treating it similarly gives K_3 2.23 to 7. This value is only about half that in Tables 11 and 12. Also the D factors in the pairs of experiments 11–12 and 9–10 are quite different. It will appear later that K_1 is probably a function of $dx/d\theta$ to which these peculiar results may be due. Failing such an explanation, it would appear that the constituents are not independent in their action on the rate but are influenced by the presence of other constituents.

In my former paper it was assumed that under the conditions of measurement the effect of the reaction opposite to the one being measured, could be safely neglected. This assumption was completely justified in the measurements of the Direct Rate as also in the greater part of the Reverse Rate measurements. In a few experiments (for example, Tables 23 and 24*a* of the former paper) the constant shows a falling off at the last reading where the rate is carried to almost complete disappearance of arsenic acid. This may also be observed in some of the tables of the present paper, but where this error extended further than the end measurements, a correction has been made. In taking averages where the last values show a decrease they are omitted.

In Tables 28 and 29 of my former paper, the reverse rate measured was very slow, the direct rate constant is about 10' greater, and consequently this error is here not negligible. For the purpose of correction, Tables 28 and 29 of the former paper are produced here as Tables 11 and 12. The suggestion as well as the method of correction I owe to Mr. W. C. Bray.[1] In Tables 11 and 12, K_1' is calculated by Equation (6) but using pairs of consecutive values of $(E - 1)$ and the difference between the corresponding values of θ. This method magnifies the experimental errors but is to be preferred as emphasizing also any regular variation in the constant. The actually measured rate R is calculated by supplying the values in

$$R = dx/d\theta = 2.30\, K_1'(E - 1). \qquad (8)$$

The direct rate is calculated by the equation

$$R_1 = 0.28 \times V \cdot C \cdot (x)^3 (D - 1). \qquad (9)$$

[1] Journ. Phys. Chem., 9, 573 (1905).