with a Fleischl's hæmometer a tint reading 100 p.c., with $\frac{1}{10}$ dilution of normal blood. In anæmic cases the dilution will vary with the degree of anæmia, which can readily be determined. Blood dried for some time gradually yields less and less hæmoglobin, owing to the change of this substance into the hæmatin compounds. This change goes on rapidly in air where gas is being burned and slowly in pure air. In any case, the error is in the direction of a less dilution than that shown by the hæmometer. As a matter of experience, we find exact estimation of the dilution, while interesting for scientific purposes is not necessary for the practical purposes of the test if attenuated cultures are used and the establishment of fixed arbitrarytime limits, as recommended by Grünbaum seem only of use in avoiding pseudo results, due to the use of highly virulent cultures.

Grünbaum, being enthusiastic for exact estimation of dilution in all cases, claims (*Lancet*, Sept. 19, 1896), that though most sera will in time produce clumping, that typhoid serum can still be specifically identified by its being the only serum, which, with free dilution in a ratio of 16 to 1, will produce a complete elumping and arrest motion in 30 min. A fixed dilution ratio, with an arbitrary time limit, appears to us quite uncalled for as a routine diagnostic practice, and has no standard value unless a culture of fixed virulence is used.

Since writing the above we find that Grünbaum has now stated on theoretical grounds "that possibly the use of attenuated cultures would enable us to dispense with the dilution" (*Lancet*, Dec. 19, 1896.)

We had anticipated a priori that the solution obtained from the dried blood would be less sensitive as a reagent than the fresh liquid serum. We find the blood solution on the contrary to be apparently more potent than the serum, in causing the agglutination though not as to the paralytic effect, and perhaps to give the reaction at a somewhat earlier stage of the disease. This view agrees with the researches of Widal, who found that the agglutinating substance was contained in the globulins and fibrinogen, and that the serum albumin and corpuscles contained none. Thus the blood serum contains only a part of the agglutinative substance. Dr. A. H. Appel of the U. S. Army has also recently made studies and observations showing the greater agglutinative properties of solutions of the whole blood as compared with that of the serum. A decided agglutination can be obtained from weak solutions of the entire blood when none is produced by stronger solutions of the serum. While Widal places the limits of dilution with serum below 1 to 200, R. Stern who employed solutions