presentation are original and unique, and the book meets the pressing demand for a text on physiology specially suited to the needs of the student of pharmacy.

The volume is richly illustrated by 178 excellent and suitable illustrations, many of which are in colors. Quite a number of the illustrations are original. There are 322 pages, and the page size ($6^1/_2 \times 10^1/_4$) adopted by the publishers has enabled the authors to use their illustrations to best advantage. An exceptionally good index, one of the most important parts of any text, completes this splendid volume. This book by Doctors Bachmann and Bliss is one of the most noteworthy contributions to pharmaceutical literature, and those interested in the teaching of physiology to pharmacy students will find it an ideal and invaluable guide. A. B. LEMON.

Urine Examination. By Florin J. Amrhein, Ph.G., Ph.C., Assistant Professor of Chemistry at the Massachusetts College of Pharmacy. Price, $2.00.

The subject of this review was undertaken, as the author informs us, to arrange a Manual, which will supply the necessary laboratory work in a course of instruction, given at the Massachusetts College of Pharmacy. Though we are also informed that this work is not intended as a complete treatise or textbook on the subject, one cannot help but feel that if the author had added a few extra chapters, the finished product would go far toward increasing the value of this work; for, as it is, it is more than a manual.

The work is well planned, and with a few minor exceptions is well executed. The systematic arrangement is excellent. The text is clear.

Immediately after an interesting introduction, the last five lines of which should be in italics, so as to give it the emphasis it deserves, there follows Part I. Here the author impresses one with the important general principles, as Method of Collection, Preservation, Constituents, and Physical Characteristics of the Urine. No mention is made of toluene, a urinary preservative, most frequently used in many quarters. It seems inadvisable to regard as the author suggests, on page 35, that the terms "Neutral" and "Amphoteric," for practical purposes, are synonymous. It would be better practice to give a detailed method for obtaining the Total Solids, if this is required, than to depend upon the use of the so-called Coefficients.

In Part II, there is found a review of the chemical characteristics of the normal constituents of urine, followed by Part III, in which there is considered the chemical characteristics of the abnormal constituents of the urine. In Part III no mention is made of Roberts' Test, which is widely used and more satisfactory as a test for albumin than is Heller's Test. It is also impossible to see how the author accounts for the statement that the gravimetric method for the quantitative estimation of albumin is too complicated. Surely it is not as complicated as the quantitative determinations of some of the other urinary constituents. It would be well to have Scherer's Coagulation Method included. No mention is made of urorosein and urobilin, two pigments, at least one of which is tested for routinely by some. It seems advisable that mention should have been made of Ehrlich's Diazo Reaction and some of the Kidney Efficiency Tests, as the practical worker should be familiar with these.

Part IV contains a detailed description of the constituents of the urine as found when examined microscopically. The last chapter in this section, which contains an interesting description of the colorimeter, seems out of place in this work. It should be excluded or, if it is to remain, there should be added the important colorimetric determinations of the constituents of the urine.

Part V and VI contain condensed laboratory directions for the chemical examination of the urine together with the formulas for the many Test Solutions and Reagents.

On the whole, this will prove a useful guide for the pharmacy student and especially to those whose education in urinalysis was very limited. The user of this book will not fail to have a fair basic knowledge and a clear understanding of the subject.

LOUIS GERSHENFELD.

The German publisher Georg Thieme in Leipzig, well known in pharmaceutical and medical circles the world over, sent us the two following works for review:

Gesammelte Abhandlungen. Band II. Abteilung I: Untersuchungen uber Hydrochinone and Chione. Abteilung II: Untersuchungen über Azine und Azoniumverbindungen. Von Dr. F. Kehrmann. Mit 2 Abbildungen. Lex. 599 pp.

The author, who occupies a chair at the University of Lausanne, together with his associates, assistants and students, have rendered an excellent service by the publication

of a collection of their valuable papers in book form. Vol. I published somewhat over a year ago deals with "Complex Inorganic Acids." Volume II, now before us, contains the researches on Hydroquinones and Derivatives which were begun under the author's teacher, Prof. Dr. Rudolf Nietzki.

