taken from the finger with aseptic precautions. In two cases marked reactions were obtained from the fluid of blisters. The drop of dried blood should be dissolved with a drop of sterilized water, and the fibrin and coloring matter allowed to settle. With a plantinum-wire loop four small drops of the culture are placed upon a clean cover glass which has just been passed through the flame. One drop of the clear upper layer of blood serum is then taken and mixed with three of the drops of culture, the fourth drop being left as a control. The cover glass is then inverted over the hollow cell of a glass slide and sealed with oil or vaseline. The hanging drop may then be studied with a quarter or one-sixth objective. I regard it as important to have a control drop on each cover glass side by side with the specimen. It is often desirable or necessary in cases of slow or doubtful reaction to turn to the drop of pure culture and see what changes are taking place there. The method of using dried blood and then redissolving it with water necessarily gives a serum of very uncertain strength. In the majority of cases the reaction is so clearly positive or negative that this rough method answers our purpose. In all doubtful cases, however, I should recommend the use of a blister. The blister fluid can be aspirated in small glass capillary tubes and obtained pure and then diluted to any required strength. Its freedom from fibrin and blood coloring matter is also an advantage. The blister can be made with cantharidal collodion or plaster and causes but trifling pain, as I can state from personal experiment.

The reactions which are observed in the mixture of serum and culture are generally described as either positive or negative, but, in my opinion, a considerable proportion can only be called "doubtful" or "partial." When most of the bacilli are immobilized and formed into clumps within five or twenty or thirty minutes, and the others have either lost their motility or retain simply a sluggish, uncertain movement, the reaction is properly classed as positive, or marked, or typical typhoid. On the other hand, if the activity of the bacilli persists and there is no clumping whatever, the reaction is naturally negative. But in many cases the motility of some of the bacilli is impaired while others remain active. There may also be some loose clumps, but the bacilli forming the clumps may still be in motion. It is, therefore, often impossible to call the reaction anything more than "doubtful." I shall have occasion this evening to describe actual instances of these various forms of reactions, and they will also be demonstrated under the microscope.

The cases forming the subject of our experiments may be divided