

and Waxes;" by the same author, "Special Characters and Modes of Examining Fats, Oils and Waxes;" E. R. Bolton, London, England, "Butter Fat;" George A. Reitz, Philadelphia, U. S. A., "Lard;" Glenn W. Pickard, Minneapolis, U. S. A., "Linseed Oil;" H. E. Cox, Newport, England, "Higher Fatty Acids;" Elbert C. Lathrop, Philadelphia, U. S. A., "Soaps;" J. W. Lawrie, Washington, U. S. A., "Glycerin;" Augustus H. Gill, Boston, U. S. A., "Wool Fat, Wool Grease, Suint and Degras;" John Addyman Gardner, London, England, "Sterol Alcohols."

The number of tables has been considerably increased and wherever possible they seem to have been brought up to date. The bibliography has been treated likewise. At the end of the chapter devoted to glycerin is found a very extensive table of physical constants for glycerol and its solutions in water. The bibliography of the 40 sources quoted is listed in each case in tabulated form. This chapter contains 90 pages, an increase of 59 over that in the former edition. Detailed descriptions for all analytical methods are given as well as some very excellent cuts descriptive of necessary apparatus.

The same increase of material is noted in the chapter on soaps. A short résumé might not be out of place in pointing out the thoroughness of the revision. It will also show how valuable and necessary the volume will be for those whose work calls only for occasional examinations and analyses pertaining to soaps. Following upon an introduction treating of "general properties," "commercial varieties of soap and their manufacture," one finds the very comprehensive methods of analyses approved by the special committee of the A. C. S. which include not only the ordinary ingredients and fillers but methods for detection and estimation of such "special" components as borax, hydrocarbons, phenol, sugar, etc. Complete and satisfactory tabulated specifications have also been included.

Many of the great variety of vegetable and animal oils that have found industrial application during recent years have been included in the chapter on oils. The same is true of the fats.

All in all, as stated above, the book should have a place on the shelf of every analytical chemist. It will be a wonderful help to the teacher and student interested in the topics discussed therein.

JEANNOT HOSTMANN.

Stevens Plant Anatomy. 4th Edition. P. Blakiston's Son & Co., Philadelphia, Publishers. Price \$3.50.

To make a textbook both scientifically instructive and yet interestingly readable is not always an easy task. In Stevens "Plant Anatomy" the author has successfully accomplished this. He has taken the extensive material at his disposal and arranged it in an interesting and logical sequence. With a great lucidity of description and with the aid of a large number of excellent drawings and diagrams, the evolution of the various physiological tissue systems from a primitive undifferentiated embryonic tissue is traced.

The first chapter starting with a treatment of the plant cell as structural unit is followed by chapters with the following headings: Differentiation of the Tissues, Secondary Increase in Thickness, Protection from Injury and Loss of Water, The Plant Skeleton, The Absorption of Water and Minerals, Transport of Water and Soil Solutes, Intake and Distribution of Gases, Construction of the Plant's Food, Transport of Food, Storage of Food and Water, Secretion and Excretion, and Reproduction. At the end of each chapter suggested illustrative studies, bearing on the material covered, are given.

Those mooted questions of botany, the solution of which have been arrived at or approached, such as the genesis of the plastids, the constitution of chlorophyll, the structure of the cell wall, the construction of nitrogenous foods, the ascent of water and the operation of the stomata, are given due consideration in the present revision.

That portion of the book dealing with microtechnic has been added to and modified particularly in the chapters on the Preparation of sections, Plant Products and Reagents and Processes.

The index is exceptionally complete.

M. DITTMAR.

Poultry Diseases. How to Prevent or Cure Them. By Henry Gray, M.R.C.V.S. 138 pp. The Bazaar, Exchange & Mart. London. 2s.

During recent years there has been no authoritative work on this subject, either in the United States or Great Britain, and for that reason the book is welcome. It is not intended to be an exhaustive treatise on diseases of poultry but to act as a guide to those looking for reliable information. Most of the facts given are drawn from results of nearly forty

years of scientific and practical study on poultry diseases by the author. The book is divided into Poultry Diseases, Drugs and their Uses, Weights and Measures, and a Glossary.

