

main roots of modern clinical medicine. This vital and exciting transition took place in the new French schools of health which were a product of the Revolution. That of Paris was by far the most significant, and in this excellent book Dr E. H. Ackerknecht, professor of the history of medicine in the University of Zürich, deals with its first 55 years, 1794 to 1848.

The period was dominated by brilliant men such as Bichat, the founder of histology, his teacher Pinel, systematizer of general medicine, great teacher and psychiatrist, Broussais, the creator of physiological medicine, Corvisart, the popularizer of percussion, Laennec, the inventor of the stethoscope, and many more. Ackerknecht discusses each of the principal contributors to this revolutionary era in clinical medicine, and his phenomenal knowledge of the subject, gained from almost twenty years experience, allows him to sketch with great skill their essential background; in so doing he captures the spirit that must have infused the hospitals of Paris at that time. Little wonder that students from all the world flocked to them to learn the new medicine from its distinguished practitioners. The main goal was to discover as much as possible about the patient in life and in death, and the new techniques that were introduced furthered this end. To this was added statistics which gave numerical order to the masses of data being accumulated. Just as important, therapeutics could now be objective, although on the whole treatment advanced the least; some would say it retrogressed owing to over-zealous therapists. Another feature of the period 1794 to 1848 was the closer association of medicine and surgery which was beneficial to both.

Professor Ackerknecht's book on the Paris school of the early nineteenth century is the first in English to describe this fundamentally important period. His ability allows of little criticism, and his book, engagingly illustrated by Daumier sketches and adequately documented and indexed, will be essential reading for anyone interested in the medicine, science or general history of the nineteenth century.

EDWIN CLARKE

CHROMATOGRAPHY AGAIN

Advances in Chromatography

Vol. 4. Edited by J. Calvin Giddings and Roy A. Keller. Pp. xiv + 380. (London: Edward Arnold (Publishers), Ltd.; New York: Marcel Dekker, Inc., 1967.) 130s. net.

LIKE its predecessors, this volume contains interesting articles on a variety of topics; the greater part deals with gas chromatography, and the book is rather expensive.

The first article, by L. R. Snyder, attempts a systematic approach to the understanding and control of solute R_f values on alumina and silica in thin layer chromatography. It is a praiseworthy clarification of a very complex subject. Steroid separation and analysis are next dealt with by R. Neher, who gives guidance on choice of chromatogram for particular steroid groups and useful advice for enhancing the efficiency of the methods discussed. Ion exchange cellulose is the subject of the next article, by C. S. Knight. Introduction of the microgranular type is a distinct advance for protein chromatography. Its fundamental properties are discussed and compared with those of the more traditional microfibrillar type. Ion exchange cellulose sheets are also considered, and the article as a whole should provide a better understanding of the performance factors of all three types.

Adsorption gas chromatography, a comparatively neglected field, is covered admirably by A. V. Kisilev who, with others in the Soviet Union, has made important contributions to the subject. The standardized preparation of adsorbents with special properties has considerable potentiality. Applications and potentialities of the packed capillary column are also well brought out in the

next article, by I. Halász and E. Heine. This type of column has a diameter of 0.5 mm or less, and is prepared by drawing out a wider column already loosely filled with granular solid. The packing density of such columns is considerably smaller than that of conventionally packed capillary columns, and consequently they have higher permeability and higher separation power with only a moderate pressure drop. In the next article, by W. M. McFadden, the use of the mass spectrometer in the analysis of gas chromatographic eluants is discussed. The method is extremely sensitive, but interpretation of spectra of unknowns may sometimes be difficult. A good account of instrumentation is given and applications to various types of gas chromatogram are described. The object of the final article, by L. Rohrschneider, is to examine the relationship between polarity of stationary liquid phase as applied to gas chromatography and solvent polarity as deduced from physical chemical properties. The possibilities for defining polarity and using this for predicting retention are examined. This is largely a theoretical article which points to important practical implications.

This volume maintains the high standard of the series and contains something of interest for all who use chromatographic methods.

R. CONSDEN

MORE HETEROCYCLIC CHEMISTRY

Pyrazoles, Pyrazolines, Pyrazolidines, Indazoles and Condensed Rings

By Lyell Behr, Raffaello Fusco and C. H. Jarboe. Edited by Richard H. Wiley. (The Chemistry of Heterocyclic Compounds: a Series of Monographs.) Pp. xvi + 888. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, 1967.) 450s.

SPECIALISTS in the field of heterocyclic chemistry cannot do otherwise than welcome this new volume of collected information on pyrazoles and related types, painstakingly compiled, in very great detail, by the three authors. To quote from the editor's preface, the work covers "the transition from the classical period (1890-1920) through the development of the modern period (1905-1960)" and presents the research worker with necessary information on almost all known pyrazoles and their derivatives named in the title, in the form of preparative methods, properties, both physical and chemical, interspersed with good critical discussion. Physical methods for elucidation of structures are also well recorded. The reader is thereby saved much valuable time which would otherwise be spent in searching the literature on a subject which is very widely dispersed.

The book is in four parts. The first part, on pyrazoles themselves, is by Raffaello Fusco, whose name is well known in this field. The factual information is presented in a readable style with interesting discussion, and the section ends with a list of 1,161 references. The section is supplemented by the fourth part of the book, which comprises 110 tables, classifying pyrazoles into ten groups according to substituents, together with the main synthetic methods, physical characteristics, references, and some of the chief derivatives with their melting-points. One minor criticism could be directed at some of the formulae, which look a little odd, because of the author's determination to show which atom of a substituent is attached to the nucleus. It seems unnecessary to write H_5C_6- or H_5C_2OOC- just because the group is on the left.

The second part of the book, by C. H. Jarboe, covers the chemistry of pyrazolines and pyrazolidines equally exhaustively. The factual data are leavened by a certain amount of lively comment, and one may read "It was finally shown, amid much acrimony, that they were pyrazoline carboxylate esters" (page 195), or again, of a certain 1-pyrazoline, that the half-decomposition period