

the British Army in India—a gratifying contrast to the large figures recorded in the past.

Those of them who had been responsible for inoculation had always owned in the fullest manner that vaccine had not been the sole factor in this remarkable change. Improvements in general sanitation, improved methods of diagnosis, the detection and isolation of “carriers,” had undoubtedly all played a part; but his strong personal conviction, shared, he was glad to know, by many of his brother officers, was that the reduction was in the main due to the extended employment of anti-typhoid vaccine.

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### THE PRESENT STATUS OF ABDERHALDEN'S SERO-DIAGNOSIS

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In 1912 Abderhalden described a method for the sero-diagnosis of pregnancy which has been discussed in these columns. Having found that if foreign protein is injected into the blood or introduced parenterally, ferments for the destruction of this substance are produced, he next showed that in the blood of a pregnant animal there circulates a proteolytic ferment which causes a breaking down or cleavage of placental proteins and furthermore that there is in the blood of pregnant women proteolytic ferment or ferments for human placental tissue.

Two methods are used to show the presence of these ferments, the method of dialyzation and the optic method. The first method is carried out as follows: A membrane is used which allows peptone to pass but retains unsplit protein. On one side of the membrane is placed 1 gm. of human placental tissue, which has been carefully washed and boiled in five times its volume of water repeatedly until the water no longer gives the biuret or ninhydrin reaction, thus showing that no peptone is present, and to this are added from 1.5 to 3 c.c. of the serum to be tested. The serum is obtained under strict aseptic precautions and should be secured absolutely pure without any trace of products of hemolysis. The membrane is then placed in a small vessel containing from 15 to 20 c.c. of distilled water, and this is incubated for from sixteen to twenty-four hours. The outer fluid is then tested for the presence of peptone. If any is present, it means that the placental protein has been split and we have a positive result. Abderhalden recommends the ninhydrin