Now the values of $\int_0^t a.dt$ can be found easily and accurately from the plotted curve, a, t, and hence the values of k' and of $r.As$ can be found by means of equation (44) for any two pairs of values of a and t.

Thus, we have

$$\frac{r.As}{As} = \frac{h - ic}{x'} \text{ (for } t = \infty) = r.\text{[1]} \qquad (45)$$

If in addition the value of k of equation (34) be known, the value of r can be determined from the above calculated value of k' as in equation (31).

SUMMARY

A method of analysis, which may be of use in the study of other complicated cases of induced oxidation, is described.

Addition of potassium iodide lessens the rate of oxidation of arsenious acid by chromic acid, the retardation increasing with the concentration of the iodide up to a certain point from which on the rate of oxidation of arsenious acid is equal to one-third the rate when no iodide is present; or symbolically,

$$Ra\,(KI\ excess) = \frac{1}{3}.\,Rac.$$

The rate at which iodine is liberated in solutions containing arsenious acid, iodide and chromic acid, after correcting for the direct oxidation of iodide by chromic acid, in-

[1] As an example of this method the following table calculated from the data of Table XI, by methods described in Jour. Phys. Chem., 10, 423 (1906) is given.

	t	$\frac{1}{t}\int_0^t a.dt$	$r.As$
(1)	20	2.55	——
(2)	25	2.96	——
(3)	30	3.42	10.0, from (1) and (3)
(4)	35	3.83	10.4, from (2) and (4)
(5)	40	4.19	10.4, from (3) and (5)

In this table $a = h - ic$ (*calc.*) of Table XI. The value of As is 5.00 and hence $r = 2$ very closely.