sharp differentiation of individual human bloods within the common blood groups.

Among 116 individuals selected from the four blood groups the distribution of the agglutinable factor (which may be designated as M) was as shown in Table II.

This reaction is distinguished by its intensity from some others known to show individual differences within the groups, such as the reactions with cold agglutinins.

This is a preliminary report.

3484

Further Observations on the Extraction of Precipitable Substances of Bacilli.

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In continuation of the work reported in a previous note[1] the following results were obtained:

The precipitable substances extracted by dilute alcohol from various bacilli are of different sorts. While the substance derived from *B. typhosus* loses its activity by digestion with trypsin, the extracts of *B. paratyphosus* B and *B. proteus* X19 resist tryptic digestion like that of *V. cholera*. The substance extracted from *B. paratyphosus* B and *B. proteus* yielded reducing sugar after hydrolysis. The N content of the substance obtained from *B. typhosus* approximates that of proteins.

After treating *B. typhosus* several times with hot 75 per cent alcohol, an extract was prepared by heating with saline solution. This substance differed serologically from the above mentioned substance of typhoid bacilli, in that it was precipitated strongly by immune sera prepared with typhoid bacilli extracted with dilute alcohol, and gave weak reactions with immune sera prepared with dilute alcohol extracts. It is likewise digested by trypsin, and therefore both products apparently differ from that described by Douglas and Fleming.[2]

After digesting with trypsin, the precipitable substance extracted with dilute alcohol from *B. paratyphosus* B still reacted with *B. paratyphosus* B immune sera, but not with immune sera prepared with

the dilute alcohol extract of *B. typhosus* or *B. enteridis*. This crude preparation of *B. paratyphosus* B produced strongly agglutinating and precipitating sera when injected into rabbits.

A second extract was obtained also from *B. proteus* HX19 with saline solution from the bacilli previously treated with dilute alcohol. In contrast to the dilute alcohol extract this preparation had a high N content and was digested by trypsin. Both the dilute alcohol and the saline extracts reacted with common HX19 and OX19 immune sera but gave practically no precipitations with typhoid and paratyphoid antisera. The relation of these substances to that described by Przesmycki[3] is being studied. This is a preliminary report.

[1] Landsteiner, K., and Furth, J., PROC. SOC. EXP. BIOL. AND MED., 1927, xxiv, 379.

[2] Douglas, S. R., and Fleming, A., *Brit. J. Exp. Path.*, 1921, ii, 131, 175.

[3] Przesmycki, F., *Soc. Biol.*, 1926, xcv, 744.

3485

Antigenic Composition of the Watery Extracts of the Tubercle Bacillus.

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The differences found between the eggwhite hypersensitiveness of tuberculous guinea pigs and the tuberculin hypersensitiveness induced us to continue our former work[1] on the protein antigens of the tubercle bacillus. We publish this preliminary report because the detailed examination of the observations made requires considerable time. The following extracts of a virulent freshly cultivated strain of tubercle bacilli were examined in their relation to the antigen antibody reactions and the tuberculin reaction: Direct extract was obtained with distilled water. The growth on glycerin bouillon was washed without being broken up with distilled water, and filtered quickly, then suspended and slowly ground for two days in distilled water with the addition of some chloroform. If the culture is washed longer with distilled water and filtered slowly one obtains an extract of very slight efficiency and very little protein content. This was the reason that in our first publication, we overlooked the interesting properties of this extract. After being filtered and