subjects are given: James H. Beal has written the *Introduction;* A. R. L. Dohme tells of the *Dawn of Pharmacy;* E. F. Kelly of the *Source of Drugs;* Heber W. Youngken discusses *Drugs from the Vegetable Kingdom;* William J. Husa writes on *Drugs from Mineral Sources;* John F. Anderson tells of Bacteria-Made Drugs and Vitamins; Roger Adams and Oliver Kamm tell of *Drugs Made by Man;* Ernest H. Volwiler writes on related lines of the former; James C. Munch tells *How Drugs Are Made Uniform;* Robert L. Swain writes of *Drugs, the Law and Public Health;* W. Bruce Philip has prepared a chapter on *The Corner Drug Store* and John C. Krantz, Jr., presents *The Outlook of Pharmacy in the Era of Science.*

The volume contains twenty-six illustrations—portraits of laboratory procedures, of some of those who contributed to the story of pharmacy, to its history, and pictures illustrating the story of drugs. The completion of the book, it seems to us, marks an important event for pharmacy.

Structure Symbols of Organic Compounds. By INGO W. D. HACKH. First edition, viii + 139 pages. P. Blakiston's Son & Co., Inc., Philadelphia. Price $2.50.

This book gives a complete description of the system of structure symbols or chemical shorthand which the author has successfully used for several years with many types of students. The author states that more organic chemistry can be covered with the average class in a given time with the aid of this notation, which is adaptable to both the older and newer concepts of structure.

In the first chapter, the fundamental concepts of atomic and molecular structure are briefly and clearly stated. The second chapter includes a description of the structure symbols. In this system the chemical symbols H, C, O and N are eliminated, these elements being indicated by lines. For example, a point where two lines cross represents an atom of carbon, and a point where a line terminates represents an atom of hydrogen. Double and triple bonds are appropriately indicated. In electronic structural formulas electrons are indicated by dots. In the third chapter, the structural formulas of about 1000 organic compounds are shown in the author's notation. The author does not include a critical review of structure symbols in general, but readers wishing information of this nature will be particularly interested in the bibliography at the end of the second chapter.

It appears that much time and effort would be saved by the general use of a system of chemical shorthand. A notation of this kind might be considered as an extension of the use of the benzene ring. No one would think of discarding the benzene ring. Likewise it seems fair to assume that one familiar with the notation described in this book would not give it up after becoming accustomed to its use.

Examples are given of the application of the notation in research in the prediction of substitution reactions. While the book is intended primarily for students and teachers, it is of interest likewise to the research man or any one interested in a concise notation for organic compounds.—WILLIAM J. HUSA.

An Introduction to Practical Bacteriology. By T. J. MACKIE, M.D. and J. E. MCCARTNEY, M.D. Publishers, Wm. Wood & Co., New York. Price $3.50.

This is the third edition of this book on Bacteriology and should be in the library of everyone who has any routine bacteriological work to do. It is arranged in twenty-three chapters, each written in a very understandable way by two authors who are well known in their field.

The authors have succeeded well in writing a book that contains the more important things in bacteriology without unduly increasing the number of pages. They are to be commended upon the fact that they use Bergey's Classification throughout, and have not neglected any branch of bacteriology, including also a section on "Bacteriological Examination of Water and Milk and the Testing of Antiseptics;" another chapter is devoted to "Tropical Organisms" and various pathogenic streptothrices and mycoses have been given due consideration. The section on the "Malaria Plasmodia" is especially well written and "Filterable Viruses" take up a chapter; bacteriophage is not neglected. Each organism is taken up following a definite method of presentation, which makes it useful as a ready reference, and a folded chart of biochemical reactions of various bacilli is convenient for routine work.

There are a few criticisms that might be offered, such as suggesting an enlargement of the chapter on "The Physiology of Bacteria." The chapter on "Immunity" would be better

placed following chapter VI, the one on the "Use of the Microscope" is probably longer than necessary because the average student in the American schools is well acquainted with the microscope by the time he takes up bacteriology.