That science is international is again demonstrated by the fact that one of the valuable papers on pp. 172–178 is written and published in French: "Sur les dérivés nitrés de l'hydroquinone."

What a mint of information is in this book can be seen from the Table of Contents which fills three and a half pages, the Author's Index which occupies the same space and the Subject Index which occupies five double-column pages. The many bibliographic references further enhance the value of this book.

Kurzes Lehrbuch der Chemie in Natur und Wirtschaft. Von Prof. Carl Oppenheimer, Dr. phil. et med. Berlin. Nebst einer Einführung in die Allgemeine Chemie. Von Prof. Johann Matula in Wien. Lex. 862 pp. Cloth $6.55.

The author is a well-known authority, having written several books on chemistry and biology. It was his aim to produce a real textbook on practical chemistry, useful to students, pharmacists, physicians, chemists, biologists and also to the laity. In the opinion of the referee he has succeeded, although the so-called "Brief Text-Book" forms a stately volume of 862 pages in Lexicon format.

Part I consists of 258 pages and deals with general chemistry and has been written by Professor Johann Matula in Vienna. Its division is excellent as can be seen from the following chapter headings: Elements, Atoms and Molecules; State of Aggregation; Constitution; Reactions; Chemical Energy. In this part the physical and chemical laws, the periodic system, radioactivity, crystallography, solutions, colloids, valence including Kossel's Theory, optical rotation, mass reaction, catalysis, status wascendi, absorption and adsorption, thermochemistry, electrochemistry and photochemistry are thoroughly explained. This ordinarily dry subject of general chemistry is interestingly written, accompanied by explanations which are strikingly clear and simple and up to date.

Part II consists of 325 pages and is devoted to inorganic chemistry and is as usual subdivided into Non-Metals and Metals. How thoroughly this subject is treated can be seen from the chapter on Phosphorus which contains: history, occurrence, physical and chemical properties, manufacture, technical uses, matches, tests and detection, physiology, pharmacology, P and H, P and halogens, P and O, hypophosphorus, phosphorous and phosphoric acids, chemical properties, manufacture, physiology, pyro and meta phosphoric acids, P and S and N. The addition of the paragraphs on history, physiology and pharmacology of the elements and their compounds is a step in the right direction which will help to make the book interesting and popular.

Part III comprises 483 pages and deals with organic chemistry. The general chemistry of this part contains an excellent chapter, "Relation between Constitution and Properties," pp. 406–422. How interesting and how instructive this chapter is can be seen from the following subdivisions: crystalline structure, specific gravity, solubility, melting point, boiling point, optical properties (rotation and refraction), color, calorimetry, structure, and pharmacological action. The information in this chapter is worth the price of the book.

The Acyclic Compounds are subdivided into Nitrogen-free, Nitrogen Compounds and Carbohydrates. The Cyclic Compounds are subdivided into Carbocyclic and Hetrocyclic Compounds. The last part of the book is devoted to "Biocolloids containing Nitrogen" and deals with Proteins (chemistry and uses, including albumins, globulins, proteids, etc.), Ferments (chemistry and action) and Antigens and Antibodies.

The Index of this master work is quite unusually detailed and complete, as the subject index comprises 40 and the authors' index 6 pages of 3 columns each. The book is well printed on good paper with but few typographical errors. A careful study of the work discloses the fact that the author is extremely well acquainted with the subject and has therefore given the world an exceptionally good book. The addition of paragraphs on the history, pharmacology and physiology is of special advantage. Many teachers will find in this book simplifications of pedagogical methods which will be helpful. Students of chemistry and pharmacy will be pleased with the concise but explicit explanations. Chemists, physicians and pharmacists can use the work to good advantage as a text and reference book. The work is indeed a real contribution to the field of science and should also become known on this side of the Atlantic.

OTTO RAUBENHEIMER, PH.M.