sulphate equivalent to the free iodine liberated in 10 cc of the reacting mixture during that period.

The numbers under "T(1)," "T(5)," etc., are obtained from Tables, 1, 5, etc., by interpolation, and give the number of minutes in which the amount of iodine entered under "100x" was liberated in the experiments of those tables.

R = 100 $dx/d\theta$ is the initial rate, *i. e.*, the number of cc $n/100$ iodine liberated per minute in 10 cc of a reacting mixture of the composition given at the head of the table. It is obtained by multiplying the concentration of the substance present in small quantity by k_1. Finally, k_1 is the "constant of the first order"; if the potassium chlorate be present in small quantity, $k_1 = 1/\theta$ log nat A/(A − x).

Results of the Experiments

Series A. Acceleration by iron

In Expts. 1 and 2 the initial concentrations of the chlorate, iodide, and acid were the same, but in Ex. 2 a little ferrous sulphate (equivalent to 2½ percent of the chlorate) was added. This slight addition multiplied the rate by 13.

In the case of Expts. 3 and 4 the acceleration is still more marked.

EXPTS. 1 AND 2.

A 1.0; B 8.75; C 8.85; $FeSO_4$ Ex. (1) none, Ex. (2) 0.025.

1.	100 x.	$k_1 \times 10^4$	k_1 corr.	2.θ	100 x	T(1)	T θ
42	3.2	7.80	6.97	10	8.6	120	12
122	9.3	8.00	—	34	28.1	445	13
188	13.4	7.66	7.28	75	49.4	950	13
194	13.9	7.73	—	108	65.03	1580	14
287	19.9	7.73	—	141	71.3	1840	13
335	22.5	7.61	7.25	172	77.5	—	—
454	28.9	7.52	7.25	204	72.6	—	—
655	38.5	7.41	—	—	—	—	—
733	41.5	7.30	7.25	—	—	—	—
1484	63.6	6.79	—	—	—	—	—
1493	63.9	6.84	—	—	—	—	—
1863	72.3	6.70	7.34	—	—	—	—