

principle into the procedure, but also includes a detailed study of the conditions of the reaction.

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NEW BOOKS.

Lehrbuch der Gerichtlichen Chemie. BAUMERT, DENNSTEDT UND VOIGTLÄNDER. In zwei Bänden. Zweite ganzlich umgearbeitete Auflage. 8°-xvi, 490. Braunschweig. F. Vieweg und Sohn. 1907. Price, 12 Marks, bound 13 Marks.

The first volume of the new edition of this manual by Dr. Baumert of the University of Halle is devoted to the detection and determination of poisons and noxious substances in the cadaver and excretions, in foods and beverages, household articles, water, air and soil and to chemico-legal problems in general. Volume II will be written by Drs. Dennstedt and Voigtländer, of Hamburg, and will be confined to the methods for the examination of inks, writings, signatures, forgeries, etc., and to the examination of blood, blood and spermatic stains and materials of a similar nature.

Dr. Baumert is entitled to the thanks and gratitude of analysts for having placed in their hands a manual of legal chemistry truly worthy of the name. Although a book of only 490 pages, it is a marvel of compactness and thoroughness. A reader, glancing over the table of contents, would be apt to form the opinion that the treatment, in general, must be incomplete, elementary and unsatisfactory, but upon careful study it becomes apparent that this is not true and that we have here one of those rare cases where an author has been able to do justice to his subject in remarkably few words, and that contrary to the verbosity of so many German writers we have in this book an exceptionally terse style.

While it is evident that the manual has been written to meet the needs of German chemists, the discussions are of such a nature and the reference to legal points and practice of such a character that it may be consulted with profit by all experts. At the present time this little book is unique in its field, being much more than a manual of determinative toxicology.

The author confines himself strictly to the chemistry of the materials discussed, all questions involving physiological effects, etc., being avoided so far as possible on the ground that such questions are not legitimately those of the chemist but rather of the medical expert, and that when the chemist has reported that in his judgment a substance is or is not present his work is done. Any subsequent questions as to whether the material found caused death, or could have caused death or was present contrary to law are not within the province of the chemico-legal expert.

The introduction is devoted to a very brief statement of fundamental facts relating to poisons and noxious substances, much space being

saved by avoiding any extended discussion, and by quoting from Kobert's "Kompendium." Following the introduction, three chapters, forty-nine pages in all, are devoted to the further presentation of general information for the guidance of analysts wishing to qualify as chemico-legal experts. For the beginner these pages are invaluable and even the experienced expert may read the suggestions of the author with profit, although the legal requirements of the German Empire are not deviated from. The suggestions made and facts here presented relate to such important topics as:

Chapter I. General rules to be followed in chemico-legal examinations; preliminary tests, planning the methods of analysis and the subsequent drawing up of reports and the statement of opinions; the laws governing the fees of experts in the German Empire. Chapter II. Poisonous materials found in foods, beverages, household articles, toys, etc., and finally in Chapter III, the author describes the methods for the testing and purification of reagents and apparatus in greater detail and more thoroughly than in any other manual of like scope with which the reviewer is familiar.

Part II, comprising the bulk of the volume, is devoted to the properties, methods of separation, identification and determination of such substances as the chemical expert may be called upon to search for. The common poisons are treated at length and as a rule in each case the methods given are many and varied, and the references to the original articles full, complete and down to date. Cross reference to other parts of the manual greatly facilitate the work of the analyst. If any comment may be made it is that possibly too great a choice is given, but this, on the whole, can scarcely be called an adverse criticism.

In the chapters devoted to inorganic substances in addition to the discussion of poisons, the legal questions arising concerning precious metals, their alloys, jewelry and counterfeit money are taken up.

An exceedingly valuable feature adopted by the author is to discuss in separate paragraphs under each substance treated, the materials in which the substance is to be found, the choice of methods to be employed and the general questions the chemist is called upon to answer. In these respects this manual is far in advance of any other. The methods of presentation and the nature of the information given may best be described by illustrations taken at random, for example. *Silver*—uses in the arts—forms met with in commerce—separation of silver from other elements—identification of silver—identification of silver compounds—determination of silver—the examination of hair, textiles, papers, etc., for silver—the recognition of silver stains—hair dyes, pharmaceutical silver preparations. *Phosphorus*—uses in arts—forms in commerce—poisoning by phosphorus—distribution in the cadaver—detection of phosphorus—

examination of the urine for phosphorus—identification of phosphorus compounds—determination of free phosphorus—analysis of commercial phosphorus—identification of phosphorous acid—phosphorus-containing compounds of commerce, matches, and methods for the study of match-making material and of the finished products with reference to the questions arising under the laws of the German Empire. Or take chapters of great interest at the present time to many American chemists, those devoted to sulphur dioxide and its salts, and to alcohol, here the sub-heads may be summarized as—*Sulphur dioxide*—general properties, identification, recognition in the air, examinations of foods for sulphites, determination of sulphites in wines, beer, etc., their detection in flesh, in fats—the identification and determination of sulphur dioxide in plants, the investigation and effects of flue gases, smelter fumes, etc.—and—*Alcohol*—properties, detection—determination—alcoholic beverages, analytical methods of German revenue service, the recognition of denatured and renatured alcohol—tables giving percentage composition of alcohols, etc.—detection of methyl alcohol in beverages, etc., amyl alcohol, etc., etc. It will be seen from these illustrations that the book is much more than a manual of chemical toxicology.

The chapters devoted to alkaloids, glucosides and other substances of vegetable origin are complete, down to date, and so well arranged that after glancing over the book one is able to find at once just the information one wishes both as to separation methods and identity tests. The color reactions are all tabulated and so arranged as to render consultation easy. Here again the analyst is given a variety of methods with the opinion of the author as to the choice under given conditions, an excellent system of cross references being introduced to aid in comparing the reactions given by different substances.

An excellent index covering both author's names and subject matter completes the book.

An appendix is devoted to such of the laws of the German Empire as the expert chemist must be familiar with and with a few tests and methods of investigation inadvertently omitted in the text. The book is so well written and the methods otherwise so judiciously chosen that it is a matter of surprise that the author makes so little use of the microscope, an instrument absolutely indispensable in chemic-legal examinations.

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Benedikt-Ulzer, Analyse der Fette und Wachsorten. Fifth, revised edition, by FERDINAND ULZER, P. PASTROVICH AND A. EISENSTEIN. Large octavo, xiii + 1168 pages, 113 figures in text. Berlin: Julius Springer, 1908. Price, M. 26.50.

The first edition of Benedikt's *Analyse der Fette* appeared in 1886. Out of it have grown two monumental works which serve as the standard guides to the analysis of fats and waxes in the English and German lan-