lein, 2 per cent, of the following sugars, saccharose, lactose, glucose was added to the above medium, and the tubes sterilized at 100° C. on three successive days.

Saccharose bouillon. Both arms of the tube became cloudy, considerable sediment formed but no pellicle. Reaction after 10 day's growth + 1.8 per cent.

Lactose bouillon. After 24 hours both arms of the tube became cloudy, the closed one with less turbidity, there was some sediment but no pellicle or gas. After 48 hours, the amount of sediment increased and 1 per cent. of gas formed, subsequently the closed arm became clear, but there was no increase of gas. Reaction after 10 day's growth, + 1.43 per cent.

Glucose bouillon. There was more growth in this medium than in the others, 0.5 per cent. of gas collected on the 2nd day, wi'h no subsequent increase. Sediment very copious. Reaction after 10 day's growth, + 1.8 per cent.

Enzymes. Proteolytic enzymes, cytase, and diastase are produced by the organism. Evidence as to the formation of these enzymes is afforded by the following experiments.

Proteolytic Enzymes. These enzymes are produced in small quantities. Gelatin is slowly liquefied, blood serum even more slowly, milk is partially peptonized.

Fresh milk serum sterilized by filtration was inoculated with a culture of the bacillus, and the medium held at 25 degrees C., for 10 days. At the end of this time a portion tested for peptones gave the biuret reaction. The proteid bodies except peptones in the larger portions were precipitated with ammonium sulphate and the filtrate treated with caustic potash solution and copper sulphate gave a violet color indicating the presence of peptones.

Diastase. Diastase is produced in small quantities in ordinary bouillon. Equal parts of sugar free starch paste and thymol were mixed with a 10-days old bouillon culture and left at 25 degree C., for 12-24 hours. A test of the filtrate of this mixture with Febling's solution showed small traces of sugar to be present.

The organism when grown on potato also destroyed starch. Slices of raw potato inoculated with the organism did not give any coloration when treated with iodine, which indicated the destruction of the starch.