THE WIDAL OR SERUM REACTION IN TYPHOID FEVER.

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THOUGH the serum reaction in cases of typhoid infection was not discovered by Widal, but was first recognized by Pfeiffer, and more thoroughly studied by Gruber and Durham in inoculated animals and by Grunbaum in typhoid in man, yet as Widal first published and made the reaction applicable to the diagnosis of typhoid fever in man, the reaction commonly goes by the name of the Widal test. To the late Wyatt Johnston of Montreal is due the credit of showing that the test could be made from dried blood and so gave the reaction at once a wide clinical application owing to the ease with which blood drops can be secured and kept or sent for examination.

The principles upon which the reaction is based, consist in the fact that in many infections, whether experimental or natural, there is a reactive change on the part of certain tissue cells of the infected individuals, leading to the production of bodies which posses an agglutinative action when brought into contact with a culture of the infecting agent. In a paper read before this society in October last I shortly outlined the method in which these agglutinins were believed to be formed as a result of cellular activity under the stimulus of the infecting agent. These bodies are not met with in all forms of infection, nor, when one considers the widely differing methods of action of the various infecting agents, could one expect to note the constant development of such a phenomenon. The production of agglutinins is not confined to certain bacterial infections but is seen e.g. following inoculations of blood of one species of animal into another species, when the serum of the inoculated animal is brought into contact with some of the blood used for the inoculation. The commoner bacterial infections in which we find the development of specific agglutinins are typhoid fever, bacillary dysentery, paracolon fever, malta fever and to a lesser extent plague and tuberculosis. In the first four mentioned the presence of the agglutinins is made use of as a means of diagnosis. No direct relationship can be traced between the agglutinins and the production of immunizing substances in