

## BOOK NOTICES AND REVIEWS.

*Bacteriology and Sanitary Science.* For students in Pharmacy, Chemistry and Allied Sciences. By LOUIS GERSHENFELD, Ph.M., B.Sc., P.D., Professor of Bacteriology and Hygiene in the Philadelphia College of Pharmacy and Science. Octavo. xv, 432 pages, 20 engr. and 2 pl. Lea and Febiger, Phila. Price \$4.00.

This new book has been written by Professor Gershenfeld to meet the needs in Bacteriology and Sanitary Science of students and workers in pharmacy, chemistry and nursing. Its scope is unique in that the closely related subjects of bacteriology, immunology, parasitology, sanitary science and biological products are treated in one volume from the viewpoint of a pharmacist.

The subject matter of this work is arranged in 4 parts, an appendix and an index. Part I, entitled Bacteriology, includes the following chapters: General characteristics, activities and classification of bacteria, apparatus and methods of studying bacteria, stains and staining, culture media, reaction and storage of culture media, culture technique, Bergey classification, commonly observed pathogenic and non-pathogenic bacteria, destruction of bacteria, disinfection, fumigation, the higher bacteria, fungi and useful bacteria.

Part II treats of Animal Parasitology. It includes chapters on parasitic protozoa, metazoa, arthropods, snakes, rodents and higher animals, insect extermination and insecticides.

Part III deals with Immunology and contains chapters on infection, immunity, hypersensitiveness and allergy, antitoxins, antibacterial sera and serum products, antigens used as therapeutic and immunizing agents, biologic tests as aids in diagnosis, allergic skin tests and allergens.

Part IV is entitled Sanitary Science. It contains chapters on atmospheric conditions, ventilation and heating, disposal of waste, sewage, etc., water and water purification, milk and other foods.

The Appendix contains information on diseases of unknown, doubtful or indefinitely determined causes and a page of brief comment on plant diseases.

The author has succeeded remarkably well in presenting the vast array of subjects treated in the text in a clear and interesting style. While a work of this type is necessarily technical, he has skillfully avoided the use of a superfluous number of technical terms. The proportionate

space given to the various parts of his discussion is well balanced and in keeping with the stated purpose of the work in the preface.

The pharmacist is being called upon constantly by the laity to answer questions concerning sterilization, disinfection, fumigation, disinfectants, deodorants and general questions on sanitation. As the handmaiden of the physician, he should be prepared to furnish staining solutions, culture media and biological products and have a correct understanding of their manufacture and use. He should be able to converse intelligently upon all of these topics alike with physicians, health authorities and the laity. The essential information for effectively performing all of these duties is to be found in Prof. Gershenfeld's work.

A careful study of the volume shows that the author reflects a live touch with the present-day requirements of the professional pharmacist and chemist in the fields of bacteriology and sanitary science.

No American work on either bacteriology or sanitary science has heretofore been written which is more applicable to the practical needs of the pharmacist in these fields than this treatise. It will undoubtedly be generally welcomed by pharmacists, chemists, nurses and students of applied bacteriology and sanitation.—HEBER W. YOUNGKEN.

*Qualitative Analysis for Students of Pharmacy and Medicine.* By CHARLES B. JORDAN, Ph.C., M.S., Dean of School of Pharmacy and Professor of Pharmaceutical Chemistry, Purdue University, Lafayette, Indiana. First edition, viii + 169 pages, \$2.50. Publishers, McGraw-Hill Book Company, Inc., New York, October 1928.

Before one can intelligently consider a book of this kind he must have a definite understanding as to what is meant by "Qualitative Analysis" and particularly what is meant by Qualitative Analysis for Students of Pharmacy and Medicine. If "Qualitative Analysis" is limited to the usual examination of substances for metals and acid radicals and in addition the usual so-called group separation of metals, the title of this book is appropriate. If Qualitative Analysis for Students of Pharmacy and Medicine is identical with this the complete title is appropriate. In the writer's opinion Qualitative Analysis for Students of Pharmacy and Medicine is quite a different thing. Professor Jordan's book is "Qualita-

tive Analysis," pure and simple, but it is well done and presented in good form. Part One contains a discussion of some of the very valuable theories such as an ionization, mass action, solubility product, electron theory, valence, oxidation, reduction, etc. These definitions and discussions are very brief but are to the point and the entire part is a valuable introduction to the rest of the book. Some of the definitions approach closely the "cut and dried" order, for example that of a reagent on page 4 which is: "The substance which causes a reaction is called the reagent." It always takes two substances to bring about a reaction and it would appear difficult to tell, on this basis alone, which one of the two is the reagent. The table on page 9 is especially unfortunate in that such a large number of substances are grouped together and given a single ionization value which certainly does not apply to them all. It is very obvious that the figures in this table are intended to be approximate only, but it would have been better to include a more complete table giving exact values for these different acids, bases and salts.

