

BOOK REVIEWS

Chromatography. A Review of Principles and Applications. Second, Completely Revised and Enlarged Edition. By EDGAR LEDERER, Professor of Biochemistry, Sorbonne, Directeur de Recherches, Institut de Biologie Physico-Chimique, Paris, and MICHAEL LEDERER, Maitre de Recherches, Institut du Radium, Paris. D. Van Nostrand Company, Inc., 120 Alexander Street, Princeton, New Jersey. 1957. xx + 711 pp. 16 × 23 cm. Price \$12.75.

Four years after the appearance of the Lederers' first edition of "Chromatography," this excellent summary had to be revised and expanded to double its size in order to do justice to the flood of publications in this field. The reason for this expansion is that nowadays hardly any experimental work in chemistry is started without at least some considerations of the possibility of using chromatographic methods for purification or analysis.

A short, but properly documented, history precedes a 150-page discussion of adsorption, ion exchange and partition chromatography. This more general treatment is followed by a detailed survey of the chromatography of organic and inorganic substances. These sections, comprising nearly 80% of the book, will be of great help to the worker in selecting the proper method suited to this problem, and will save him a tremendous amount of literature search. The most spectacular progress in the intervening years has been in the field of gas and liquid chromatography, and in order to keep the reader up-to-date as much as was possible during the editing, an appendix was added to supply references in the 1956 period. The results of this heroic effort is a literature list which, even after Lederers' thorough screening, still contains 4,000 references.

Although a review of this kind could easily deteriorate to a cook-book of unrelated recipes, the authors succeeded in presenting an attractive blend of theory and practice. Every chemist or biologist owes thanks to the Lederers for compiling this survey of a method which, in a short period, has crossed the barriers of many scientific disciplines.

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Les Fondements de la Chimie Théorique. Mécanique Ondulatoire Appliquée à l'Étude des Atomes et des Molécules. Volume VI. Traité de Physique Théorique et de Physique Mathématique. Ouvrages Réunis par Jean-Louis Destouches. By RAYMOND DAUDEL, Lauréat de l'Institut, Secrétaire Général du Centre de Chimie Théorique de France, Chargé de cours à la Sorbonne, Gauthier-Villars, 55 Quai des Grands-Augustins, Paris VI, France. 1956. x + 236 pp. 16.5 × 25 cm. Price, \$10.20.

Every research worker in the quantum theory of molecular electronic structure will want to read this book, and it also should be of interest to beginning students. It contains the most up-to-date and frank account of this field yet published.

This is only the first of three projected books by the author on molecular structure and chemical reactivity, but it nevertheless spans the whole theory of electronic structure of atoms and molecules. Very little is said about atomic or molecular spectroscopy; the stress rather is on the description of atomic and molecular electronic states in terms of wave functions of varying degrees of complexity. Literature references through 1954 are cited, although no mention is made of the important papers of Boys, McWeeny and Moffitt (to name three), and appreciation is not shown for the current importance of electronic computing machines in this field.

The book is divided into two equal parts, one dealing with atoms, one with molecules. 45 pages in the first part are devoted to discussion of "la notion de couche," 32 pages in the second to discussion of "nature et classification des liaisons chimiques." These sections contain much material that is original with the author.

In the main the language used is the present vogue.

However, it seems undesirable to define the "electronic energy" of a molecule to include nuclear repulsion energy, as is done on p. 123, and the unhappy old term "la methode des orbitales atomiques" appears repeatedly. Curious notations are rampant in the equations.

The book and its paper cover had half parted by the time this reader had reached its last page, but his annoyance at this was partly assuaged by something he found there—an invitation to head for Paris!

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The Structure of Nucleic Acids and their Role in Protein Synthesis. Biochemical Society Symposium No. 14 held at The London School of Hygiene and Tropical Medicine on 18 February, 1957. Organised and Edited by E. M. Crook. Cambridge University Press, 32 East 57th Street, New York 22, N. Y. 1957. 74 pp. 16.5 × 25.5 cm. Price, \$3.75.

This brief volume is an excellent and highly readable status report on the title subject. Each of the five chapters is a concise survey of the background and general area of the authors' research interests, and, with the two informative introductions, they provide a perspective of the evolution of the concepts regarding these evolutionary substances. The whole is a comprehensive picture of the structure of nucleic acids, and of the intricate morphological and metabolic relationships which so closely intertwine them with the proteins.

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Quelques Problèmes de Chimie Minérale. Rapports et Discussions publiés par les Secrétaires du Conseil sous les auspices du Comité Scientifique de l'Institut. Dixième Conseil de Chimie tenu à l'Université de Bruxelles du 22 au 26 mai 1956. Institut International de Chimie Solvay. R. Stoops, Editeur, 76-78, Coudenberg, Bruxelles, Belgium. 1956. 545 pp. 17 × 24.5 cm. Price, Broché 590,-; relié, 675,-.

This volume contains twelve papers presented at the X-th Solvay Congress on Inorganic Chemistry in 1956. The subjects discussed fall roughly into three main topics, non-stoichiometric compounds, complex compounds of transition metals and the solid state chemistry. Seven of the papers are in English, the rest are in French. The authors are R. M. Barrer, J. Benard, R. Collongues, H. M. Powell, R. S. Nyholm, L. E. Orgel, C. K. Jorgensen, W. A. Weyl, R. Lindner, J. A. Hedvall and H. Forestier.

The papers deal with the more recent developments in the above three fields. Although a strong emphasis is made on the theoretical aspects of the discussed topics, the presentation should be clear and readable to a non-specialist. As can be seen from the list of the authors, the presentations were all made by well-known authorities in the respective fields and the coverage is uniformly good. Each paper is appended by a transcript of a discussion which followed the presentation, which, on occasions, are as voluminous as the original paper. The discussions raise numerous interesting points and in the reviewer's opinion this feature adds considerably to the value of this compilation. Numerous bibliographical references are given, most of which refer to more recent work. The printing and the illustrations are clear and only a few minor typographical errors were observed. In general the book can be recommended strongly to any chemist desiring to acquaint himself with the present day status of the three discussed topics.

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