

HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

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The Behavior of Cultures of Chick Embryo Tissue Containing Avian Tubercle Bacilli.—SMITH, WILLIS and LEWIS (*Am. Rev. Tuberc.*, 1922, 6, 21) state that tissue cultures afford a means by which the behavior of living cells toward living tubercle bacilli can be followed under experimental conditions which are not greatly injurious to either form. Such observations have shown that: (1) Tubercle bacilli were taken in by clasmotocytes, fibroblasts, white blood cells, endothelial cells, mesothelial cells, ectodermal cells, liver cells, kidney tubule cells, and cells lining the bronchioles and alveoli of the lungs. No microorganisms were observed in red blood cells, striated muscle cells, nerve cells or ciliated epithelial cells. (2) The phenomena accompanying the appearance of tubercle bacilli within these cells were precisely the same as those shown by similar cells in regard to other foreign bodies. Entrance into cells was dependent upon the consistency of the cytoplasm of the cell, the composition of the foreign body, and also the position of the foreign body in relation to the surface of the cell. (3) Contrary to the generally accepted idea, the cell did not make any active movements toward the bacillus, nor was any migration of bacilli toward the cell observed. (4) The number of microorganisms taken in by the cell and the rapidity of the process varied greatly with the different types of cells. The clasmotocytes were the most active; after that, the giant cell, the non-granular white blood cell, the granular white blood cell, and the fibroblast, in the order named. (5) Once inside the cell, the bacilli were moved back and forth in the cytoplasm in a manner characteristic of included foreign bodies. In course of time a small vacuole formed about the microorganism, which was eventually destroyed. (6) The presence of tubercle bacilli within the cell or in the explant did not stimulate the formation of giant cells. The emulsion injected into the peritoneum of pigeons produced progressive disease of moderate severity.

Experimental Studies on the Etiology of Typhus Fever.—OLITSKY (*Jour. Exp. Med.*, 1922, 25, 121) presents experiments to show that the typhus virus in the tissues of the guinea-pig during the height of reaction to the experimental disease does not lose its infecting power when the cells of the brain or of the spleen are disintegrated by repeated freezing and thawing, or by freezing and desiccating, or by crushing by mechani-