

hundred and ten days, from which the authors concluded that the immunity following a single dose of the pneumococci lipovaccine is slow to develop and transient. Typhoid lipovaccine, similarly heated and unheated, was given to rabbits, intraperitoneally, in a single dose of 1 c.c. The comparison of the agglutinin content of the blood of these rabbits with those receiving three doses of typhoid vaccine in saline solution demonstrated that the antigenic properties of the particular lipovaccine employed was almost destroyed by heating to 130° C. for three hours.

Pfeiffer's Bacillus and Influenza.—WOLLSTEIN (*Jour. Exper. Med.*, 1919, xxx, 555) presents results of a serological study during the recent epidemic. Pfeiffer bacilli were grown on a rabbit's blood agar, blood broth and oleate agar. For serological study, convalescent patient's sera and monovalent immune sera produced in rabbits, were used. Spontaneous clumping of the Pfeiffer bacilli rendered agglutination reaction rather unsatisfactory. The reactions showed a great variation and were inconclusive. Active antigens for complement-fixation reactions were obtained from blood broth cultures of the organisms. Complement-binding bodies were absent from the blood of four normal individuals. Fixation antibodies were present in the blood of influenza patients at the end of the first week, increasing in strength during the second week and had disappeared from the blood stream between the third and fourth month. A complicating pneumonia increased the complement-binding power of the serum. Fixation antibodies were found in immune rabbit sera. Precipitin reactions paralleled the complement-binding phenomena. Two or three c.c. of the filtrates from seven strains of Pfeiffer bacilli, injected intravenously killed rabbits in one or two and one-half hours. The filtrates from other strains were much less lethal. Protection experiments on mice, using sera of rabbits which had been injected with poisonous filtrates were unsatisfactory. Convalescent human sera gave no protection.

Grouping of Bacillus Influenzæ by Specific Agglutination.—The results of immunologic reactions on strains of hemophilic organisms, particularly *B. influenzae*, have varied widely. Some investigators have failed to demonstrate immune bodies, others have established specific agglutination with the homologous serum of a given strain and still others have indicated almost complete absorption of agglutination for both the immunizing and heterologous strains. SMALL and DICKSON (*Jour. Infect. Dis.*, 1920, xxvi, 230) were able by agglutination and absorption tests to place seven of ten strains of *B. influenzae* into two groups. Three fell into group I, four into group II, while groups III and IV contained one strain each. The last strain did not correspond to the usual morphologic characters of *B. influenzae* in that it was very pleomorphic. It was not grouped but was most closely related to the members of group III. Immunization was performed on rabbits. The antigens consisted of saline suspensions from cooked blood-agar plates which had been inoculated with strains isolated from the nasopharynx and bronchi of the human. The agglutination tests showed some cross group agglutinins between group I and II and also between groups III and the unclassified strain and the two groups. The strain termed group IV appeared more strictly unrelated to the others.