

the denaturants used, according to the following formula:

To every 100 gallons of pure ethyl alcohol add 3 ounces, avoirdupois, brucine sulphate, one-half gallon acetone, U. S. P.

The brucine sulphate $[(C_{23}H_{28}N_2O_4)_2 \cdot H_2SO_4 \cdot 7H_2O - (Henry) \text{ dimethoxystrychnine}]$ used

must comply with specifications given in detail in the official communication with regard to physical properties, identification with barium chloride and nitric acid—stannous chloride test and freedom from strychnine.

BOOK NOTICES AND REVIEWS.

The Elements of Vegetable Histology. By C. W. Ballard, Associate Professor of Materia Medica and Director of the Microscopical Laboratory, College of Pharmacy, Columbia University; Microanalyst, Department of Health, City of New York. 246 pp. Price \$3.00. Published by John Wiley & Sons, Inc., 432. Fourth Avenue, New York.

Coming out at this time when more value is being placed on the microscopic examination of foods and drugs, this very excellent book should be heartily welcomed by teachers and those desiring a good foundation in Vegetable Histology.

As stated by the author, the book is intended for the beginner, and as such it places in the hands of the student material on which he may build a real foundation of the subject. Well begun is half done.

The three chapters on the preparation, mounting and staining of specimens are very clear, concise and have much valuable information condensed into twenty-seven pages.

To be a successful microanalyst, one must know well his all-important instrument, the compound microscope. The author has recognized this fact and so has given one chapter to the description of it as well as giving the reader the benefit of his years of practical use of the instrument. It is interesting to note in this chapter the statement that, "contrary to popular opinion, microscopical work is not injurious to the eyes."

The chapters on "The Chemical Reactions of Plant Tissues" and "Cell Contents" give, in a very precise manner, the fundamentals necessary to understand these two subdivisions of the subject. It seems quite helpful to have a brief statement of the function of the tissue accompany the detailed description of it. The tissues are grouped and described in a masterly manner in chapters according to their function such as "Covering Tissues," "Supporting Tissues," "Absorption Tissues," "Conducting Tissues" and "Tissues for Syn-

thesis, Assimilation and Storage."

The structure of each organ of the plant is described fully, comparing such parts as leaf with the floral parts, stem with root and seed with fruit. In all, the statements are brief but comprehensive and full of meaning.

The chapter on "Microscope Accessories" describes such valuable pieces as the micrometer and polarizer. In three pages the polarizing apparatus is described in such a concise way that the student should be able to use this attachment quite successfully.

In the Appendix all formulas necessary in an elementary course of this kind are given and also a good list of reference books for the student who wishes to enlarge his studies. C. J. Z.

PUBLICATIONS RECEIVED.

Proceedings of the Twenty-first Annual Meeting of the American Conference of Pharmaceutical Faculties, held in Washington, D. C. May 5-6, 1920. These proceedings contain, a list of past and present officers, committees, and a number of valuable papers; also the Constitution and By-Laws of the organization. The book has 200 pages.

The Digest of Comments on the Pharmacopoeia of the United States of America and on the National Formulary for the calendar year ending December 31, 1917. Hygienic Laboratory Bulletin 125.

This bulletin is the thirteenth number of the series of Digest of Comments and contains references to all the important literature on the items contained in the U. S. P. and N. F. published during the year 1917.

Comment has been made on prior editions of this valuable digest of comments on the Official Standards, and this issue shows the same care heretofore given. While its usefulness is appreciated most by the revisers of the U. S. P. and N. F., it has value as a reference book in the laboratory and library. The work on this volume, as also on a number of previous numbers, was done by and under the direction of A. G. DuMez.