acid. From the analogy of the two cases there can be no doubt but that experiments following this reverse rate to equilibrium would show the same excellent agreement as was finally found in Series A.

Temperature Coefficient.—The experiments 11 to 14 were carried out at 10° C and the other half of the same solution at 0° C. The relation between the pairs of constants gives 1.25 as the coefficient for this temperature interval; the ratio of the rate coefficients is 1.27, so that we have here again excellent agreement.

Conclusion

The conclusions of the former paper receive the strongest support from the more extended data recorded here.

The formula for the direct rate (Equation 16) is found to hold with remarkable exactness for both sulphurie and hydriodie acids and K_{π} is non-variant right up to equilibrium.

The formula for the reverse rate (Equation 2) is found to hold for very dilute solutions with a and b unity. With inereasing concentration of iodide (C) and acid (D) the values of aard b increase similarly. The value of K_5 is found to increase as the equilibrium is approached and also when the rate $dx d\theta$ is lessened by decreasing (E — v). A satisfactory theoretical explanation of these peculiarities is advanced.

The value of the equilibrium constant K_{s} is 1.5 to—variations being possibly due to experimental errors. This value is in remarkable agreement with the quotient of the two rate constants $K_{s}K_{s}$ = 1.4 to. The ratio of the rate temperature coefficients also shows the same excellent agreement with the equilibrium temperature coefficient. Finally, the peculiar action of concentrated sulphuric acid, increasing its action faster than its concentration, is shown in each of the rates and in the equilibrium.

In view of the complexity of both rates and equilibrium functions, this application and confirmation of the Theory of Kinetic Equilibrium must be regarded as the most satisfactory known.