Pharmacists in the United States especially in the suburbs and country are frequently called upon for information on this subject and for that purpose the book is a reliable mentor.

Ferdinand Enke, Stuttgart, the well-known German publisher of pharmaceutical, chemical, physical, technical and other scientific works, favored us with the following books for review:

Bernhard Fischer's *Lehrbuch der Chemie fuer Pharmazeuten*. Von Dr. Georg Frerichs, Professor der pharmazeutischen Chemie an der Universität Bonn. S. neubearbeitete Auflage mit 81 Textabbildungen. Lex. Octavo. 886 pp. M. 28.50.

Bernhard Fischer, a student of Kekule, Wallach and Clausius at the University of Bonn and then pharmacist, chemist, teacher, editor and author with a world-wide reputation, published the first edition of this book in 1889. Beginning with the sixth edition in 1909 another authority, Dr. Georg Frerichs, professor of Pharmaceutical Chemistry at the University of Bonn, continued the work which is now in its eighth edition.

This is a real book on pharmaceutical chemistry for both students and pharmacists. It contains that part of chemistry which a pharmacist should, and in Germany, must know to become an apotheker and practice pharmacy. The first part of the work, 50 pages, is devoted to general chemistry. The second section of 320 pages deals with inorganic chemistry, divided as usual into non-metals and metals. The monographs are short and concise, giving occurrence, preparation, properties, tests and uses. The Latin names are quoted and special stress is laid upon German Pharmacopoeia chemicals. The third part of 370 pages comprises organic chemistry divided into aliphatic, carbocyclic and heterocyclic compounds. How thorough the book is, can be seen from the fact that 30 pages alone are devoted to alkaloids, the knowledge of which is so important to the pharmacist. Volatile oils, resins, balsams, glucosides, coloring substances, albumins, enzymes, etc., also receive proper attention. Part IV consists of an excellent section on volumetric analysis of 86 pages, an important subject to the pharmaceutical chemist. Part V is

devoted to stoichiometry and contains 30 typical examples in questions and answers. Part VI consists of physical analytical methods such as melting, freezing and boiling points, specific gravity and polarimetry. A quite unusually detailed and complete index of 21 pages in 3 columns concludes this excellent "Pharmaceutical Chemistry" which we can highly recommend to pharmacists, teachers and students.

Der Nachweis Organischer Verbindungen. Ausgewaehlte Reaktionen und Verfahren. Von Dr. L. Rosenthaler. Professor an der Universität Bern. 2 vermehrte und verbesserte Auflage. Lex. Octavo. 1028 pp. M. 39.60.

The prolific author and contributor to pharmaceutical literature, whose "Pharmaceutical Analysis" we had the pleasure to review in the JOURNAL, May 1923, 474, has created a masterwork in the volume before us which is now in its second edition, the first one being published in 1914.

The introduction gives a description of microchemical methods and the detection of elementary substances. The 33 chapters of the work deal with: Hydrocarbons, Alcohols, Aldehydes, Ketones, Carbohydrates, Phenols, Acids, Oxyacids, etc., Ethers, Quinones, Esters, Halogen Derivatives, Nitro Derivations, Nitrils and Isonitrils, Amides, Amines, Acid Derivatives, Heterocyclic Bases, Amino Acids, Organic Sulphur Compounds, Arsenic, Antimony, Mercury and Gold Compounds, Alkaloids, Resins, Tannins, Glucosides, Bitter Principles, Coloring Matter, Albumins, Enzymes and Toxalbumins. How fully the different chapters are prepared can be seen from the number of pages devoted to each, for instance: Alcohols 63, Phenols 33, Esters 39, Carbohydrates 60, Alkaloids 117, Glucosides 33, etc. How thoroughly the subject is treated can be appreciated if we take the chapter on Alcohols as an example: Color, Reactions, Separation from the Compounds, Detection of Primary and other Alcohols, Separation, Detection of Methyl Alcohol which alone occupies 8 pages, etc.

Truly a masterwork, containing a mint of information! The book also contains many valuable Tables of Constants, Melting Points of Solids and Boiling Points of Liquids, arranged systematically according to temperature. It is a valuable work of reference for both pharmaceutical and analytical chemists.

OTTO RAUBENHEIMER, PH.M.