

## BOOK NOTICES AND REVIEWS.

*Quantitative Analysis* by Stephen Popoff, Ph.D., 2nd Edition. Published by P. Blakiston's Son & Co., Philadelphia.

The title, "Quantitative Analysis," is somewhat misleading since this work is devoted chiefly to theoretic problems. Perhaps the title "Theoretic Quantitative Analysis" would be more indicative.

The chemist, in practice, must depend largely on titles, while watching for new books, therefore it is advisable to make them as broad as possible.

Even though I were to send for this book, expecting a compilation of new methods, I would never have been "stung," for Dr. Popoff has given us something we all need, and badly at that.

The sub-title clears up all this as follows: "Theory and Practice of Modern Analytical Chemistry with Problems and Explanations of Calculations."

This work is adapted to the wants of the advanced student of Chemistry, more especially the modern Research Chemist, owing to its bearings on the latest advanced theories of physical and analytic chemistry.

Part I is devoted to the Analytic Balance, its latest refinements and mechanics—Calibration of Weights—Calibration of Volumetric Apparatus, Corrections, Special Features of Apparatus and Materials—Standardization of Acidic and Basic V. S.—Indicators. This latter subject, while treated in a thorough manner, is split into two widely separated sections. Filter Papers, Evaporation, Handling of Precipitates, Reagents and Blanks, Nitrogen Determinations, Determinations of Chlorine, Iron, Brass, Limestone, Rocks, Sodium and Potassium, etc., Oxidation and Reduction Analyses are excellent examples of the author's thorough work.

*Part II.*—Here the author introduces a valuable subject well worth the study of every commercial chemist, namely Errors and Computation Rules, so frequently overlooked in the haste of daily routine work. Another useful chapter embraces Fundamental Conceptions in Chemical Calculations, Errors and Computation Rules, Calculations in Neutralization, Oxidation and Precipitation Reactions, Precipitation Factors, Indirect Analysis and Problems involving Specific Gravity and Percentage.

*Part III.*—Theory of Analytic Chemistry.

A most important subject, frequently treated in a superficial manner in many of our treatises as well as institutions turning out analysts. It seems to me that to-day we put too much stress on rapid approximate methods and ignoring precautions for accuracy. Dr. Popoff is to be congratulated on his lucid and thorough presentation of this most essential feature. Prominent among these chapters are: Precipitation Reactions, Fractional Precipitations, Special Aspects of Ionization, Solutions, Gases, Neutralization Reactions, Law of Chemical Equilibrium, Oxidation and Reduction, Conditions Leading to Nearly Complete Reactions, etc.

*Part IV.*—Electrometric Titrations—Conductometric Methods. Iron and Steel Analyses. An Appendix of Useful Data. The index, while ample for one familiar with the work, might be enlarged through the use of more cross references. Authors should remember that users who are unfamiliar with the book, handle subjects from a totally different angle. This work shows great care in all details, nothing too minute to be overlooked in order to insure the highest degree of accuracy. The cross references are excellent with frequent citations to original articles in the *Journal of the American Chemical Society*.

After each chapter, the author adds a series of examples and problems which afford excellent drill for the student.

The cuts represent clear, clean line drawings; it is a pleasure to get away from the old cuts so common in our older works.

The headings and sub-headings and type work are most excellent. Nothing like systematic clean cut press work which reflects much to the credit of the publisher.

VIRGIL COBLENTZ.

*Palladin's Plant Physiology.* Authorized Edition in English. Based on the German Translation of the Sixth Russian Edition and on the Seventh Russian Edition (1914) of the Text-Book of Plant Physiology by the late Vladimir I. Palladin, Professor in the University of Leningrad. With Additions and Editorial Notes by Burton Edward Livingston, Ph.D., Professor of Plant Physiology and Director of the Laboratory of Plant Physiology of the Johns Hopkins University, Permanent Secretary of the American Association for the Advancement of Science. Third

American Edition. With a biographic note, chapter summaries and other additions by the Editor. 174 illustrations. P. Blakiston's Son & Co., Philadelphia, 1926.

How highly this textbook is appreciated by American plant physiologists is seen in the appearance of this 3rd edition following so soon the 2nd edition. Four years is a remarkably short time for the appearance of two editions of a textbook. The third edition in general is the same as the second. It contains the same number of parts, each part has the same number of chapters, and the sequence followed in their presentation is that followed in the second edition. It is in the editorial notes and additions that improvements are noted. And the classified list of books for reference in plant physiology has been brought up-to-date. As stated above, the number of chapters is the same as in the second edition. The number of paragraphs under each chapter is the same as in the second edition with the exception of the number under Chapter IV, which has now seven paragraphs instead of six. The caption of the additional paragraph is "Oxygen absorption from the soil." The technique connected with this important problem was worked out in Dr. Livingston's laboratory. The number of text figures in the new edition has been increased by one, the new one being Fig. 84 a, a diagram of arrangement for demonstrating liquid tension by the general method of Askenasy. Little need be added here as to the value and the importance of this work, that it has been translated into German, into French, into English and now three editions of the American edition, speaks for itself. Pharmacy students do little and know little of the work outlined in this textbook, the more the pity. It is to be hoped that the time will come when the botanical side of the educational equipment of our students will receive more attention, even to the same extent as is now given the chemical side. Palladin approaches the subject from the point of view of a student of physiological chemistry, and it is the chemical side of plant physiology that is emphasized.

CHARLES C. PLITT.

*The Romance of the Atom.* By Benjamin Harrow. 157 pages. Boni & Liverright, New York, 1927. Price \$1.50.

Dr. Edgar F. Smith states in a review of the book that "Whoever reads this little book, upon laying it down, will declare its perusal

was worthwhile and most gratifying. In simple language he has been led quietly along the trail of a most profound subject and will be grateful for it. Complexities have been unfolded before him. The meaning of the atom has been made more real to him. Indeed, all interested in science must surely experience some such an impression after reading Dr. Harrow's enlightening exposition.

"And yet, the reviewer wishes the booklet had closed with Chapter XI. The tribute to Irving Langmuir, master chemist, is splendid and is merited."

There are chapters in the book on the dawn of chemistry, and on the evolution of alchemy into a science; on the function of science in modern life; on science and the origins of life; on the application of the scientific discoveries; on the scientist as a citizen. We are somewhat surprised to find that Scheele is not mentioned in the book. The last paragraph of the opening chapter dealing with transmutation of elements is quoted.

"That the heavier elements are complexes of two or more lighter elements and that the transmutation of metals is distinctly within the realm of possibility, are statements which no scientist of to-day questions. Ignoring the somewhat questionable transmutation experiment of Sir William Ramsay, no one hesitates to accept the recent work of Sir Ernest Rutherford on the transmutation of nitrogen into hydrogen, by subjecting the former to a violent bombardment of rays obtained from radium. And has not Miethe within the last year or two claimed to have transformed mercury into gold? At any rate, if nitrogen can be changed into hydrogen, why should it not be possible, sooner or later, to change one of the 'base' metals into gold?"

The book contains a number of diagram illustrations and fifteen half-tone plates. E. G. E.

Possibilities in the use of ultraviolet rays for testing various foodstuffs have been pointed out by German health scientists who recently conducted such tests with adulterated foods, the U. S. Consul at Frankfort-on-Main H. C. Claiborne, reports to the Department of Commerce. The tests were performed by the health authorities of Frankfort.

The director of the "Institut für gerichtl. Chemie und Mickroskopie," in announcing the results of numerous tests made in his laboratory by means of the quartz lamp, directed attention to the possibilities of violet rays in this important field of scientific research.