

NEW BOOK.

A Class Book of Organic Chemistry. By J. B. COHEN, PH.D., B.Sc., F.R.S., University of Leeds. First Edition. Pp. 344. New York: Macmillan Company, 1917. Price, \$1.40.

This book was written to fill a much-needed demand, to cover a brief but comprehensive course in organic chemistry for pre-medical or first year medical school students as well as for those requiring a short general knowledge of organic chemistry. It contains laboratory experiments which have been put in their proper places with the theoretical discussion so that the book may be used as a laboratory manual as well as a text book. The material has been presented in a novel way. It is divided into three parts. In the first part, the beginning deals with the explanation of the general principles underlying the determinations of purity, empirical and molecular formulas and structure. Then follows a careful study of the mode of preparation and chemical reactions of ethyl and methyl alcohol as well as a description of the chemical and physical properties and structure of the substances easily produced from them as ethyl ether, acetaldehyde and formaldehyde, acetic acid and formic acid, etc. The second part of the book is devoted to a systematic study of aliphatic compounds. The material in this part is almost identical with the corresponding chapters in the aliphatic section of the "Theoretical Organic Chemistry" by the same author. The order of presentation, however, is slightly changed and the chapters on nitroparaffins, sulfur compounds and metallic organic compounds have been omitted. No repetition is made of what occurs in the first part. The third part is a brief account of the more important compounds of the aromatic series presented in a very similar way to that in the "Theoretical Organic Chemistry" but considerably shortened.

In reviewing this little book, one finds in general, the same fault which characterizes most of the elementary books in organic chemistry, that the authors do not take the trouble to keep them strictly up to date in every respect. Thus, on page 38, one finds the statement "but the peroxide (referring to diethyl peroxide) has not yet been obtained though there is no apparent reason for its non-existence," although we find a thorough study of this compound in *Ber.*, **33**, 3388 (1900); again on page 159, one finds the old structural formula of cane sugar given although the evidence¹ is very strong that the older one is not correct; still again, in spite of the fact that the book was written primarily for medical school students, nearly a page is devoted to the estimation of urea by the hypobromite method when this has been shown to be inaccurate and has practically been displaced by the urease method.

In writing a text book of this type, one realizes the extreme difficulty

¹ *J. Chem. Soc.*, **109**, 1314 (1916).

of the author to know what material should be included and what should be left out. It seems, however, unreasonable that even in a book of this size many pages should be devoted to a description of compounds of comparatively little practical or theoretical importance as, for example, two half pages to isocyanides, cyanuric acid and cyanates while not even a mention is made of one of the most important reagents in organic chemistry, the Grignard reagent.

Another point which can not be overlooked in reviewing this book is the too large proportion of space devoted to laboratory experiments, one hundred and seventy-seven in all. Many of these experiments are by no means easily carried out and are too difficult for the class of students for which the book is meant. Thus, one finds the preparation of phthalic acid from naphthalene, of salicylic acid from phenol, of benzaldehyde from benzyl chloride, of benzyl chloride from toluene, of phenyl hydrazine from aniline, of glycocoll from chloroacetic acid, of ethyl acetoacetate from ethyl acetate and many others, preparations in which much more advanced students often have serious trouble. To a teacher who has not had considerable experience in organic chemistry, the results that his class would obtain in these experiments might prove disconcerting.

In conclusion, it may be said that the material in this book is presented in a clear, concise and interesting way as in the other books by the same author and that any teacher of an elementary course in organic chemistry may well review it and consider carefully the mode of presentation of the subject. With some discrimination by those using it as a text and laboratory manual, this book should prove of value in the teaching of elementary organic chemistry.

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