

bushes down into it and held it there so that every berry that was then formed was thoroughly covered, and I noticed berries afterwards with a coating of the mixture on the outside, and actually the mildew developed right there almost underneath that coating, so I was satisfied then that there was something very wrong with either myself or the mixture, because it didn't have any effect.

Mr. BURRELL: I don't think Mr. Race's experience is exceptional, because Mr. Morton, of Wingham, told me last winter that he had given it a very thorough trial on gooseberries with the same negative results that Mr. Race found, and another very careful experimenter, Mr. Pafford, of Niagara, had found it not so successful. In my experience I cannot say I have found Bordeaux mixture absolutely successful for mildew on the gooseberry.

Mr. A. H. PETTIT: Does Dr. Fletcher class the black rot as mildew? The sulphur remedy spoken of by Mr. Orr we find very well in regard to one kind of mildew, but there is another kind of mildew that Grimsby has not been attacked with at all.

Prof. FLETCHER: To state the matter shortly, there are two mildews of the grape—the downy mildew and the powder mildew. These two names are so close alike that they are somewhat confusing. The powdery mildew, which is prevalent in the Niagara district, is the one which is treated with sulphur with considerable success. The downy mildew, however, is a much more serious disease, and one which is not prevalent in the grape-growing district of Niagara, but is very prevalent in some other parts of Canada. For the powdery mildew the sulphur is the remedy, and can be used in a paying manner, but for the other it is no use at all, and you must use the Bordeaux mixture, and that is the only remedy that I believe can be used effectively. It is the most serious disease that is at Ottawa, and it is not an unusual thing to see a grape vine drop the whole of its crop after spraying. These matters have been treated at great length in the reports of the Society, and it is unwise for anybody to take a verbal statement such as this is. There are endless printed accounts of these different diseases. We have them in the *Horticulturist* and in agricultural reports; you can get these from Guelph and Ottawa, and it is wise to get these printed reports and follow them—not make them as most women make a pudding, have the recipe before them and never follow them. Most people think that, when spraying, if a pound of an ingredient is good two pounds would be better; but get those rules and follow them accurately and you will get results. I am surprised at Mr. Race taking all the trouble he did with the Bordeaux mixture, and not using first of all the sulphate of copper spray, which is very much more effective. Of course I don't say any of these remedies are going to be perfectly effective every time; in fact I will tell you before you begin that they are will not, but the spraying experiments conducted from year to year show it is a paying operation, and a man who says he has not time to try them is the man who says he has not time to make money, and if a man has not time to save 75 per cent. of his fruit crop he has not time to save 75 per cent. of every dollar he makes.

Mr. MCKINNON: I have had no mildew on any of my grape vines since five years ago till this year. This year I sprayed more faithfully than ever before, and nearly all the Rogers vines were affected, and some of them seriously affected, with mildew. I found that especially the case where they grew most rankly on the richest soil. The Niagara were slightly affected, but a great many Rogers vines were absolutely worthless, although they were faithfully sprayed, even more carefully than in former years.

The PRESIDENT asked Dr. Taft to give his views.

Dr. TAFT. We have been doing a good deal of spraying on all these lines, and as the gooseberry was mentioned I would say that I have gone a little further than anyone yet, from the fact that I used three different materials for spraying. The first is this copper of sulphate solution that Dr. Fletcher advises, applied in the spring before growth starts. Then both against mildew and currant worm I used Bordeaux mixture with Paris green about the time the leaves are half open. Before they blossom, and as soon as the fruit is set, I spray again with Bordeaux mixture and generally add Paris green; and after that, for the mildew, I have relied on the liver of sulphur and find it is very effective and does not spoil the fruit; it is nearly harmless in every way except against

the mildew. Regarding spring apple gooseberry something downy mildew further so grapes entered sprayed very first spray so don't or may be all

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