

TEXT-BOOK OF ORGANIC CHEMISTRY. BY HENRY LEFFMANN, A.M., M.D., AND CHARLES H. LAWALL, PH.G. Philadelphia: P. Blakiston's Son & Co. 1904. 231 pp. Price, \$1.00.

"This book is offered as an aid to the study of organic chemistry in connection with general and professional colleges." As the authors are of the opinion that certain descriptive topics do not receive in the smaller text-books the attention they deserve, they have emphasized such topics, and have given very readable chapters on such subjects as enzymes, purines, alkaloids, proteids, etc. To do this and still keep the size of the book small, they have sacrificed the theoretical side of the science. The book is entirely descriptive: it treats of organic chemistry with all the science left out. Very elaborate structural formulae of many compounds are given, to be sure, but there is no statement, as far as the reviewer can find, of the methods of determining structure even in the simplest cases. Many of the most elementary synthetic methods are omitted, *e. g.*, no general method for the preparation of the hydrocarbons of the fatty series is given. Even the most important reactions of the diazo compounds are not described.

Some of the statements in the book are far from clear and some are inaccurate. This criticism applies especially to the consideration of such subjects as fractional distillation, molecular weight determination, and valence.

Experiments are introduced, the chemistry of which cannot be understood from the descriptive matter given in the text.

The book contains some mistakes, *e. g.*, the definition for proof-spirit is not that used in the United States. The proof-reading has been carelessly done. Mistakes in the structural formulae of the following have been noted: Cyanogen, isocyanogen, propenyl, salicin, saccharin, and diazo-benzene (benzene diazonium) sulphate. The authors have expressed themselves at times in a careless and obscure manner, *e. g.*, page 67, "a compound ether or ester is the replacement of the hydrogen of an acid by one or more molecules of a hydrocarbon."

On the descriptive side of the science the book is unusually complete for one of its size. Many compounds of interest to the physician, pharmacist, and student of the chemistry of foods, which are not to be found in the text-books, are described. The book will be helpful to those teachers who wish to bring before

their classes simply the facts of organic chemistry, and desire on the part of their students a knowledge rather of the properties of certain useful compounds than of the principles of the science.

JAMES F. NORRIS.

**THE PHASE RULE AND ITS APPLICATION.** BY ALEX. FINDLAY, with an Introduction to the Study of Physical Chemistry by SIR WILLIAM RAMSAY. New York: Longmans, Green & Co. lxiv and 313 pp. Price, \$1.25 net.

This is the first volume of the series of text-books on physical chemistry edited by Sir William Ramsay, of which the book on "Electro-chemistry" by R. A. Lehfeldt has already been reviewed in this Journal (27, 80.)

In the introduction (xlvii pages) which is also for sale separately (\$0.25), Sir William Ramsay gives a very interesting historical review of the development of physical chemistry and a brief discussion of many future problems. The author has divided the main work into the following chapters: I. Introduction; II. The Phase Rule; III. Typical Systems of One Component; IV. General Summary; V. Systems of Two Components—Phenomena of Dissociation; VI. Solutions; VII. Solutions of Solids in Liquids, only One of the Components being Volatile: A. Anhydrous Salt and Water; VIII. B. Hydrated Salt and Water; IX. Equilibria between Two Volatile Components; X. Solid Solutions; Mixed Crystals; XI. Equilibrium between Dynamic Isomerides; XII. Summary. Application of the Phase Rule to the Study of Systems of Two Components; XIII. Systems of Three Components; XIV. Solutions of Liquids in Liquids; XV. Presence of Solid Phases; XVI. Isothermal Curves and the Space Model; XVII. Systems of Four Components. In an Appendix are treated the methods for the experimental determination of the transition point.

In the opinion of the reviewer this book is a remarkably good one, for the author has performed his task in a very satisfactory manner. As can be seen from the short list of the contents, nearly all important problems relating to the phase rule have been taken up, and the different topics are treated with much thoroughness and with conciseness, so that any student or worker in another branch of chemistry will derive great advantage from the study of this book. The work might be improved in some matters of detail (for instance, it would be desirable to give also