

A hot-water dish filled with warm water forms a cheap and convenient substitute for an incubator, and a simple warm stage made of a sheet of copper is also useful. In a well-warmed laboratory, however, the use of these adjuncts is unnecessary. Hollow cells are convenient, but not indispensable. For collecting the blood drop, any smooth surface suffices; cover glasses or slides have the advantage of being clean and sterile, but I have found ordinary writing paper or smooth cardboard most convenient, as it could be more easily labeled or forwarded. The swabs used for diphtheria outfits will answer, but the presence of extraneous substances, such as fibres, was found annoying. The presence of blood pigment is rather an advantage, as it enables the drop to be more easily focused. The small fibrin particles of clot sometimes bear a superficial resemblance to the islets of agglutinated typhoid bacilli, but are readily distinguished from them by the presence of leucocytes in their meshes.

One advantage of having the blood dried is that it insures it against contaminating growth occurring during shipment. In case any doubt as to the reaction exists at first, it will usually be dispelled by watching the preparations for some hours, or, if necessary, for a day or two. This permits a decided and progressive increase of motion in non-typhoid cases and allows the more perfect agglutination in the genuine ones.

The one indispensable factor is perfect purity of the culture. The one which I use was kindly forwarded me by Mr. J. J. Mackenzie, bacteriologist to the Ontario Provincial Board of Health, and was stated to have come originally from the Berlin Hygienic Institute. It grows typically on gelatin, potato, bouillon, agar, and milk; reacts typically with litmus agar, produces no indol or gas, and shows the motility and staining reactions characteristic of the Eberth bacillus.

I have made this communication because the method here suggested seems better adapted than those hitherto employed for bringing this test within the range of ordinary public-health laboratory work, and enabling it to be dealt with, if I may so express it, in a wholesale manner.¹

This article was published in the "New York Medical Journal" of October 31, 1896. Further articles on the same subject were published by me in the "New York Medical Journal," November 28, 1896 (with Dr. D. D. McTaggart) in the "British Medical Journal," December 5, 1896; Circular of the Board of Health of the Province of Quebec, January 7, 1897 (with Dr. D. D. McTaggart) in the "Montreal Medical Journal," March, 1897; "Centralblatt für Bakteriologie," Baud XXI, 1897.

¹ Drying the blood as a preliminary step has enabled the Board of Health of the Province of Quebec to offer to the medical profession here a free public service of typhoid diagnosis by the serum method similar to that which is followed in diphtheria. Outfits consisting of a folded and sterilized piece of paper, in which the blood drop is sent inclosed in a suitable envelope, are placed in convenient depots. In case of negative results, an additional sample, taken by collecting a few drops of blood in a small glass tube, is examined, but this extra precaution is seldom necessary. As to the degree of accuracy which this application of the test may afford, it is too early to speak positively. From my experience hitherto, I am inclined to believe that it will compare not unfavorably with those obtained in the cases of diphtheria and tuberculosis. In one case the reaction was present on the third day.