

Infection of the tubers may apparently take place at any time if spores of the fungus come in contact with them under conditions of sufficient moisture and warmth, but it is facilitated by injuries which break the skin. Much infection may take place during the time if the tops have not been dead long enough to ensure the destruction of the spores also. Where the tubers have been piled in the field, and covered, with infected tops still producing spores, every tuber may become infected. The disease may also spread extensively in storage if the tubers are kept too warm and moist.

Control.—Avoid the use of infected tubers for seed, no matter how slight the infection may appear to be. Where the disease has been at all severe, do not dig until the tops have been dead at least a week. Cellars or other storage-places should be kept cool, dry, and well ventilated. The most important measure of protection consists in spraying the growing plants at proper intervals. Since the disease is carried to the tuber from the tops, it follows that the checking of the disease above ground will protect the tubers. The most satisfactory spray is Bordeaux mixture, lime-sulphur having been found injurious. For earlier sprayings a strength of 4-4-40 may be used; for later ones, when the disease is liable to become epidemic, 6-6-40 is better. No definite data have been collected here as to the usual time when the first infections are noticed, but generally, as far as this disease alone is concerned, if the first application is made about the blossoming-time of later varieties adequate protection will be afforded. The number of sprayings to be given will be governed by conditions. In wet seasons, when the disease is liable to be severe, spraying every week or ten days may be necessary to control it. Usually about three applications are sufficient. Since the disease varies greatly in severity from year to year, being very bad one year and perhaps almost absent the next, it was at one time questioned whether spraying each year as a safeguard would be profitable, taking one year with another. Extensive experiments have settled this point conclusively, since it has been found that properly made Bordeaux mixture has a beneficial effect on the foliage, enabling it to keep green longer and do more work. The result is an increased yield, so that even if no blight appears the cost of spraying is repaid in whole or part. In seasons when the disease is bad, spraying may make all the difference between a good yield of marketable tubers and a total crop-failure.

WART-DISEASE (*Chrysophthia endobiotica*).

Also known by the names of potato-canker and black-scalb. This disease is not known to exist in Canada at the present time, and as a complete embargo is in force against the importation of potatoes from any country where it is known to occur, we have grounds for hoping that we may remain free from it. The disease occurs to a considerable extent in Great Britain and Ireland, and these countries are, therefore, included in the embargo. The attempt occasionally made to bring in small quantities of seed-potatoes from these countries in the mails is illegal, and punishable with a heavy fine. As the disease is a very serious one, it is desirable that growers should be able to recognize it, in order that they may report its presence immediately, should it at any time be discovered. Circular No. 4 of the Dominion Department of Agriculture, mentioned at the head of this article, gives a very good illustration of an affected tuber. Anything suspiciously like this should be sent to the Plant Pathologist for examination.

COMMON SCAB (*Actinomyces chromogenus*).

This disease is so common that a description is hardly necessary here. The most important of its characteristics will be pointed out in the consideration of the next disease—powdery scab. Common scab attacks the tubers only, and varies from a rough corky spot, usually distinctly raised above the surface of the tuber, to an irregular pit. Only one or two of these spots or pits may be present on a tuber, or they may be so numerous that the entire surface is disfigured with them. The chief injury lies in the unsightly nature of the scabby spots, which is objectionable to