Cytase. The greatest interest in this organism is its power of destroying the cell walls of various plants. The quick spreading nature of the rot shows that the cell-wall-destroying-enzyme must be elaborated in considerable amounts.

This enzyme was isolated in the following manner:—

Sound potatoes were peeled and pieces cut out of the centre with sterilized knives. These pieces were scorched over the naked flame of a Bunsen burner and then dropped into wide mouth sterilized flasks containing 50-200 c. c. of sterilized distilled water.

This operation, although carefully carried out in a chamber washed with corrosive sublimate, was not always successful as a number of the flasks became contaminated with foreign organism: however, some flasks were obtained which contained nothing but *B. oleraceae*, and these, after incubation at 25 degree C. for 10 days, were emptied into a fine sterilized cloth and the juice pressed out.

This juice was then filtered through absorbent cotton and treated with four times its bulk of 94 per cent. alcohol, which gave a fine cloudy precipitate. The mixture was frequently shaken and was left at room temperature for 24 hours. After the final shaking the precipitate was allowed to sediment for 12 hours when the supernatant liquid was siphoned off, and the sediment collected on a hard filter paper. washed with alcohol, dried and then a hole was made in the filter and the precipitate washed off into a sterile flask with sterilized distilled water. This solution was then forced through a Pasteur-Chamberland filter, collected in a sterile flask and 5 c. c. portions of the liquid filled into sterilized test tubes. The liquid was clear with a yellowish tinge and was quite sterile. (Incubation of tubes at 25° C.)

Twenty test tubes were thus obtained and 8 of them were treated as follows:—

4 were heated to a temperature of 65 degrees C. for 10 minutes.

4 were heated to a temperature of 212 degrees C. and then cooled.

Small slices of potato and white turnip were then cut with sterile knives and introduced into the tubes which were placed in a thermostat at 20 degrees C. At the end of 24-36 hours the tubes were carefully examined and those that showed bacterial contamination were put aside. The small pieces of tissue were fished out with a sterile spatula and placed on a slide, a cover glass placed on top and the preparation examined under microscope. The sections of turnips and potato in the boiled and heated tubes were unchanged, they were