REVIEWS

Advances In Chromatography. Vol. 1. Edited by J. CALVIN GIDDINGS and ROY A. KELLER. Marcel Dekker, Inc., New York, N. Y., 1965. 395 pp. Price $14.50.

Volume I of "Advances in Chromatography" is the first of a projected series which is directed toward the separation of the "hard core" of advances of chromatography from the mass of supporting data from which that core is established. It is comprised of ten chapters, six devoted to gas chromatography and four to general chromatography, each prepared by experts drawn from both academic and industrial backgrounds in England, Switzerland, and Yugoslavia as well as the United States.

The stated intent of the Editors is to present not the customary review, but rather critical surveys which will enable the reader who cannot keep up with the explosive growth in the field to maintain an over-all view of the progress in chromatography. As so frequently happens in a compilation of this type, there is a marked difference in the extent to which the individual authors attain this objective.

The single chapter of the volume relating directly to pharmaceutical chemistry (Qualitative and Quantitative Aspects of the Separation of Steroids, by E. C. Horning and W. J. A. Vandenheuvel) thoroughly fulfills the promise of its title. This is one of five chapters which succeeds in maintaining the balance of depth and breadth of coverage needed to achieve the goal of the Editors. Of the other five chapters, two are rigorous theoretical presentations of quite narrow topics, while a third covers a broad field at a rather elementary level. The remaining two fall between these.

Column partition chromatography is not discussed in this volume (nor in Volume II of the series, the contents of which are presented), although the chapter "Ion Exchange Chromatography," by F. Helfferich, alludes to a partition chromatography which differs from Martin and Synge's concept of the term.

A very interesting contrast in emphasis is found in two chapters. In "Separation of Steroids" a single sentence notes that separation of steroids became practical only after decreasing the amount of liquid phase; the chapter "Lightly Loaded Columns," by B. L. Karger and W. D. Cooke, is entirely devoted to the effects of this decrease. The two chapters thus complement each other.

In addition to the chapters mentioned above, the volume includes: "Chromatography and Electrophoresis on Paper and Thin Layers: A Teachers Guide," by Ivor Smith. "The Stationary Phase in Paper Chromatography," by G. H. Stewart. "The Techniques of Laminar Chromatography," by E. V. Truter. "Capillary Columns: Trials, Tribulations, and Triumphs," by D. H. Desty. "Gas Chromatographic Characterization of Organic Substances in the Retention Index System," by E. Sz. Kováts. "Inorganic Gas Chromatography," by R. S. Juvet, Jr. and F. Zado. "Interactions of the Solute with the Liquid Phase," by D. E. Martire and L. Z. Pollara.

This volume will be a worthwhile addition to the library of the pharmaceutical chemist.

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Catalytic Hydrogenation: Techniques and Applications in Organic Synthesis. By ROBERT L. AUGUSTINE. Marcel Dekker, Inc., 95 Madison Ave., New York, N. Y., 1965. xii + 188 pp. 15.5 × 23 cm. Price: $8.75.

Periodically there becomes available a book which the chemist interested in preparative aspects of organic chemistry finds exceedingly useful. This is such a book.

The book presents descriptions, with illustrations, of the various types of apparatus available for carrying out hydrogenations as well as more detailed operating instructions for the more commonly used pieces of equipment. A chapter is devoted to the catalyst, reaction conditions, and the effects of variables such as temperature and pressure on the course of a hydrogenation. The catalysts which are discussed are those used most often in catalytic hydrogenation procedures and include nickel, platinum, palladium, ruthenium, copper–chromium oxide, and rhenium. Specific directions for preparing a number of these catalysts are given in an appendix.

In following chapters, there are presented general procedures for hydrogenation and hydrogenolysis of functional groups. Examples of virtually all functional groups and heterocycles capable of undergoing hydrogenation or hydrogenolysis are included. Such aspects as choice of catalyst, limitations of a given catalyst, and problems likely to be encountered in the hydrogenation of these functional groups are discussed. The stereochemical implications of hydrogenation reactions are discussed where pertinent, although rather briefly in some instances.

The literature pertaining to catalytic hydrogenations is vast and many procedures having preparative utility appear in papers which do not deal specifically with catalytic hydrogenation and for this reason may often be overlooked. However, the references used by the author are well chosen to illustrate the points being made and provide the reader with a source of more detailed information.

The text is well written, concise, and easy to read. Boldface type is used to make the recommended procedures for hydrogenation or hydrogenolysis of the common functional groups stand out. The author index is conveniently arranged so that both the page on which the work is cited and the page on which the full reference citation appears are given.

The book should be a particularly useful and ready source of information on preparative applica-