

BOOK REVIEW

Trace Analysis, Papers presented at a Symposium on Trace Analysis held at the New York Academy of Medicine, New York, November 2nd-4th, 1955, edited by J. H. YOE AND H. J. KOCH JR. John Wiley & Sons, Inc., New York, 1957, 672 pp., price \$ 12.

The symposium is divided into three parts: "Methodology", "Instrumentation" and "Sensitivity, Separation, Concentration and Contamination". The first three chapters of "Methodology" deal with chromatographic methods. Chapter 1 by H. H. STRAIN entitled *Chromatography and Electrochromatography* (27 pp.) attempts to define, classify and summarise the numerous chromatographic and electrophoretic methods. This is a difficult and thankless task unless sufficient detail and explanation is devoted to each method. Unfortunately Dr. STRAIN has tried to present the different methods in a series of tables, which are of no help to the beginner. Also it appears to be impossible to include all techniques in such tables. For example Table VIII lists the electrochromatographic methods and the reader must conclude that electrophoresis in troughs is never carried out with gels as a supporting medium or that electrophoresis in tubes is usually carried out with gels and not with starch or cellulose although the contrary is true for both cases. The main shortcomings of this review thus seem to be that too much is compressed into too little space.

Chapter 2 by K. A. KRAUS on Ion Exchange is easily the clearest and best introduction to ion exchange chromatography known to the reviewer. Especially the theory of ion exchange has been presented with remarkable skill. This chapter may be recommended as text for students as well as for research workers intending to use ion exchange techniques.

The third chapter entitled "Extraction" by L. C. CRAIG deals essentially with the theory of counter current distribution. It is extremely well written and contains a lot of stimulating material for the partition chromatographer such as the shape of distribution patterns with non-linear distribution isotherms. The fractionation of bacitracin fragments by counter current distribution is given as an example of the possibilities of this method.

This chapter could not be better. It does not mention however the numerous solvent extraction methods now used to concentrate traces (usually inorganic) by simple extraction with complexing agents. These methods are far removed from the work of Dr. CRAIG. Thus the reviewer feels that there is scope for another chapter dealing with these topics which was unfortunately not included in the symposium.

The only other chapter dealing with chromatography is in the last part of the symposium. In Chapter 24 R. E. THIERS gives amongst other examples the determination of Co in blood by ion exchange chromatography by means of a flow sheet.

It is felt that Chapters 2 and 3 warrant the purchase of this book for every newcomer to chromatographic methods.

M. LEDERER (Arcueil)