THE RATE OF FORMATION OF IODATES IN ALKA LINE SOLUTIONS OF IODINE

BY E. L. C. FORSTER

Up to the year 1861, in which Schöubein's "Beiträge zur nähern Kenntniss des Sauerstoffs und der einfachen Salzbildner"¹ appeared, it was generally believed that iodine and eaustie potash in solution reaet instantaneously to form potassimm iodate. Schöubein showed that the reaction takes place in two ostges, and, relying on the close analogy between the chemical behaviour of iodine and chlorine, assumed that the intermediate product was potassimm hypoiodite.

Wi egard to the first stage — formation of hypoiodite his experiments show that the reaction is incomplete and reveraible, leading to an equilibrium between potash, iodine, iodide and hypoiodite; with regard to the second — formation of iodate — which differs from the first in requiring a measurable time for its completion, Schönbein says little, merely pointing sut that rise in temperature increases the rate.

In 1894 there appeared a paper by Lonnes² containing ineasurements of the amount of iodate formed in solutions of iodine and sodium carbonate at measured intervals of time, which show that the rate of 'he reaction is influenced by the concentrations of the iodide and of the alkali; and in the following year Schwicker³—in the or 'ly formal study of the "rate of transformation of potassium aypoiodite" that has as yet appeared — found that the rate was proportional to the square of the concentration of the "iodine," and that increase in the quantity of potash caused a retardation almost proportional to the excess of KCH over that needed to form hypoiodite. In a few experiments in which the iodine was present in slight excess,

¹ Jour. für prakt. Chem. 84, 385 (1861).

² Zeit. anal. Chem. 33, 409 (1894).

³ Zeit. phys. Chem. 16, 303 (1895).