

result that the blood of the young rabbit gave no test while that of the older gave an exceedingly strong test. Like results were obtained with the blood of a young and an old horse, the connective tissue of the horse being used.

Much speculation and many theories may be evolved to explain the significance of this ferment. But until it is isolated and its specific properties examined—work on which I am now engaged—nothing exact can be stated. Its connection with the fibrin ferment is doubtful, in that the coagulative power is greater in young and strong people than in people of older age—and since the coagulation is directly due to the fibrin ferment we see that this is in direct opposition to the action of the ferment.

Its presence may be due to the leucocytes and I have found that causing leucocytes in rabbits the blood gives stronger tests, but I have not yet determined the relative positivity of tests on young and old rabbits with leucocytes.

From my numerous experiments with the blood of human beings and animals I have found that there is a ferment in the blood shown by the ninhydrin reaction which is in direct quantitative relation to the age and habits of individuals.

Finally the test for this ferment is particularly interesting as a diagnosis of old age.

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NEW BOOKS.

A Laboratory Manual for the Detection of Poisons and Powerful Drugs. By WILHELM AUTENRIETH. Authorized translation of the completely revised fourth German edition, by William H. Warren. Philadelphia: P. Blakiston's Son & Co. 320 pp., 25 illus. Price, \$2.00.

This well-known book comes to us in its fourth edition, entirely revised. The subject is divided into seven chapters, and there had been considerable rearrangement of the material. After discussing poisons volatile with steam, organic poisons, and metallic poisons, the author includes in Chap. IV, a number of substances, which seldom appear in toxicological investigations, but which have much theoretical importance. Such substances as cantharidin, ergot, santonin, sulfonal, saponin substances, and the toxalbumins have become of sufficient importance to warrant a discussion here.

Special methods of analysis both qualitative and quantitative, such as methods for the determination of arsenic and antimony, salicylic acid, and special alkaloids are discussed in the next chapter. The translator has here added the Gutzeit method for the detection of arsenic and antimony, as worked out in detail by Professor Sanger. Chapter VI will prove of special interest to Pharmacists and manufacturing chemists, as it contains a very satisfactory résumé of the methods in use for the quanti-

tative estimation of alkaloids and other powerful substances in raw materials. Since the toxicologist is often called upon to examine blood stains, the remaining chapter is devoted to this subject.

One valuable feature of the work for advanced students is the brief description of the synthesis of such organic drugs as acetanilide, anti-pyrine, phenacetine, pyramidone, salicylic acid, sulfonal, and veronal; substances that are continually coming into more common use.

It is suggested that in a future edition a more complete and detailed index would add to the value of the work. A student of medicine and toxicology will find this book an exceedingly valuable addition to his library.

E. H. S. BAILEY.

Kurzes Lehrbuch der Organischen Chemie. By A. BERNTHSEN, with A. DARAPSKY. 12 editions. Braunschweig: Friedrich Vieweg and Sohn, 1914. Pp. xix + 672. 8°. Price, unbound, M. 12; bound, M. 13.

The present volume forms the twelfth edition of this well-known and widely used text-book; the first edition appeared twenty-seven years ago. As a text-book, it is rapidly approaching the time when it will rival the *Course de Chemie* of Nicholas Lemery which appeared in 1675, passed through many editions, and served as a standard text-book for over fifty years.

To one familiar with the early editions of this book, the pages present an air of familiarity. Unlike many other German text-books, this one has not changed essentially in form, except to include recent discoveries and to make corrections in constants and data, and has not grown beyond the bounds which a self-respecting text-book should preserve. The fifth edition (1895) contained 572 pages; so that, in passing through seven editions, the book has accumulated only one hundred pages, and is still far from deserving the more pretentious title of *Handbuch*.

