

methods are given in such detail that diagnosticians and technicians with moderate experience should be able to follow them and obtain satisfactory results. Most of the directions are sufficiently explicit for beginners, especially if working under the eye of a director. This is not true of the chapter on water analysis which is inadequate for practice without the aid of reference books. No other single book within the reviewer's knowledge contains so much practical information concerning the laboratory technique required in a public health laboratory. Its range of usefulness would have been wider if methods for determining the phenol coefficient had been described. The book should be in every laboratory where routine examinations of diagnostic materials are made.—L. E. WARREN.

A Manual of Materia Medica and Pharmacology. By DAVID M. R. CULBRETH, Ph.G., M.D. Seventh Edition. 1046 pages, 497 illustrations. Lea & Febiger, Philadelphia. \$8.00. This compilation, now in its seventh edition, is familiar to a large number of pharmaceutical workers. Being, as it is, a compilation, it is subject to the errors of its references. Fortunately, however, the author has corrected the majority of outstanding errors so noticeable in previous editions. Some, however, still remain, as for example, the thecaphore of cubeb (page 145) is said to be a stigma remnant, which naturally is impossible, the stigma remnant being upon the opposite end of the fruit. Fairly recent researches have for the most part been recognized in its revision although some, especially those relating to constituents, have been overlooked. Worthy of especial comment is the introduction of a part devoted to non-pharmacopœial organic carbon compounds.

The new edition includes an introduction, six parts and an appendix. The introduction, similar to that of previous editions, concerns itself with definitions and classifications and is well done. The classifications are logical and orderly, simple and understandable giving the student that fundamental knowledge so necessary to an understanding of the subject. Part I is confined to organic drugs from the vegetable kingdom and follows the taxonomical arrangement of Engler with some slight deviations. Only pharmacopœial drugs are discussed to any great length, those of the National Formulary being included with allied non-officials as appenda to the monographs. The monographs on pharmacopœial drugs have,

however, an abundance of facts crowded into them, often at the expense of clarity, due to excessive abbreviation. Parts II, III and IV are concerned with animal drugs, inorganic compounds and organic compounds, respectively. In form, etc., they simulate those of previous editions. Part V is a new addition and includes non-pharmacopœial organic compounds. This addition is a happy one as most writers and, unfortunately, some educators neglect this phase confining themselves to official substances only. Part VI concerns the use of the microscope. It seems to this reviewer that this chapter is somewhat out of place, as the book throughout its text concerns itself only very slightly with histological pharmacognosy. The part itself includes a great deal of unimportant information as to the parts of the microscope, etc. Important information as to pharmacognostical micro and micro-chemical technique is either entirely omitted or so briefly stated as to make its information confusing. The appendix as in previous editions, treats of poisons, their treatment and antidotes, prescription writing and tables.

The title page of this book states it to be designed for students of pharmacy and medicine, as well as for druggists, pharmacists and physicians. There is no doubt that a wealth of information is included between its covers and that the book is, unquestionably, a handy and useful reference volume. As a textbook, however, due to its lack of emphasizing important details it is of questionable value unless used as reference reading accompanying a lecture course. As to its use in medical schools this reviewer has no information but from the viewpoint of its use as a *textbook* for students of pharmacy it seems unsuited for several reasons. Some of these are as follows:

1. Far too much information is included in the monographs. Important details are not stressed and the student is unable to pick out the important items relative to each drug.
2. Only pharmacopœial drugs are stressed, N. F. drugs being placed with other allied non-officials in brief paragraphs at the ends of the monographs or family groups.
3. Habitats are as a rule poorly stated, confusing and fail to give the student any fixed opinion as to the geographical source of the drug. For example, under Coca: "Peru, Bolivia, Ecuador, eastern slopes of the Andes, (Columbia, Brazil, India, Ceylon, Java); cultivated." No doubt most of the coca to-day comes from cultivated plants. Does the state-

ment mean this or does it mean that the drug is cultivated only in the localities in parenthesis?

4. Pharmacopœial definitions are included even to rubrics and ash standards, but no effort is made to separate or emphasize pharmacopœial synonyms from a host of unofficial ones given under each drug.

5. Constituents include a great deal of extraneous and puzzling information. For example, starch, sugar and fat in such drugs as hydrastis and aconite certainly have no therapeutic value, mean nothing and their addition to the list of constituents only causes confusion.

6. Properties and Uses again suffer from a hypersufficiency of information. Undoubtedly vegetable drugs do give several and variable pharmacological reactions but for the student of pharmacy only those of importance should be stated or if all are stated those of importance should be stressed. As it is, often as many as eight or ten are given and the student is at loss to make a selection of the important ones, the multiplicity of terms leaving him confused. Under drugs having their constituents also official the properties and uses of both drug and constituents are given in one paragraph and in some cases the student is unable to differentiate between these reactions.

7. Information relative to preparations and their manufacture is given briefly in the monographs. The student gets all of this information a great deal more completely from his textbooks and courses in pharmacy.

8. Doses are given in "range form." Range doses may be of value to the physician but to teach a pharmacy student range doses is not only confusing and impractical but often dangerous. To him the official dose is important and is the one he should know.

9. Included in the monographs on chemicals are paragraphs as to their manufacture, impurities, tests, etc., which the student certainly obtains more logically and more completely from his courses in chemistry, their presence here only obscuring the specific materia medica information.

10. While many illustrations are given few are of value to the student, as for example those illustrating the botany of the plant. Of what use is a cut of the twig of *Toluifera Balsamum*, (page 304) to the student? In a text of this kind the illustrations which are of value are those impressing upon the student the characteristics of the drug.

The book lays no claim to being a text or

reference book of pharmacognosy and so does not open itself to criticism from a pharmacognostical viewpoint. It is, however, occasionally used as a text in pharmacognosy. What pharmacognostical information is given is wedged in between other information and consists largely of macroscopic drug descriptions and adulterations. Macroscopic descriptions are brief but adequate enough for materia medica. No structure descriptions are given but powders are sometimes described. These descriptions are of doubtful value. Illustrative of this point is the description of powdered rhubarb. Here the size of the starch grain is stated (a relatively unimportant feature) while the size of the calcium oxalate rosettes, (the most important identity characteristic of the powder) is omitted.

It should be noted that the above criticisms are from the viewpoint of the use of this volume as a textbook in Materia Medica for pharmacy students. The book, however, is also designed for other purposes to which these criticisms may not apply so acutely. There is, for example, no question as to its value as a compendium for which its form is excellent and its information complete and concise.

ELMER H. WIRTH.

Annual Survey of American Chemistry. Volume 2, edited by CLARENCE J. WEST, National Research Council. 415 pages, small 8 vo. New York, The Chemical Catalog Company, Inc., 1927. Price \$3.00.

We are taking the liberty of reprinting a review of the foregoing, prepared by Dr. Henry Leffmann and published in the *Journal of the Franklin Institute*.

"It is gratifying to see how wide is the interest in chemical research in this country, and how active it has become. The present work reports American investigations carried out for one year from July 1, 1926. Forty-nine articles have been contributed, covering both theoretical and practical topics. Very thorough use has been made of the periodical literature and as each article has been prepared by an author especially interested, the usefulness of the book is assured. It will be found very serviceable to all chemists.

"The reviewer suggests that in future volumes, the locality of every author should be noted. In many instances in the present issue merely a corporation with which the author is connected is indicated. Some interest is now manifested in the geographical distribution of