

**NEW BOOKS.**

ANNUAL REPORTS ON THE PROGRESS OF CHEMISTRY FOR 1906. Issued by the Chemical Society. Vol. III. London: Gurney and Jackson 1907. 387 pp. Price, \$2 net.

The arrangement of the material in this, the third, volume of these epitomes of the progress of a year along each of a number of lines of chemical science is the same as that previously employed, and the reports are written by the same authors as in 1905, with the exception of that upon General and Physical Chemistry, which is prepared by A. Findlay instead of James Walker.

General and Physical Chemistry are treated apart from Inorganic Chemistry; Organic Chemistry is subdivided into aliphatic, homocyclic, and heterocyclic divisions, and Stereochemistry is separately treated. Analytical, Physiological, and Mineralogical Chemistry, and Radioactivity, each has a separate reviewer, while Agricultural Chemistry and Vegetable Physiology are combined in one report.

As in the earlier volumes of this series, an effort has been made to render the reviews readable and more attractive than a mere compilation of data. The results are excellent, and seem to have been attained without sacrifice of accuracy. It is almost inevitable that such a presentation should involve the frequent expression of the personal convictions of the authors, and it is not surprising that these should, at times, become a bit obtrusive. As between this evil and a prosy cataloguing of articles, the reader will quickly accept the style adopted in this volume as the less objectionable, particularly since the authors may claim to speak with authority in their respective fields.

These reports include only notices of papers which represent an advance in our knowledge of chemical science. The selections made by the respective authors appear to be wisely chosen, and the statements, necessarily very concise, are adequate to lead the reader to institute further search among the original papers, when his interest is aroused. The volume as a whole constitutes a valuable aid to the busy worker. It would seem to the reviewer that, in spite of the references to industrial chemical progress which are included in the Reports as now subdivided, they would gain in value to the technical chemist, if a review devoted to Industrial Chemistry were added. This field is, of course, exceedingly broad, but with the same judicious selection of topics which is shown in the present reviews, the important advances of the year might well be brought within proper compass. The fact that this field is covered in another journal in English does not seem to entirely excuse its omission from these volumes.

H. P. TALBOT.

ORGANIC CHEMISTRY, INCLUDING CERTAIN PORTIONS OF PHYSICAL CHEMISTRY, FOR MEDICAL, PHARMACEUTICAL AND BIOLOGICAL STUDENTS (WITH PRACTICAL EX-

EXERCISES). By H. D. HASKINS, A.B., M.D., Instructor in Organic and Bio-Chemistry, Medical Department, Western Reserve University; Professor of Chemistry, Cleveland School of Pharmacy, and J. J. R. MACLEOD, M.D. (Aberdeen), D. P. H. (Cambridge), Professor of Physiology, Western Reserve University. New York: John Wiley and Sons. London: Chapman and Hall, Limited, 1907. Small 8vo. xii + 367 pp. Price, \$2.00.

This text-book aims to give not only the facts of organic chemistry (with instructions for laboratory exercises) but also the most important facts of physical chemistry which have an essential bearing on medical science. The introductory chapters on physical chemistry are well written and on the whole correct (see, however, an error in the last paragraph on p. 43 in regard to the osmotic pressure of a solution), and they aroused the expectation of finding an equally well written short text on organic chemistry. As in many recent similar texts, there is much that is thoughtful and praiseworthy in the discussion of structures and the development of the experimental evidence in favor of given structures and in the ordinary treatment of organic chemistry; but one is disappointed in finding in a book that aims to include in its work a few of the fundamental concepts of physical chemistry so little of its spirit *realized* in the treatment of organic reactions; for instance, the old superficial parallel in the equations of ester and salt formation is emphasized (p. 93) and the esters are still called "ethereal salts" "comparable with the salts of inorganic chemistry," (p. 125), although they have none of the properties of salts. It is true that the differences in behavior and formation of esters and salts are *mentioned*, but the authors do not seem to have had the courage to break with the old, wrong conception and thus there is left a confusing impression on the reader. Aside from a brief discussion of the reversibility of esterification and saponification, no use whatever is made of the facts of reversibility and equilibrium in this book, although they are of especial importance for physiologists and are essential in a book that claims to use the modern concepts of physical chemistry. In part, even the ordinary treatment of purely organic topics is decidedly faulty; the emphasis laid on the proportion of hydrogen and oxygen in the carbohydrates (p. 209) is misleading and gives a wrong conception of the essential nature of carbohydrates. In no place, for instance, is any mention found of the true sugar group  $\text{—CH(OH)—CO—}$  and from misleading remarks about the reducing power of ketones (pp. 138 and 216) it appears the authors are not clear in their own minds about the reducing power of the "sugar group." On page 214 we are told that there are *eleven* stereoisomeric acids having the structure  $\text{HOOC(CHOH)}_4\text{COOH}$ ! The most glaring fault of the book is in the language used in giving the instructions for laboratory work (see pp. 85, 86, etc.); they are not written in English but in the laboratory jargon which is the pitfall for most fresh

young doctors of philosophy in writing their dissertations and which makes abominable reading! So while the book was undertaken in a praiseworthy attempt to bring the subject of organic chemistry into closer relationship to the modern conceptions of physical chemistry, it is hardly a success in this respect and is only of average value and in part badly written as an ordinary text-book of organic chemistry.

UNIVERSITY OF CHICAGO,  
November 16, 1907.

JULIUS STIEGLITZ.

A TEXT-BOOK OF ORGANIC CHEMISTRY. By A. F. HOLLEMAN, PH.D., F. R. A., Amsterdam, Professor Ordinarius in the University of Amsterdam. Translated from the Third Dutch Edition by A. J. WALKER, PH.D., assisted by OWEN E. MOTT, PH.D., with the coöperation of the author. Second English Edition, Rewritten. New York: John Wiley & Sons. London: Chapman and Hall, Limited. 1907. 8vo. xv + 589 pp. Price, \$2.50.

According to the author's preface to this second English edition of his text-book on organic chemistry, the chief changes made are in the chapters on the constitution of benzene and on pyrrole. In presenting the vexed question of the constitution of benzene the plan is adopted of giving all three of the most prominent formulæ, Kekulé's, von Baeyer's and Thiele's, with an explanation and a very brief criticism of each.

There is legitimate ground for a wide divergence of opinion in regard to the best order of arrangement for the presentation of the facts of organic chemistry. It seems to the writer, however, that with the facts of isomerism and the theories of structure, stereoisomerism and tautomerism,<sup>1</sup> the fundamental point which must be most clearly understood by the student for a working acquaintance with organic chemistry is the difference in behavior between saturated and unsaturated compounds. This difference is brought out most effectively from the experimental and theoretical side, by a study of the properties of the unsaturated hydrocarbons. The point of view acquired there is most useful, in fact, essential, in the study of the reactions of the aldehydes and ketones as unsaturated compounds, in which absorption reactions play an extremely important rôle, in which the smaller degree of stability of the addition products involves no difficulty in presentation after a thorough discussion of the olefines and acetylenes, and in connection with which relative instability, a further fundamentally important point of view for organic as for inorganic chemistry may so easily be developed; namely, the conception of organic reactions as reversible ones, which should be treated

<sup>1</sup> This question is treated on p. 305, and the discussion is restricted to the 1:3 diketones. It is a question affecting very many important classes of organic compounds (acid amides, nitroparaffins, mono-aldehydes and ketones and their hydrazones and oximes, phenols, etc.), and it seems to the writer that *in a book of this class*, it ought to be taken up as a part of the question of isomerism at as early a point as possible.