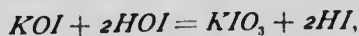


the rate was thought to be proportional to the cube of the concentration of the iodine; no account was taken of the influence of the potassium iodide.

In the opinion of Taylor,¹ Schwicker's results "do not appear to have been altogether satisfactory;" this he ascribes to that author's neglect of the effect due to the potassium iodide in his "iodine" solution. That the rate is in reality largely dependent on the concentration of the iodide, was again shown by Förster and Gyr² in a paper on "the action of iodine on alkalis," published in January of the present year.

In the experiments described in the present paper, I have examined the effect of changing the quantities of potash, iodine, and potassium iodide, on the rate of formation of potassium iodate in alkaline solutions of iodine. When the potash is present in large excess — colourless solutions — the results are simple, and can be expressed with a fair degree of accuracy by saying that the rate is proportional to the concentration of the iodion \bar{I} , the hypoiodion \overline{OI} , and the hypoiodous acid HOI . In brown solutions, on the other hand, where the iodine is in excess, the relations are more complex; and, until the numerical values of certain constants have been determined, it cannot be asserted that the laws suggested by the experiments with colourless solutions are valid for all.

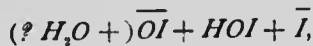
My measurements show that Förster's equation



which in that author's opinion "corresponds in all details" with the reaction itself, must be rejected equally with the older theory adopted by Schwicker and others



and that in all probability it must be replaced by some equation of which the left member is



¹ Chem. News, 76, 17 (1897).

² Zeit. Elektrochemie, 9, 1 (1903).