

were made with attenuated cultures, and pseudo-reactions were practically never encountered.

Later on, for a few weeks we tried active virulent culture transplanted daily at 37°C., but these gave us with the dried blood solution numerous and very peculiar pseudo-reactions, i.e., reactions not due to existing typhoid. For instance, the blood of one of us (W. J.) when dissolved gave prompt and abundant agglutination with a virulent culture, while we habitually use it as a suitable negative control blood with attenuated cultures. A solution of the blood of the other (D. D. McT.) gave no reaction. (W. J. had typhoid fever 16 years ago; D. D. McT. has never had it). W. J.'s blood serum gave no pseudo-reaction with the virulent culture.

On resuming the use of the attenuated cultures described above, the pseudo-reactions disappeared. On re-examining, the blood drops which had given them with the virulent cultures, no longer did so when tested with attenuated cultures, although dry blood from genuine cases taken at the same time still reacted typically.

For practical diagnostic work it may be stated that when a blood does not show a decisive reaction in a serious case of fever which has lasted over a week, the fever is almost certainly not typhoid. In very mild febricular cases the result may remain doubtful, unless investigated by an early bacteriological examination of the spleen pulp or stools.

In this connection we may state that we find that Elsner medium containing 25 per cent. gelatine instead of 10 per cent. will remain solid at a temperature about 30 C., and give visible typhoid colonies within 24 hours.

REACTION WITH THE COLON BACILLUS.

Very little attention has as yet been paid to the clinical significance of serum reactions with colon bacillus. Courmont and Rodet have stated that typhoid blood serum reacts with colon cultures, while Achard and Chantemesse state that it does not. Widal states that he has studied quantitatively the intensity of reaction of typhoid sera with *Coli*, but has been unable to draw any important diagnostic conclusions from the results.

Various observers have reported colon reaction as being present occasionally in different chronic and acute diseases. This can readily be understood in the light of our present knowledge of terminal infections. One case which at first strongly resembled typhoid but gave no serum reaction, has been recorded by Vedel who found a marked colon reaction and looked upon it as only colon infection, this opinion being confirmed by the subsequent events. Personally we have found