

traced, inside the tissues of the potato plant, from the tuber up through the stems to the leaves where the spores are formed; the spores under favouring conditions, infest either the leaves of neighbouring plants, or, falling to the ground, infest the tubers. The presence of rot in a crop, it is true, is largely affected by the meteorological conditions of the season, and we find that this is the case with all fungous diseases, but the season does not produce the disease; it only gives the conditions necessary for its development, provided that the spores are present; and unless these are there, the rot cannot occur. This is the reason why I have been advocating the use of preventive treatments which shall protect fruit and other crops against their fungous enemies whatever the season may be. With regard to the greater development of the disease where there is a heavy growth of foliage, I am not prepared to say whether this is the case or not; but if it be so, it is probably due to the same reason as causes a more probable occurrence of epidemics in densely populated places, where hygienic conditions and the food supply are not properly regulated.

*By Mr. Semple :*

Q. In the very dry season in Ontario there was scarcely any rot.—A. That is frequently the case; but on heavy lands of restricted area it will often develop when there is none in adjacent fields. In fact, some people, having observed this, say, though it is not actually the case, that clay lands cause potato rot.

Mr. COCHRANE.—The rot never develops on loamy land; it is on the clay land.

Mr. MACDONALD (King's, P.E.I.)—I quite agree with what Mr. Fletcher said about the disease developing under conditions of warmth and moisture. There was not a sign of rot when our potatoes were taken out of the ground; but as soon as they went into vessels they commenced to rot at once.

Mr. FLETCHER.—Now, I should like to tell you, gentlemen, of an experiment we tried on a large area at the farm. I had six plots of potatoes, 33 feet across the head and extending 60 rows into a field. They were in the middle of the field, and were sprayed with six different mixtures. From the distance of nearly a mile we could see that plot in the field as a distinct green patch, while all the other potatoes around it which had not been sprayed were ruined. The effects upon the crop were also marked. Where the leaves had been preserved by the application, the potatoes were better and almost entirely free from rot. The improvement was far greater than would pay for the application—sulphate of copper (blue-stone) costs only four cents a pound, and the value of the lime is, of course, according to the distance from the point at which it is produced, but that is not large. It took about 60 gallons of the mixture to treat the six plots: so you see it is not very expensive, and it certainly paid. The chief primary expense is that of a proper spraying pump, but it is going to pay any one to get one. In the Ottawa district, last season all the potatoes were much diseased, except within a few miles of the farm. I anticipated that we should have a bad season here; last June was extremely wet and July was extremely dry. Our experiments were interfered with by the drought, which actually killed some of the potato plants before the time for treating them. I should have had otherwise exact figures to lay before the committee of the yield of these plots to allow comparison with the untreated plots. We are not likely to have such another season next year.

*By Mr. Bowers :*

Q. Would excessive use of this experiment be hard on the plant?—A. No, sir; I tried more than double the strength I have recommended and it had no bad effects on the plants.

*By Mr. McMillan (Huron) :*

Q. How would it do to spray potatoes with Paris green to destroy the potato bug. How would it do to mix Paris green along with your solution?—A. Quite well—I did that, but you must use the Paris green which is far better than London purple. London purple is merely a subterfuge because it is a little cheaper. There