characteristics of Eberth's germ are not inherent in the organism, but result from the effects of the environment under which the organism has grown in the body.

Bacillus B. : This is also a short motile rod, which in cultures from four to six weeks old shows some liquefaction of the gelatin. It is certainly a slowly liquefying germ. It sometimes forms gas along the line of the stick. This occurs, if at all, during the first few days of growth, and long before liquefaction begins. It forms a white, raised growth on potato. The ordinary stains are taken readily, and Gram's method yields positive results. This germ agrees very closely with bacillus A in its pathogenic properties and in the post mortem appearances induced, so closely, indeed, that it will not be necessary to repeat details. This germ has, in the few instances in which it has been tried, failed to kill rats when inoculated subcutaneously, though it is fatal to guinea-pigs when employed in this manner. The plates prepared from the organs of animals killed with this germ have invariably yielded numerous colonies. The germ is also found in the blood.

As has been stated, bacillus B was subjected to the same line of experimentation as A, with practically the same results, and a detailed repetition is not necessary. It should be remarked that the chief points of difference between A and B, as well as those between these and Eberth's germ, have disappeared in B, as obtained from the pieces of spleen. Stick cultures in gelatine tubes have not been found to generate gas or to liquefy gelatine.

From these experiments I must conclude that the evidence of the existence of a specific and individual germ which is the sole and only cause of typhoid fever is not at present conclusive. On the contrary, I am strong in the belief that there exists a family or class of germs, any one of which may cause the essential symptoms and lesions of that disease or group of diseases which we now designate by the name of typhoid fever. It may be that in the future we shall be able to differentiate from the symptoms the diseased condition caused by one of these organisms from that caused by another ; but at present we are unable to do so.

It seems to me that the view expressed above is supported by the clinical history of the disease. As has been already remarked, the symptoms of this disease do not show the constancy and invariability characteristic of a truly specific disease, such as anthrax or small-pox; but on the other hand, the symptoms show marked variations in their appearance' and in their gravity.

I may state that I do not stand alone in questioning the specific nature of Eberth's germ. Some months ago Rodet and Roux<sup>35</sup> found that the bacterium coli commune, when cultivated at a temperature of 44° to 46°, undergoes changes which cause it to bear a remarkable resemblance to Eberth's germ, and they conclude from their work that the latter is only a degenerative form of the former. If this be true, the stools of healthy persons, when they contaminate our drinking-water, may cause typhoid fever, and the existence of a preceding case is not necessary in order to cause the disease.

Chantemesse and Vidal<sup>3 *a*</sup> state that Eberth's germ will grow on gelatine containing 0.25 per cent. of carbolic acid, while all other water germs fail to grow on this medium. They therefore propose this as a method of isolating the typhoid bacillus. Such gelatine was prepared, and tubes inoculated with A, B, and Eberth's germ were poured on plates. A and B grew more vigorously on these plates than did the Eberth bacillus. The growth of the Eberth germ was markedly retarded, while that of the others was not.

Thonoit<sup>37</sup> modifies the above test by adding the carbolic acid to the water to be examined, and after a time inoculates ordinary gelatine with the water. He claims that after this treatment only the Eberth germ will develop. This test was applied to natural waters containing A and B, and their development was not affected. The water was allowed to stand three hours after the addition of the carbolic acid.

Holz<sup>38</sup> prepares a gelatine from the expressed juice of raw potatoes, and claims that the Eberth germ will grow on this medium while all similar organisms fail to do so. Such gelatine was prepared according to the directions given by Holz, and on this A and B grew beautifully.

I may remark, in conclusion, that it seems very strange to me, after going over the literature of the subject, that so much stress should have been placed, by the compilers of books, on the means of recognition of the so-called Eberth germ by