

considered very nearly perfect with the mesophilic bacteria. It might be expected that the same correlation would be obtained with the thermophilic bacteria. Various investigators working with the spore-forming thermophiles have reported some of these organisms to be Gram negative. The stain was made usually upon cultures at the end of 24 hours', and in some cases 48 hours', incubation. These statements would give further exceptions to the Gram-positive/spore-formation correlation of the bacteria, when their temperature requirements are disregarded.

It has been the experience of the author that some of the spore-forming thermophilic bacteria are Gram negative at the end of 24 hours' incubation. These organisms, however, were positive in younger cultures. Many strains began to lose their power of retaining the violet stain at the end of 8 hours' incubation. Opinion might differ as to whether this would destroy the Gram-positive/spore-formation correlation. The fact, however, that the organisms were positive in young cultures should be sufficient evidence to prove that the correlation is confirmed. It is probable that the change in the staining reaction has a metabolic significance, which might be utilized in systematic bacteriology. It is believed that this characteristic should be investigated and the results recorded with the description of the organism.

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Rôle of the intestinal blood vessels in canine anaphylaxis.

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The stomach, intestines and spleen of dogs were removed without interfering with the hepatic circulation. This was done by connecting the portal vein with the abdominal *vena cava* by means of a transfusion cannula, the return circulation from the hind quarters replacing the normal portal circulation. Dogs thus partially eviscerated give typical anaphylactic reactions on intravenous injection with specific foreign protein, the arterial

blood pressure falling to a third, even to a quarter, of the normal arterial pressure within two minutes.

The intestine, therefore, is not the dominant site of the extra-hepatic vascular reactions in canine anaphylaxis, as currently assumed.

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The action of glycerol on the virus of experimental typhus fever and on *Proteus* bacilli.

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Glycerol was employed as a preliminary to the study of an agent capable of destroying the infective but not the immunizing property of the virus of experimental typhus fever in the guinea pig.

Fragments of brain removed from typhus-infected guinea pigs on the second day of the fever were immersed in 1, 5, 10, 25 and 50 per cent sterile glycerol, and placed at a temperature of about 6° C. After a period varying from 7 to 22 days in the case of the lower dilutions, and from 7 to 58 days in the case of the 50 per cent dilution, approximately 2,000 minimal infecting doses of the virus contained in the washed glycerolated brain tissue were injected intraperitoneally into normal guinea pigs. The results in all cases showed that the brain was deprived not only of its infective but also of its immunizing action.

The etiological significance in typhus fever, lately ascribed to *Bacillus proteus* X₁₉ by several investigators, suggested a test of the influence of glycerol on this micro-organism. Accordingly, 24 hour agar slant cultures of *Bacillus proteus* X₂ and X₁₉ were washed off with the same dilutions of glycerol as had been used in the case of the typhus virus, and the glycerolated cultures were kept in the ice-box. At weekly intervals sub-plants were made on agar plates of 0.2 cc. of the glycerol suspensions. After 3½ months an infinite number of colonies was noted in the case of both strains, and in all dilutions, except that of 50 per cent, from which no growth could be obtained after one month.