Part Two is devoted to metal analysis and is the same order of treatment that is given in practically every book on so-called "Qualitative Analysis." As an example of the method of treatment typical reactions of the metals of Group One are given, followed by the usual scheme of separation and identification of the metals of the group. This is then followed by a series of questions called a review of the group. Immediately following the separation of the metals is a list of the salts and preparations recognized in the U. S. P. X and N. F. V. This plan is followed out consistently in connection with the other groups of metals, such as the hydrogen sulphide group, the ammonium sulphide group, ammonium carbonate group, sodium phosphate and soluble group. To those who like this treatment of the subject this book can be recommended. Throughout this entire part the writer has searched in vain for what he would call Qualitative Analysis for Students of Pharmacy and Medicine. The mere listing of the preparations of the U. S. P. and N. F. does not make the text Pharmaceutical Qualitative Analysis. In fact, there is danger that these lists will do more harm than good since the impression might be gotten that one could, for example, detect lead in lead oleate and lead plaster according to the scheme outlined for the analysis of Group One; or silver in

the silver-protein compounds according to this scheme of analysis; or iron in iron-scale salts. Numerous other examples similar to the above could be given. It seems to the writer that Pharmaceutical Qualitative Analysis should enable the student of pharmacy to handle such cases as the above.

If this work is entirely pharmaceutical or medical in character the writer believes that it would also be better to simplify the scheme for metal separation by omitting tin, cadmium, cobalt and nickel, no salts or preparations of which are described either in the U. S. P. or N. F. Gold which is used in medicine to a much greater extent than any of the above is not included in the scheme.

The list of questions, or review, which follows each group, contains many questions which are calculated to bring out the student's ability to think and apply what he learns from the text. Many of the questions are more pharmaceutical in character than they are chemical, however.

Part Three is a scheme of analysis for the identification of the acid radicals. These acid radicals are divided into eight groups, and the scheme which the author has adopted seems to be as good as any that has been proposed. Throughout this part again appears lists of the preparations of the U. S. P. and N. F. The scheme of analysis does not, however, include directions for the detection of iodine in the U. S. P. ointment; or iodide in decolorized tincture of iodine; or boric acid in ointment of borax; or salicylic acid in methyl salicylate; or citrate in iron and ammonium citrate; and numerous other examples which in the writer's opinion are strictly speaking Pharmaceutical Qualitative Analysis.

For those who are searching for a book on the usual Qualitative Analysis which is concise, well organized, and contains a minimum amount of theory to be of real value, this book can be recommended. It is well gotten up, well printed, well bound, and contains very few errors, the only ones noted by the writer appearing on page 105 in which the word slaked is misspelled, and an incorrect formula for calcium hydroxide is given.—A. H. CLARK.

*Ein Lehrbuch für Ärzte, Medizinalbeamte und Medizinstudierende. Toxikologie, Ein Lehrbuch für Ärzte, Medizinalbeamte und Medizinstudierende*, by DR. E. STARKENSTEIN, DR. E. ROST AND DR. J. POHL; Urban & Schwarzen-

berg, Berlin and Vienna, 1929; unbound, 24 marks; bound, 26.50 marks.

This latest text, or reference book, on toxicology, comprising a volume of some 531 pages, possesses certain features of especial interest and value. In the first place, it is "a textbook for physicians, health officers and students of medicine," by three of the most prominent pharmacologists of Central Europe. These are E. Starkenstein, professor of pharmacology and pharmacognosy in the German University of Prague, E. Rost, professor of pharmacology at the University of Berlin and J. Pohl, professor of pharmacology in the University of Breslau. The names of these three well-known scientists are a guarantee that the book before us is reliable and worthy of perusal. In the second place, the present textbook on toxicology, while comprising a volume of not too great proportions, is exceptionally rich in literary references, including some of the most recent ones. This feature always renders a scientific handbook very much more useful for the serious-minded specialist in any branch of science. In the third place, the book before us contains an unusual number of rich and striking illustrations, certainly in greater profusion than any other textbook of its size that we have seen in recent years. Here we find some twenty-four beautifully colored plates, depicting various pathological conditions encountered by the toxicologist during a period of active practice extending over many years. These plates should be of particular value to the uninitiated student and even the practicing physician, who is not familiar with toxicology. While some of the plates depict pathological specimens described in other textbooks, many of the plates are not only original but unique in their beauty from the standpoint of medical art. Among the most interesting of these are the pictures illustrating phosphorus poisoning, a condition comparatively rarely met with in the United States, poisoning with glacial acetic acid, bichloride of mercury, phenol and others. In addition to these plates, the book contains some thirty-four other interesting cuts and illustrations.

A fourth invaluable feature of the present work is a profusion of all kinds of tables for rapid reference concerning cases of poisoning. Thus we have ten pages of tables compiled by Professor Starkenstein, which contain an index of clinical symptoms and circumstances occurring after various toxicological conditions.

