

(Academic Press, Inc., N. Y., 1950), which has been published in four parts and contains chapters by over eighty authors. What such a work gains in comprehensiveness and usefulness as an ultimate source of references, it lacks in orderly organization, readability and freedom from repetition. Such works—with the exception of certain well-written chapters—are too detailed, or sometimes simply too imposing to serve adequately as textbooks for students. Thus, a new demand for up-to-date, preliminary or introductory textbooks is being created in fields that have never required them before.

It is a pleasure to find a new work by a single author that covers so thoroughly and well a field as vast and complex as enzymology. Prof. Hoffmann-Ostenhof's book was designed to meet an acute need for a modern German textbook on the enzymes. There is no question that the present volume will fill that need admirably. With respect to scope and coverage, this book is especially noteworthy. Prof. Hoffmann-Ostenhof has managed to keep abreast of and evaluate developments in all of the myriad departments of enzymology that have taken place in America, England, Europe and Asia. Few textbooks can boast, at the time of publication, of as exhaustive a review of the available international literature as this one can.

The first seventeen chapters (170 pages) deal with the history of the subject, with the physicochemical nature of enzymes, their synthesis and specificity, and with enzyme kinetics and thermodynamic considerations. The following thirty-one chapters constitute a catalog of the known enzymes, their properties and reaction mechanisms. In a final chapter of 57 pages the author attempts to portray the role of enzymes in intermediary metabolism, their operation in biochemical sequences and cycles, and their organization in cellular organelles. Such a short chapter cannot pretend to deal adequately with the dynamic aspects of interactions of enzyme systems *in vivo*. This small proportion of space devoted to dynamic considerations in such a large work points up the fact that the book is primarily concerned with enzyme statics, which is justifiable, of course, on the grounds that it is the logical prerequisite for a study of metabolism and cytochemistry at the biological level.

In order to cover so much material within the confines of one volume of 772 pages, the author's style is necessarily concise and condensed. Nevertheless, German-reading students of biochemistry and metabolism will probably find the book rewarding. Unfortunately, however, the price of the book seems prohibitive.

The author is to be congratulated for his success in carrying out such a difficult assignment and in making an important contribution to the international literature of biochemistry.

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Borderland of the Unknown. The Life Story of Gilbert Newton Lewis, One of the World's Great Scientists.
By ARTHUR LACHMAN. Pageant Press, Inc., 130 West 42nd Street, New York 36, N. Y. 1955. viii + 184 pp. 14 × 20.5 cm. Price, \$3.00.

In the words of the author, this book is "chiefly about Gilbert Lewis" but it includes a considerable amount of *apologia* by the author and much digression. The book is best characterized as an account of the chemistry department at Berkeley in the middle years as viewed from the vantage point of the Faculty Club. It is largely anecdotal in character and those who knew Lewis will recognize the anecdotes as authentic. However, the book does not live up to its pretentious title.

Some years ago a biographer attempted to humanize Willard Gibbs and only succeeded in making both parties appear foolish. Dr. Lachman has done the same thing for Lewis and succeeded too well. The emphasis on Lewis's rather puckish sense of humor seems to diminish his stature as a man and a scientist.

The relation of G. N. Lewis to Willard Gibbs could be the subject of an interesting study. Though he came long after Gibbs he was still his immediate successor and a voice crying in the wilderness, as it were. It is easy to see why he did not use the notation of Gibbs in thermodynamics. But Lewis did not choose to follow the method of Gibbs and

this loss of continuity with the great master seems to mar what is otherwise a great work.

Lewis was a non-conformist, even a rebel, as is shown by his resignation from the National Academy. It would be interesting to speculate as to what extent he was affected by his early academic experience at Harvard. His career was a great achievement but in view of his temperament it was inevitable that he would experience disappointment and frustration. This is not to his discredit. He did not suffer fools gladly.

There are those who think that G. N. Lewis was the greatest American scientist after Willard Gibbs and it is to be hoped that eventually a less casual account will be given of his scientific career.

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Elektrolytische Abscheidung und Elektrokristallisation von Metallen. By HELLMUTH FISCHER, Ph.D., Hon.-Professor an der Techn. Hochschule, Karlsruhe. Springer-Verlag, Reichpietschauer 20, Berlin W 35, (West-Berlin), Germany. 1954. xii + 717 pp. 16.5 × 23.5 cm. Price, Ganzleinen DM 72.-.

This book truly constitutes a monumental piece of work standing alone among a vast research literature which Dr. Fischer is the first one to have assembled for presentation in a single volume devoted to the fundamentals of electroplating and electrocrystallization. For the technical aspects of the subject the literature is rather rich (see for instance "Modern Electroplating" published by John Wiley and Co. under the auspices of the Electrochemical Society). The amount of material covered in Dr. Fischer's book is so huge that the presentation is occasionally bound to be a somewhat empirical enumeration of facts and theories. Nevertheless the completeness and up-to-date character of this treatise are admirable and the author displays perfect versatility and ease in the presentation of the many different aspects of his subject. The students of physical chemistry, electrochemistry, metallography and science of metals in general, crystallography, surface chemistry, galvanoplasty, electrometallurgy and of a number of other engineering subjects will all find valuable material in this book and will owe a debt of gratitude to Dr. Fischer for having found the time and energy to write it.

The book is divided into four main parts: 1. Electrochemistry, with six main subdivisions: Fundamentals and definitions. The electric double layer. The diffusion film at the cathode. The mechanism of cathodic plating. The effect of inhibitors. Distribution of lines of current and effect of depth. 2. Electrocrystallization, with four subdivisions: Kinetics of the crystallization process. Mechanism of electrocrystallization. Growth patterns of polycrystalline deposits. Codeposition of non-metals in the cathodic metallic deposits. 3. Chief properties of cathodic metallic deposits, with seven main subdivisions: Bright metallic deposits. Inner stresses in cathodic deposits. Hardness of deposits. Electric resistance. Adherence. Corrosion behavior. Structure and properties of electrolytically deposited alloys. 4. Conditions for deposition and properties of various metals and alloys, with eight main subdivisions corresponding to metals considered in groups (Pb, Sn, Ti-Bi, Sb, As-Ag, Cu, Au-Zn, Cd-Fe, Co, Ni); Cr is considered alone and in great detail, the last two sections being devoted to the conditions of preparation of coatings of the classical Cu-Zn alloys and of the various alloys with Sn.

All the subdivisions of the four main parts are systematically divided in numbered paragraphs, some of which are further divided, with the result that, through the 10-page Table of Contents, the reader can locate easily what he needs in the midst of this abundant fare.

The authors' index of 9 packed pages shows how completely and recently the literature has been covered. A detailed subject index of 56 pages concludes this very fine volume. The printing and quality of paper are excellent.

The reviewer strongly suggests that an English translation of Dr. Fischer's book be made available as soon as possible.

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