The unit of time is one minute and the unit of volume is one liter. Except when otherwise stated, the experiments were all carried out at o° C. For convenience of reference the rate to the right in above equation (B) is spoken of as the "Direct Rate" and the rate to the left as the "Reverse Rate."

PART I. EXPERIMENTS USING SULPHURIC ACID
Series A.—Extended reverse rate measurements

In the reduction of arsenic acid by potassium iodide and sulphuric acid, it was observed in the former paper that the latter constituents seemed to not obey the mass law and to require variable values for a and b in Equation 2 above. To find the extent of this abnormal action, advantage was taken of the fact that increase of either of these constituents accelerates the rate. Consequently by alternately doubling the one and halving the other, the experiments were made to cover practically the whole possible concentration of the two constituents, still keeping the velocity of the rate within limits allowing of easy measurement. At the same time the concentration of the arsenic acid was always much less than the smaller of the other two concentrations, so that in a first approximation the velocity of the rate was affected only by changes in the concentration of the arsenic acid. That is, in the general formula

$$dx/dt = K(C - x)(D - x)(E - x)V \qquad (4)$$

C and D are always large compared with E and therefore always still larger compared with x. Thus the expression (4) becomes practically

$$dx/dt = K\,CDV\,(E - x) \qquad (5)$$

of which the integrated form is

$$K_1 t = Log_{10}(E - x) \qquad (6)$$

where

$$K_1 = K\,CDV\,0.434 \qquad (7)$$

The reactions were carried out in suitable sized flasks kept at o° C by immersion in a well-stirred bath of snow and water. The solution for the reaction was prepared in two parts which