nanini's work comes here, 1891), and finding quantitative relations where the latter had seen none. Noyes used this method number three in his own work, and discovered the first reactions of the third order studied since the time of Hood.

The next incident is the appearance of the second edition of Ostwald's Lehrbuch, or rather of the second edition of vol. 2, part 2, Heft 2, with the chapter on kinetics. In this, after reviewing the methods of working in common use, viz.: methods three and four of our classification, Ostwald suggests working with all the chemicals but one in excess, and determining the effect of that one on the rate—Harcourt's method, so far. Harcourt's name is not mentioned at all in this connection, however, and reading a little further shows that it is not Harcourt's method after all: because when it comes to determining the effect of the concentration of B on the rate, instead of preparing the experiments with a different excess of B, it is proposed to make b small in turn, and so with all, one after the other. The method used in Harcourt's paper seems to have been quite forgotten.

When planning work for the laboratory for the winter of 1902, I read this new method of Ostwald's with the greatest interest, and fully appreciated the advantages set out so clearly by the author.

On thinking over the case in which I was specially interested, however (the reaction between chloric and hydriodic acids in presence of free iodine) I found that the effect of the iodine concentration could not be ascertained by this new method; to ascertain it, it would be necessary to make up a solution, in which the concentration of the iodide was much lower than that of the others, including that of the iodine. Now, it is impossible to prepare a solution containing much iodine and little iodide, the iodine won't dissolve. And on further thought, I saw that my object could be attained by comparing the rates in two solutions, in both of which the iodide was in excess, but different excesses. The method of Harcourt again, at last.

I didn't know it was Harcourt's at first; in fact, it was only in the winter, when the work was well advanced, that in connection with some work that Mr. Bell[1] was doing, I had occasion to read Harcourt's paper, and found what I had begun to regard as *my* method clearly described.

This tool once in our hands, it is not surprising that we should be able to solve problems that had proved too much for some of the best known chemists working under less favourable circumstances.

The rates of oxidation of hydriodic acid, for instance, by the oxy-

[1] Jour. Phys. Chem., 7, 61 (1903).