This handy reference table should prove invaluable to the practitioner of medicine in orienting himself concerning emergency cases, which he is almost bound to meet at some time or other. Another extensive table, comprising six pages, gives an index of pathological anatomical findings discovered in various poison cases. Such a table should be of special interest to the general pathologist regarding post mortem examination in medico-legal cases. There are other tables of more direct interest to the specialist in pharmacology and toxicology. These contain, for instance, lists of poison gases and fumes and their relative toxicity and a long list of occupational poisons, classified according to different industries and trades, tables describing the sources, principal properties and toxicity of various alkaloids and glucosides, a long table giving the botanical classification of poisonous plants, tables indicating the principal sources of intoxication through foods, a table exhibiting the most common toxicological agents employed in homicide and suicide and, last but not least, an excellent reference table concerning a large number of poisonous dyes, giving their chemical constitution, common names and more important physical and chemical properties.

The text proper is logically divided into two divisions, designated as *General Toxicology* and *Special Toxicology*. Under *General Toxicology*, by Professor Starkenstein, poisons are defined and various conditions bringing about a toxicological action of drugs and chemicals are more or less discussed. Another chapter gives a subdivision of various poisons from several points of view—acute and chronic, exogenous and endogenous, local and constitutional, etc., etc. Another chapter is devoted to the discussion of general symptoms and diagnosis of poisoning. Still another chapter deals with prophylactic measures of special interest to the health officer and specialist in preventive medicine. Several chapters are devoted to a general discussion of the therapeutics, or treatment, of poison cases. There is also a chapter on the legal aspects of poisoning, including valuable statistics and, finally, a comprehensive bibliography is appended to this part of the book.

Under *Special Toxicology*, a subdivision is made of chemicals, drugs or poisons with primarily *local* effects, including acids, alkalis, toxic salts, poison gases, irritating oils, resins, etc., while a larger section deals with the

*constitutional* effects of various poisons after absorption by the body. Here all the common and many of the uncommon poisons are discussed in sufficient detail for the purposes required by the general practitioner and student of medicine. Professor Rost contributes a most interesting discussion of ethereal oils, saponins, irritating plants, and a discussion of animal poisons, which is known to be one of his specialties. Professor Rost also describes poisonous fungi, poisons of the anthracene, phenanthrene, pyridin, quinolin and acridin series, and the whole subject of alkaloids and glucosides, comprising nearly one hundred pages. Professor Pohl has written an especially interesting account of some of the aliphatic organic compounds and chemical and therapeutic agents of the benzyl and naphthalin series and a description of organic arsenicals. Professor Starkenstein, in addition to writing the entire general portion of the book, is also responsible for a description of other kinds of poisons, including those acting locally, acids, alkaloids, metallic poisons (including mercury), phosphorus, blood poisons, etc.

In reviewing the work, one cannot help giving credit to the authors for their excellent judgment in selecting literary citations, or references, and in this work, American scientists have certainly no reason for complaints in regard to omission or lack of appreciation of their work. Altogether, the book is one of the best single-volume texts on toxicology that we have had the pleasure of reviewing.—  
D. I. MACHT.

Dr. Charles E. de M. Sajous, well and favorably known for his research in endocrinology, died at his home in Philadelphia, April 27th,

aged 76 years. He was an author of "Sajous' Cyclopedia of Practical Medicine," and several volumes on the subject of which he was considered a leading authority—the ductless glands and their influences in the human body.

#### U. S. P. BOARD OF TRUSTEES PROVIDES RESEARCH FUND.

The Board of Trustees of the United States Pharmacopœia approved of a recommendation to set aside a fund of \$20,000 for pharmaceutical research as a memorial to Prof. Joseph P. Remington, former Chairman.

E. Fullerton Cook, Chairman of the Revision Committee, presented his report, devoted largely to research matters. In addition to the organizations named elsewhere in this issue of the JOURNAL, recommendations were adopted to include as entitled to representation in the Convention—The American Pharmaceutical Manufacturers' Association and Cuba. The latter recognition is given because of the translation of the U. S. P. into Spanish by the University of Habana, and adopted as official in Cuba.

#### SCIENTIFIC SECTION OF THE PROPRIETARY ASSOCIATION.

The scientific section of the Proprietary Association met at the Chemists' Club, New York City, on the evening of May 7th, with an attendance of thirty-six members. Many interesting and helpful questions were covered during the course of the meeting. The officers of the section are: Philip I. Heuisler, Baltimore, *Chairman*; Dr. E. C. Merrill, Boston, *Vice-Chairman*; Dr. Charles E. Caspari, St. Louis, *Second Vice-Chairman*; E. F. Kemp, Washington, *Secretary*.



The Hanbury Medal presented to Prof. John Maisch, 1893.