In the preface to the first edition, the author made the claim that the treatment "at least in the first half of the book" was "a purely inductive" one. Upon perusal of the pages of the text, however, it is hard to find any consistent application of this principle; in fact, it is probably true that no text-book of Organic Chemistry has ever been written in which the subject matter has been presented from an inductive point of view. The treatment throughout the book is especially characterized by a thorough-going formality, which, no doubt, has been the reason why this book has appealed particularly to students who have already completed an introductory course in Organic Chemistry, and to those who are compelled to review the subject with the purpose of familiarizing themselves as rapidly as possible with the systematic arrangement and typical reactions of the various classes and series of organic compounds. As might be expected, a few atavisms still cling to the pages of this most recent edition. Thus two (2) is chosen as the molecular weight of hydrogen, and as the

basis of molecular weights; the old nomenclature and formulas are used for substituted ammonium compounds, *e. g.*, "aniline hydrochloride, $C_6H_5NH_2$, HCl," instead of phenylammonium chloride. Other illustrations of a similar character might be chosen.

Here and there throughout the book, the reader finds that the results of new and striking discoveries, recently made, have not been overlooked in revising the text. A few, chosen at random, will serve to illustrate this virtue: ozonides; isoprene and caoutchouc; the Walden inversion; desmotropism of acetoacetic ethyl ester; triphenylmethyl and tribiphenylmethyl; thioindigo; salvarsan and neosalvarsan, azomethane; univalent nitrogen in the Hofmann-Beckmann reactions; glycerol mononitrate and glycerol dinitrate, etc., etc.

In the chapter on carbohydrates, the author has taken great pains to simplify the subject matter to bring it within the scope of an elementary presentation. But, at the same time, he has been compelled to discuss relationships which are purely stereochemical in nature. It is hard to understand how these relations can be made clear to the student without the use of the formulas commonly employed to designate space-configurations, when at every turn in the discussion the language teems with phrases which become significant only when considered in conjunction with such formulas. But these formulas are not to be found within the confines of the book. A similar criticism may be applied to other sections of the book which appear to be too advanced for an elementary student and too elementary for an advanced student.

It is probably as unnecessary to say more in a review of this book as it would be to deliver a lengthy address in introducing a speaker well known to his audience.

LAUDER W. JONES.

An Introduction to the Study of Organic Chemistry. By H. F. CLARKE. London: Longmans, Green and Co., 1914. Pp. viii + 484-8°. Price, \$2.00 net.

The keynote of this new text has been sounded at the very beginning in the Preface. The author says:

"In the writing of text books of organic chemistry, there are two distinct and incompatible systems. In the one, it is the practical aspect of the science which is kept in chief view; in the other, the symmetry and homogeneity. The one constantly directs attention to details; the other approaches the subject with the desire of displaying its orderly principles and structural unity. The present writer adheres with conviction to the latter method." Again: "No real knowledge of organic chemistry can be acquired without laboratory work; and to supply in a small text-book, covering the entire field, these practical details so that they can be memorized without actual experience, is contrary to the best interest of students."

A prelude of this kind would lead one to expect a fairly straightforward

account of the salient features of the subject without unnecessary digressions, and, at the same time, facts enough to emphasize the "symmetry and homogeneity" of this branch of chemistry. This is exactly what one finds upon reading the book. At times the statements appear a little bold and dogmatic, unrelieved by amplification, but there is always chance for an argument on points of this kind. In an elementary text, is it not better to avoid too much amplifying of subject matter, always keeping as close to the whole truth as possible, rather than to set up entanglements that may thoroughly dishearten a beginner?

As a matter of fact, text-books of elementary Organic Chemistry serve chiefly as syllabi for quizzes and for courses of lectures in which teachers usually have the opportunity and privilege of introducing what they themselves may think desirable for the proper development of the subject. In view of this condition, this new text is suited admirably to serve as a foundation for science courses, and at the same time to give the student a sufficient array of facts to make the book serviceable as a reference book in connection with a laboratory course, which, I take it, the author believes should always accompany the courses of lectures, quizzes, or other formal methods.

LAUDER W. JONES.