In both cases from which *B. dysenteriae* (Shiga) was isolated *Entamoeba coli* was also found, and in one of them *Lambia* in addition. From the above statement it is seen that 11 (22 per cent.) men out of the 50 convalescents were found to be carriers of pathogenic micro-organisms (9 *E. histolytica*, 2 *B. dysenteriae*, Shiga). The specimens from the same man did not always yield the same result on each of the three examinations.

<i>E. histolytica</i> was found on 3 occasions in	... 2 men
" " " " 2 occasions in	... 6 "
" " " " 1 occasion in	... 1 man
<i>B. dysenteriae</i> (Shiga) was found on 2 occasions in	... 1 "
<i>B. dysenteriae</i> (Shiga) was found on 1 occasion in	... 1 "

A single examination in each case, therefore, would not have given so many positive results, and it is reasonable to suppose that more numerous examinations would have revealed additional carriers.

Results of Agglutination Tests with the Serum of Convalescents.

Agglutination tests were made with the serum of each man against *B. typhosus*, *B. paratyphosus* A and B, *B. dysenteriae* (Shiga and Y), and also against *M. melitensis*. Definite agglutination with a dilution of 1 in 100 was regarded as a positive result in the case of *B. typhosus* and *B. paratyphosus* A and B and *B. dysenteriae* (Y). A dilution of 1 in 50 was considered sufficient in the case of *B. dysenteriae* (Shiga), and 1 in 400 was the only dilution used with the *M. melitensis* emulsion.

The method used was macroscopic, and the reading was made after four hours at 37° C. and about eighteen hours at room temperature. All the men had been inoculated with *B. typhosus* vaccine, and in twenty-seven a positive agglutination reaction was obtained with *B. typhosus*. Seven had also received a mixed *B. paratyphosus* A and B vaccine. Agglutination of these bacilli was explicable by the inoculation in these cases, and the results have therefore been discarded.

In all the men negative agglutination results were obtained against *B. dysenteriae* (Y) and *M. melitensis*. A positive result was obtained with *B. dysenteriae* (Shiga) in twenty-one cases, including the two men from whom this bacillus was isolated. A positive result with *B. paratyphosus* B was obtained in four cases, but in no instance was a positive reaction obtained with *B. paratyphosus* A (leaving out of account the men who had received paratyphoid vaccine).

Multiple Infections.

Indications of multiple infection were given in six convalescents when the agglutination results were taken into consideration in addition to the microscopic and cultural results.

The serum of one man gave a positive reaction with *B. dysenteriae* (Shiga) and with *B. paratyphosus* B.

The serum of one carrier of *E. histolytica* gave a positive reaction with *B. dysenteriae* (Shiga) and with *B. paratyphosus* B.

The serum of three other carriers of *E. histolytica* gave positive reactions with *B. dysenteriae* (Shiga).

The serum of one other carrier of *E. histolytica* gave a positive reaction with *B. paratyphosus* B.

An attempt to diagnose the original illness or illnesses from which the convalescents had suffered by agglutination tests rests on much less secure ground than diagnoses based on microscopic cultural evidence. However, an opinion may be formed of the numerical relation of the different kinds of infection. From all the evidence obtained it appeared that:

4 men had suffered from infection with *E. histolytica* alone.

1 man had suffered from infection with *E. histolytica*, *B. dysenteriae* (Shiga), and *B. paratyphosus* B.

3 men had suffered from infection with *E. histolytica* and *B. dysenteriae* (Shiga).

1 man had suffered from infection with *B. dysenteriae* (Shiga) and *B. paratyphosus* B.

16 men (including 2 cases in which *B. dysenteriae* was isolated) had suffered from infection with *B. dysenteriae* (Shiga) alone.

For the remaining men no direct evidence was obtained as to the nature of the infection, but since they

gave negative agglutination results there is, perhaps, a presumption that the majority had been infected with *E. histolytica*.

Main Conclusion.

Among 50 dysentery convalescents examined, three to six months after the onset of their illness, 9 were still excreting *E. histolytica*, 2 were still excreting *B. dysenteriae* (Shiga). These 11 men were therefore potential sources for the outbreak of fresh epidemics.

AN EASY AND RAPID METHOD OF DOING WIDAL'S REACTION FOR TYPHOID.

BY

ALFRED C. COLES, M.D., D.Sc., F.R.S. EDIN.,
M.R.C.P. LOND.,

PHYSICIAN TO THE ROYAL NATIONAL SANATORIUM, BOURNEMOUTH.

The following is a rapid and simple method of determining, or at least of strongly suspecting, the presence or absence of typhoid in a non-inoculated person. It possesses the advantage of requiring very little blood, for with a few films such as are used for ordinary microscopic examination, we can (especially if typhoid is suggested by an absence of leucocytosis) perform the agglutinating test with one or two of these films.

1. With a colour grease glass writing pencil, or a piece of wax, draw a line across the middle of two slides at right angles to their long axes.

2. Spread a film of the blood to be examined on one half of each slide, and, when dry, spread a film of one's own blood, or that of a person who has not had typhoid or who has not been protectively inoculated against it, as a control, on the other half of each slide. The film may be as thin as that ordinarily used for stained films, or a little thicker. Dry.

3. By means of a platinum loop or pipette place a small drop of an emulsion of killed typhoid bacilli on the centre of each half of both slides, and with the platinum loop, or with a needle, rub the drop well over the film of blood, taking care not to pass from one half of the film to the other without sterilizing the needle.

4. On one slide carefully place a cover-glass on each half, taking care that the two cover-glasses are well separated in the middle by the mark of the grease pencil.

5. Place the other slide on a piece of wet blotting paper, and cover with a Petri dish to prevent evaporation for a period of fifteen to twenty minutes. At the end of that time dry carefully over the flame, and then stain.

Examine both halves of the first slide under a moderately low power. At the end of fifteen minutes (often much sooner) distinct clumps of agglutinated bacilli will be seen, provided the case be one of typhoid or the blood of one who has been prophylactically inoculated with a typhoid vaccine, whilst on the other half, the control, the bacilli show no signs of clumping. The film, stained with Leishman or Giemsa's stain, will show on one half patches of agglutinated bacilli, whilst on the control half the typhoid bacilli are more or less uniformly spread over the film. The red cells are practically invisible, but the leucocytes are clearly defined, and it is quite easy, provided the film has been thin, to determine the presence or absence of leucocytosis, and to make, if necessary, a differential count of the various forms of white cells present.

The emulsion I have been using is that made from a young agar culture of typhoid bacilli in saline solution, killed by the addition of 1 per cent. formalin. Emulsions of dead typhoid bacilli can be obtained from the Lister Institute.

I find the standard agglutinable cultures of Professor Dreyer as sent out from Oxford for the sedimentation method answer very well, especially if the emulsion be taken from the lower part of the bottle. Prophylactic typhoid vaccines do not give as clear results as emulsions from agar cultures, and the bacilli do not stain readily. Should the above give a positive result, a quantitative test may subsequently be made of the serum of the blood by Professor Dreyer's sedimentation method. Provided with an emulsion of killed paratyphoid A and paratyphoid B bacilli, the blood film may be tested against infection of these organisms in precisely the same way.

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