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Demonstration of a Capsule on *Brucella* Cells.

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All smooth strains of the 3 species of *Brucella* have been found to possess a definite capsule.

The technic for demonstrating the presence of a capsule on *Brucella* is as follows: A dilute suspension of organisms is prepared in physiological salt solution from a 48-hour liver agar slant growth. A drop of the suspension is drawn across a clean glass slide similar to the method of making a blood film. Allow the film to dry in air. Place a small drop of Kesso India ink near one end of the slide and draw it over the film of organisms by placing the end edge of another slide at such an angle that the India ink spread becomes thinned out. After air drying, the spread is flooded with an aqueous solution of crystal violet (5 cc of saturated alcoholic solution of crystal violet in 95 cc distilled water). The excess of stain is washed off the slide with distilled water at the end of 2 minutes. The stained spreads are dried in air.

When examined under the microscope, magnification 1000 \times , the organisms appear as dark purple cocci or rods located in the center or near the edge of a clear area surrounded by India ink. The clear area, which is the capsule, varies in size from 2.5 to 4. The size of the capsule varies with the size of the stained cell.

The writer has met with no success in staining the capsule on *Brucella* cells.

The rough form of *Brucella* also shows a capsule. A large proportion of the cells of this form emerge from the capsule when suspended and allowed to stand in distilled water at 37°C. As the cell leaves the capsule, the cell becomes swollen and more intensely stained.

The capsule may be removed from the cell by digestion with hot chloroform-ether mixture acidified with HCl. This treatment also destroys that part of the organism which is made visible by the usual staining methods.

Preliminary studies now in progress in this laboratory show that the capsular material is composed of lipids in close combination with a polysaccharide.

Capsular swelling has not been demonstrated when organisms are incubated with specific serum.