We hope, however, that these restrictions will not be without some good results in the end to growers in this country. The attention which growers must now pay to the subject of the tuber diseases of this erop, and the measures it will be necessary to take against Powdery Seab will, it is confidently hoped, have the effect of reducing potato diseases in general, and of raising the standard of potato-growing in no inconsiderable degree.

NATURE AND SYMPTOMS OF POWDERY SCAB.

The first thing necessary is to obtain clear and definite knowledge of the indications which serve to distinguish this discase from others. It will then be desirable to consider, briefly, its nature and the means by which it is spread, in order that the reasons for the control measures to be afterwards given may be properly understood.

There is only one other disease with which Powdery Scab is likely to be confused, and that is the Common Seab, one of the commonest troubles of the potato grower. (See Fig. 1.) In most cases the two diseases are readily distinguished at sight by one familiar with the symptoms, but there are a certain number of cases met with, in which the use of the microscope may be necessary for complete certainty. On examining a typical case we find that the skin of the potato is raised up in circular, oval, or elliptical pustules. (See Fig. 2.) These have an even outline, and when young are covered by the smooth unbroken skin of the tuber. They may be few in number or so numerous as to cover a large portion of the surface. In the latter case several spots often coalesce to form one large seab.

A case of Common Seab compared with this stage of Powdery Seab differs in the more irregular margin of the spots, and by the surface being rough, irregular and corky, or sometimes forming an irregular pit in the surface of the tuber instead of being smooth and even.

As the Powdery Seab spots reach maturity, the skin covering them is easily broken, when there is disclosed a mass of greenish or brownish powder, from which the disease takes the name of Powdery Seab. On rubbing away this powder, it will be found that the pustule is bounded beneath by a smooth brownish membrane, which limits it quite sharply from the normal tissue. In potatoes which have been much rubbed in transportation this may be the only remaining indication of the disease. In the case of Common Scab there is no powdery mass filling the interior of the scab spot, but only a superficial irregular layer of eorky cells. There is also no definite layer separating it from the underlying healthy tissue.

The powdery mass, under the microscope, is seen to consist of innumerable grainor balls of an irregularly rounded form, each of which is made up of a large number of very minute round spores, and hence termed a "sporc-ball." Under the right conditions (moisture, warmth, etc.) the membrane enclosing each spore may break and the living contents of each individual spore emergo as a so-called "swarm-spore." This swarm-spore possesses, to a certain extent, the power of moving about by its own efforts, and should it come into contact with a young potato tuber may effect an entrance into one of the more superficial cells. Within the cells it undergoes certain changes, while at the same time the cell is stimulated to more rapid multiplication. so that from one or several neighbouring infections a mass of cells is formed which projects as a small wart or pustule from the surface of the tuber. Each cell of this pustule will contain one or more of the Powdery Scab organisms which have developed from the swarm-spores first mentioned ,and ultimately each of these organism-changes into one of the spore-balls with which we started. In the meantime the living contents of the potato cell have been used up by the parasite within, the cell breakdown, and the interior of the pustule becomes filled with the powdery mass of sporeballs previously described.