

BOOK REVIEWS

Gas Chromatography, by COURTENAY PHILLIPS. Butterworths Scientific Publications, London, 1957, 105 pages, price 25s.

Gas Chromatography, by A. I. M. KEULEMANS, edited by C. G. VERVER. Reinhold Publishing Corporation, New York, 1957, 217 pages, price \$ 7.50.

Vapour Phase Chromatography, edited by D. H. DESTY. Butterworths Scientific Publications, London, 1957, 436 pages, price £ 3.10s.

These three books are not mutually exclusive but are complementary since the first represents a short but thorough introduction to the subject, the second a detailed discussion of work published up to 1955 (with particular reference to hydrocarbons), and the third consists of a series of papers presented at the 1956 London Conference on Gas Chromatography.

PHILLIPS' book (the shorter of the three) is suitable for newcomers to the field and for students since it does not deal at length with any aspect of the subject, but would provide a thorough grounding if carefully read.

KEULEMANS, another well known worker in the subject, gives a detailed description of both theoretical and experimental evaluations of column parameters and of solution effects. Detailed description of apparatus is not provided except for catharometer detectors. This is not surprising since at the time of writing these detectors seemed the simplest, but since then many of their defects have become apparent and now it seems that the newer ionisation monitors will replace them on the grounds of simplicity, cheapness and sensitivity. Despite this drawback all that KEULEMANS has to say will repay study.

The papers presented in the third volume fall mainly into three groups:—(1) vapour detectors *viz.* catharometers, hydrogen flare devices, the gas density meter and ionisation monitors; (2) thermodynamic treatments of solution effects and mathematic treatment of column efficiency; and (3) special applications of both gas-liquid and gas-solid chromatograms. For this reason the book is suitable only for workers having some experience or knowledge of the technique.

No major fault can be found with the production of any of the books, diagrams are clear and the indexes are adequate. Taken together these books cover all phases of the technique and all the more important published papers.

A. T. JAMES (London)

Methods of Quantitative Radiochromatography as Applied to the Study of Intermediate Metabolism, by E. B. CHAIN. Blackwell Scientific Publications, Oxford, 57s.6d. (Selected Papers from the Istituto Superiore di Sanità, Rome, 1956, 5000 lire).

The volume, sold by Blackwell as a separate book, contains six papers by Prof. E. B. CHAIN, Prof. D. BOVER, and their collaborators. These papers make up Volume 1, Part II, of the selected papers of the Istituto Superiore di Sanità.

In the chromatography of radioactive substances it is relatively easy to scan a uni-dimensional chromatogram and numerous automatic instruments for this purpose have been constructed and can be bought ready made. For two-dimensional chromatography most workers resorted to radioautographs, which are simple to prepare but make quantitative evaluation rather difficult.

The first three papers of this volume describe an instrument built at the Istituto which permits quantitative scanning of two-dimensional chromatograms. Its performance is completely automatic. The chromatogram is placed on a frame, a counter-tube scans the whole paper at regular intervals and the counts per square are recorded by a typewriter on a chart. The numbers on this chart permit the localisation of radioactive spots at sight and by adding up the counts of a spot the total activity is obtained. The design of all parts of the apparatus is given in detail in numerous drawings enabling the reader to reconstruct it entirely with the data given.

The other three papers of this book are concerned with the use of this apparatus in the study of the metabolism of marked glucose and fructose in rat liver slices, the glycogen and fatty acid synthesis in perfused rat liver and the glycogen synthesis from glucose and fructose *in vivo*.

Each paper is preceded by summaries in English, Italian, French and German. Both the printing and the drawings are of the usual high standard of the publications of the Istituto Superiore di Sanità. The reviewer found very few printer's errors.

M. LEDERER (Arcueil)