the fall of the year, of seeing that your plum trees are perfectly clean—not only the trees themselves, but the soil under the tree. All dropped plums should be gathered up and destroyed, because those are all contributing towards the disease we are fighting.

Mr. HUNTER: Has any gentleman had success in spraying this spring for the fungus? It rained so incessantly that any solution you might put on would be washed off.

Mr. ALLAN: I have had success, although the continual rain was a perfect nuisance, and you had to keep up a continual spraying. I did so on a few trees; but I found the first spraying was the all important one.

The SECRETARY: I think several of the instances given have reference to this year. With regard to Mr. Caston's question: How does the poison act on the fungi? As I understand it, it acts by direct contact. The fungus is a little plant growing upon the leaf or fruit, and it appears that it is easily injured in those cases—more easily acted upon than the foliage of the tree—fortunately for us, because if we do not make our poison too strong, we can destroy the fungus without injuring the foliage. The spores can be affected by the poison as well as the little plant itself. That is the explanation of the utility of applying poison before the foliage appears; because these little germs must live somewhere through the winter, and it is thought they do live through upon the old leaf, upon the rotten fruit; and some have thought that the apple scab is bred upon the little buds and is waiting for the time that it can damage the foliage.

Mr. CASTON: Will the early application of the fungicides affect the foliage so as to render it proof against attacks?