

the consumer, and consequently reduces the market value. There is also much greater wastage in preparing such potatoes for the table. Severe attacks also cause a loss in the yield, although the amount of this is difficult to estimate. The scab-spots, especially in the "pit" form, afford an opportunity for the entrance of various rot-producing fungi and bacteria. This is at times particularly noticeable in fields which have been excessively irrigated. In such cases, if scab is also present, much rot may be found starting at the scab-spots.

The disease is due primarily to a bacterial organism, which invades the superficial cells of the developing tuber. As a result, the corky tissue which forms the normal skin becomes excessively and abnormally thickened at this point, giving rise to a scab-spot. From recent investigations it appears probable that this organism is naturally widely distributed in the soil and able to produce the disease if conditions are favourable. Amongst the conditions predisposing to the disease, an alkaline or insufficiently acid condition of the soil and heavy dressings of barnyard manure are probably at the same time the most important and the easiest to control.

Control.—Avoid the use of alkaline fertilizers, such as lime, shell-marl, wood-ashes, etc., on land that is shortly to be planted to potatoes. The use of acid fertilizers, such as superphosphate, is beneficial. Good results have been claimed from ploughing-in a green crop such as rye, but this is not always successful; sometimes, indeed, it may have the reverse effect. Heavy applications of barnyard manure should not be made to the potato-crop, but, if necessary, given at some other point in the rotation. Seed should not be planted in contact with the manure. Disinfecting the seed before planting has been extensively practised, often with the best results, sometimes without much benefit. Much depends upon the degree to which the soil has become infected, and the care with which the disinfection is carried out. The purpose of it is to destroy the scab organisms on the tubers or in the scab-spots, and thus remove the source of infection. Obviously this would not be of much value if the soil is full of the germs. It may be argued that if the scab organism is naturally present in soils seed-treatment would be useless, but this does not necessarily follow. Those organisms coming directly from an attacked potato are likely to be much more virulent, and would be concentrated at the spot where the new tubers are being formed, thus giving every opportunity for infection. As a matter of general precaution, not against scab merely, but against other diseases also, tubers apparently free from disease should be selected for seed purposes, and should be disinfected to destroy germs of disease that may be adhering to the surface. Either of the following methods may be used:—

(1.) *Formaldehyde (Formalin).*—This when purchased should be guaranteed a 40-per-cent. solution; 1 lb. of this is added to 30 gallons of water and the tubers soaked for two hours in it. They are then taken out, drained, and spread out to dry on a clean floor, or on sacks or canvas. These should have also been previously disinfected by being dipped or washed down, as the case may be, with the same or, preferably, a stronger solution of the same substance. The advantage of formaldehyde is that, although irritating to the skin, it is not otherwise poisonous, does not corrode metals, and treated potatoes may, if they should not be planted, still be used for table purposes or stock-feed. A certain portion of the liquid is necessarily lost in the treatment of each lot of potatoes, but that which is left does not become weaker and may be used repeatedly.

(2.) *Corrosive Sublimite (Mercuric Chloride).*—A solution of 1 part in 1,000 of water is used. For small quantities it is most convenient to buy the prepared tablets, procurable at any drug-store, and which are each of known weight. Usually they are so prepared that one to a pint of water gives a 1 to 1,000 strength. For larger quantities the chemical may be bought in bulk and used at the rate of 4 oz. to 25 gallons. Corrosive sublimite is a much more powerful disinfectant than formaldehyde, but is a violent poison if taken internally, and must be used and disposed of with great care. The solution also corrodes metals and must therefore be prepared in a wooden or earthenware vessel. Treated potatoes retain enough of