A section on "Dark-Field Illumination and the Use of the Dark-Field" is very important; this subject is often neglected because the importance of the Dark-Field is not realized until one becomes acquainted with its value. The chapters on "Cultivation of Micro-Organisms" and "Staining Methods" are well written, and that on "Immunological and Serological Methods" has been brought up-to-date.

The fact that the work is in the third edition shows that it has fulfilled the authors' wishes and aims; it has been carefully prepared and contains more than 400 pages of text matter. The index is quite complete and the illustrations are clear and demonstrate important points. The book fills a want in bacteriological work and the reviewer recommends it to students and also to those who are reviewing the subject.—JOHN M. HAYNES.

Manual der Pharmazeutischen Zeitung. Prepared under direction of the *Pharmazeutische Zeitung* by RICHARD BRIEGER, Ph.D., editor of science of that publication. Published by Julius Springer, Berlin, Germany. 234 pages. Price R.M. 11.

The Preface states that, while there are many formularies, numerous requests reach the publication for formulas and, hence, it has been deemed advisable to collect those given in the columns of the *Pharmazeutische Zeitung* from other sources and publish them in book form.

The formulas are classified but not alphabetically arranged—the first fifty or more pages include cosmetics, toilet preparations, etc.—creams, pomades, hair dyes, waters, perspiration powders, tooth powders, talcums, bath powders and the like. A number of related formulas follow for discolorations, itching; pastes, salves, ointments. Digestive aids, pills, laxatives, purgatives are in another group, including manufacture of tablets. A number of pages are given to solutions of various types of polishes, varnishes, cleaning fluids, deodorizers, disinfectants; inks, manifolding methods; treatments for plants and animals. Miscellaneous items include cements, mucilages, colored fires, dyes and some attention is given to dispensing, laboratory products and methods. The book follows the lines of other formularies, some of the preparations are for German demand, but the greater number are serviceable in all countries. The selection of formulas has been made with judgment and the composition of them indicates that they have been employed in practice.

Quarterly Journal of Pharmacy and Pharmacology. Volume IV. January–March, 1931. Pp. vi + 160. Price 10s. Pharmaceutical Press, London.

We are quoting the *Pharmaceutical Journal and Pharmacist* in the following comment and review: The number of this *Journal* for the first quarter of the present year contains six research papers, three of which are from the Pharmaceutical Society's Research Laboratories, namely: "Podophyllum Rhizome —American and Indian. Crude Fibre; Tests for the Resins; Adulteration with Guaiacum Wood," by T. E. Wallis and S. Goldberg; "The Structure of Carbohydrates—I. The Synthesis of a 5-Methoxyketose," by Eric Frank Hersant and Wilfred Linnell; and "A Note on the Buffering Substances in Ergot," by Frank Wokes and G. K. Elphick. The subjects of the other papers are "Electrometric Studies of Complex Formation—II. The Tartrates of Bismuth," by C. Morton; "The Isolation and Properties of Visammin, Visammidin, Visnaginin, Visnagidin, Khellinin, Khellidin and Visnagan," by Karam Samaan and the "Pharmacological Actions of Harmol." There are fifty-two pages of abstracts, the subjects being chemistry and its subdivisions, twenty-eight pages; pharmacognosy, two pages; pharmacy and its subdivisions, seven pages; pharmacology and therapeutics, three pages; bacteriology and clinical tests, one page; and new remedies, three pages. There is something for all classes of practicing pharmacists in the *Quarterly Journal*, and the pharmacist in retail business would do well by a study of the abstracts and the list of new remedies to keep himself posted up as to progress in the branches of science which have a bearing on pharmaceutical practice."

The *Quarterly Journal of Pharmacy and Pharmacology* is serving a very useful purpose and American pharmacists will find the publication of great value in the laboratories and in the prescription department.