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4800

"Para-Agglutination and Para-Heredity."

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The term "Para-agglutination" was introduced by Kuhn and Woithe[1] to designate the following phenomenon: Colon bacilli isolated from the feces of a dysentery patient were found to be agglutinated with antidysentery serum at a much higher dilution than strains of colon bacilli obtained from other sources.

The term "Para-heredity" was introduced by Wollman and Wollman[2] to designate the acquisition of agglutinability by anti-typhoid serum, by colon bacilli which had been grown together with typhoid bacilli in broth.

Apparently similar phenomena are the so-called "hybridization" of typhoid and dysentery bacilli reported by Almquist,[3] the acquisition of toxogenicity by non-scarlatinal streptococci when grown in scarlet fever streptococcus filtrates reported by Frobisher and Brown,[4] and the recently described "hybridization of proteins" of Manwaring.[5]

I have performed the following experiments: Colon bacilli were cultivated in broth with typhoid bacilli, in one experiment for 8 generations, in another for 17. From the last generation of each series a number of lactose fermenting colonies were isolated and their agglutinability with anti-typhoid serum was noted. In no case was the organism agglutinated in higher dilution than was the original strain which had not been associated with typhoid bacilli.

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[1] Kuhn and Woithe, *Med. Klinik*, 1909, 1709.

[2] Wollman and Wollman, *Compt. Rend. Soc. de Biol.*, 1926, xciii, 1568.

[3] Almquist, *J. Inf. Dis.*, 1924, xxxv, 341.

[4] Frobisher and Brown, *J. Bact.*, 1927, xiii, 44.

[5] Veblen, B. B., PROC. SOC. EXP. BIOL. AND MED., 1929, xxvii, 204.

Colon bacilli were isolated from the feces of 4 rabbits and their agglutinability with anti-typhoid serum was noted. Each rabbit was then immunized with 4 inoculations of heated typhoid bacilli, followed by 4 injections of living organisms. Intraperitoneal inoculations were made. After this period colon bacilli were again isolated from their feces and tested with anti-typhoid serum. Neither before nor after the series of injections were colon bacilli found which were agglutinated at titres higher than 1-10 with the typhoid serum used.

Staphylococcus aureus was cultivated with *Serratia marcescens,* and *Bacillus megatherium* was associated with the same chromogen, through 9 generations in broth. After that plates were prepared and numerous pink colonies were isolated. In no case was a red chromogen found having any of the characters of either *S. aureus* or *B. megatherium.*

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Elective Localization and Cataphoretic Potential of Streptococci.

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Measurements of cataphoretic potential have been made with the Northrop-Kunitz-Mudd apparatus. All suspensions were washed and measured in tested distilled water at 124 volts, 23° C. Determinations of pH of the suspensions were made colorimetrically. The streptococci were grown in tall columns (12 cm.) of glucose-brain broth, in tubes (1.5x20 cm.), for 18 hours at 35° C. Significant, and perhaps characteristic, potentials of green-producing streptococci have been obtained in a considerable number of different diseases, but in this preliminary paper we wish to report only on those obtained in studies of chronic encephalitis and chronic infectious arthritis, together with controls.

Material was obtained from a series of 18 cases of encephalitis and allied conditions. Streptococci obtained from the nasopharynx and from other foci of infection were subjected to tests of potential directly in suspensions and in cultures in glucose-brain broth. Single colonies of green-producing streptococci, obtained originally from the nasopharynx, from other foci of infection, from the stools, and even from the blood, were cultured in glucose-brain broth and sub-