efficient steep to be used, its strength, and the most suitable time of immersion (one hour and a half being considered much too long for farm practice).

In the following experiments tubers showing well-developed sclerotia were chosen. They were washed free from adhering earth and allowed to dry. The solutions were prepared in large glass vessels, and the tubers immersed for definite periods of time, then removed, labelled, and air-dried. Three tubers were considered sufficient for each phase of the experiment, and from each five sclerotia were removed and transferred to petri dishes containing certain culture-media—the most suitable being potato-dextrose-agar, which gave 100 per cent. of growth in controls. Each petri dish, by means of grease-pencil markings on the bottom, was divided into three sectors, and in each sector five sclerotia were placed. In this manner economy of media and petri dishes was obtained.

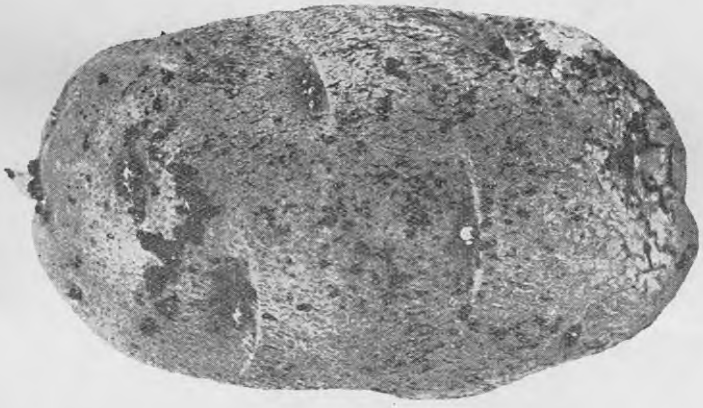

FIG. 1. POTATO TUBER COVERED WITH SCLEROTIA OF CORTICIUM-DISEASE. TWO-THIRDS NATURAL SIZE.

[*Photo by H. Drake.*

During the course of each experiment cultures were examined every twenty-four hours for five days, the final examination being made under the dissecting microscope. The cultures were then discarded, for it was found that if treated sclerotia made no growth before the third day they would not grow at all.

MERCURIC CHLORIDE ($HgCl_2$).

The first series of laboratory experiments was undertaken with a view to determining whether the mercuric solutions recommended would really kill sclerotia, and with the additional object of cutting down the time of immersion. The following strengths of solutions and times of immersion were used:—

Mercuric chloride—1–500, 1–750, 1–1,000, 1–1,250, 1–2,000, 1–2,500.
Times of immersion—15, 30, 45, 60, and 90 minutes.