

cerned whether it is or is not, except as an entomologist. We have been advocating this remedy for ten years, and if it is a failure our work has to be done over again. The number of successful experiments has so far overbalanced the unsuccessful that the latter are not worth mentioning. The records of five years correspondence are almost universally in favor of spraying; yet we must not forget that failures are often not reported—and that is the one question I want to ask you here. Are there any that have failed, after having taken the proper precautions, and carried out the directions with care? I know very many instances of success. I know very well that Prof. Weed, of Ohio, sprayed alternate trees with Paris green, and checked the trees that were left unsprayed. On the unsprayed trees most of the plums fell; on the sprayed trees 75 per cent. remained. I remember when the remedy was first proposed, Mr. Hilborn sprayed here and there through an orchard of a hundred trees; and the sprayed trees were the only ones that had any fruit on them. Mr. Rolph has told me of an instance where he sprayed, and the crop was so large as to break down the trees. I have tried spraying, and my correspondents have tried it, and it has been successful. Now, if this method is a failure we want to know it so that we may change our methods and save the loss that has occurred. My conclusion in regard to spraying plum trees for curculio and apple trees for the codling moth is that the protection is sufficient in all instances to warrant people in applying it. Mr. Sidney Fisher, of Brome, in the County of Knowlton, Quebec, never sprayed his trees till this year, when he used the Bordeaux mixture and Paris green to treat at the same time the black spot of the apple and the codling moth. I saw his orchard in September, and he challenged me to find a single injured apple in the orchard. There were some trees that were well loaded with fruit. I could not find a single apple in his orchard that had a codling moth injury in it, and I don't think there were any that had black spots. From my experience I think the generalization may be made that 75 per cent. of the crop of plums and apples may be saved by spraying trees—in proper proportions and at proper time—with these poisonous arsenites. If I am wrong in that, it is important to the rest of Canada that I, at any rate, should know it, because I have the responsible position of making the recommendations every year to the farmers and fruit-growers of Canada.

With regard to the use of lime mixed with the arsenical poisons, for my own part I prefer Paris green, and I put in my mixtures an equal amount of Paris green and freshly slaked lime. It is true that London purple, being an arsenite of lime, is a little more convenient to mix with the lime mixture called Bordeaux mixture; but if you put a small surplus of lime in your Bordeaux mixture, Paris green is equally successful. Paris green is a substance with an exact chemical formula which demands a certain percentage of arsenic. London purple, being a waste product, has not that set and constant amount, therefore it is not so sure. What we want is an exact proportion of poison, so that we may get the result that we look for.

Mr. BOULTER: Which is the best time to spray the plum trees?

Prof. FLETCHER: As soon as possible after the flower has dropped.

Mr. BOULTER: And the apple tree?

Prof. FLETCHER: Directly after the petals have dropped.

Dr. BEADLE: I think it is advisable to spray before the blossoms open at all.

Prof. FLETCHER: For what?

Dr. BEADLE: For the scab.

Prof. FLETCHER: Oh, for the scab on the apple, certainly.

The SECRETARY: Sometimes spraying for plum curculio seems to be a perfect success, in other seasons it does not. How is it that in some seasons we seem to attain perfect success, and in others we do not? I have been wondering whether it was not because we did not make the first application early enough, and whether it is not an advantage to apply it on the young leaf even before the blossom appears at all? Do you think that the parent curculio eats the young leaves, and that by poisoning the young leaves they might thereby be destroyed?