

probably not typhoid. The key was then opened by me, and the clinical diagnosis from all cases found as follows: No. 1, typhoid; No. 2, typhoid; No. 3, typhoid; No. 4, malaria; No. 5, enlarged glands of neck; No. 6, heart disease.

(Signed) WILLIAM E. BISSELL.

It will be noticed that a qualified though correct opinion was given at the time of my making the report in one of the negative cases (No. 6). This doubt was owing to the fact that it was the last specimen examined, and that a partial agglutination appeared to take place at first, though motion was not abolished. Subsequent examination some hours later showed such lively motion that I should have had no hesitation in declaring it not to be typhoid, had the circumstances permitted that much delay before an opinion was given.

A ready means of diagnosis in typhoid fever is something which has long been desired by sanitary officials. The medical profession is proverbially lax with regard to the notification of typhoid cases, and we may assume that this neglect is in part due to the want of any adequate *quid pro quo* in return for such notification. Probably the assistance derived from a prompt bacteriological diagnosis, or even corroboration of diagnosis in the early stages of typhoid, will lead to the more uniform reporting of cases. Besides distinguishing typhoid from such well-characterized diseases as tuberculosis and malarial disease, this test may also be expected to clear up the mystery which surrounds those doubtful cases of so-called bilious fever, remittent fever, gastric fever, typho-malarial fever, etc., which are so common in times and places where typhoid is prevalent, and rare in the absence of typhoid, at least in temperate regions which are free from malaria.

Those who are called upon to investigate epidemics of typhoid are much perplexed by the large number of cases of ill-defined and transitory fever occurring among those personally exposed to the infection, and the impossibility of coming to anything like a definite conclusion upon the evidence hitherto obtainable as to whether these are to be regarded as cases of abortive typhoid or not. In my own experience, such cases have usually equaled or outnumbered the cases where the symptoms justified a definite diagnosis.

I may add a few words with regard to technic. I use a dry lens of about one-fourth inch focal distance. The dry blood drop is partly dissolved with germ-free water, and a drop of the solution obtained is placed upon a cover glass which has just been passed through a flame and mixed with a drop of a typhoid bouillon (a watery suspension of an agar culture also answers very well). This is placed over a hollow cell sealed by vaseline. I control the examination by comparing it with a blood drop from an undoubtedly typhoid case, and also with normal blood. It is also advantageous to place a minute drop of the blood solution upon the cover slip alongside the mixture of culture and serum, so as to satisfy one's self in negative cases that the blood contains no motile bacteria. Uniformity of temperature is the chief detail to be attended to, as the agglutination does not take place so well if the movements are sluggish.