

the comprehension of the class of readers to which the book appeals. The author opens with a discussion of the bearings of physics and of chemistry, and illustrates by describing the distillation of water, and the union of iron with sulphur. We think the definition of chemistry, as given on page 4, rather awkwardly expressed, and liable to the interpretation that it includes, in part, facts that belong to physics.

After making the reader familiar with the practical operations of preparing and examining hydrogen, chlorine, and the other elements of this group, the subjects of atoms and their weights, formulæ, molecules and their weights, and very simple calculations on stoichiometrical principles, are introduced; this postponement of theoretical questions until after certain phenomena have been studied is advantageous. Then follows the study of oxygen, sulphur, and so on. In the chapter on carbon, the student is gently led into the field of organic chemistry, which is exploited only briefly, yet he becomes acquainted with the classification of hydrocarbons, the signification of isomerism and the "chemistry of rings."

In this way, the student insensibly gains some conception of organic chemistry before the term itself is used, and is ready to appreciate the few pages on chemistry of organized substances. Only forty pages are given to metals, and the book closes with an exposition of the periodic law.

A feature of the book is the absence of dogmatic assertions and the continuous introduction of reasoning. Teachers will do well to give the book a trial. The translation bears marks of haste or carelessness. Witness the following phrase: "That apparatus suffices for quite a few purposes only," and the English sentences on several pages. The make-up of the book is excellent; the illustrations are good, and the index is quite full.

HENRY CARRINGTON BOLTON.

FLESH FOODS: THEIR CHEMICAL, MICROSCOPICAL, AND BACTERIOLOGICAL EXAMINATION. BY C. AINSWORTH MITCHELL. London: Charles Griffin & Co., Ltd.; Philadelphia: J. B. Lippincott Co. 1900. xv+336 pp.

This book contains nothing really new or which cannot be found elsewhere in scientific literature, but it has the great merit of containing, in condensed form, methods, investigations, and tables which are scattered here and there in scientific works.

According to the preface, "It has been the author's endeavor to collect and summarize, in a convenient form, records of investi-

gations which are, for the most part, scattered through English and foreign scientific books and periodicals, and to select such methods as appeared most suitable for the examination of meat and its preparations.''

Chapters I and II have to do with the structure and chemical composition of muscles, tissues, and blood. In Chapter III, the flesh of animals which are eaten by man, including wild animals, fish, and birds, is described, giving the general characteristics and chemical composition. Next the examination of flesh, both sound and unsound, is taken up, giving methods and chemical constants. The next chapter summarizes some of the ways of preserving flesh, as by salting, drying, smoking, and by use of antiseptics. It includes several tests for antiseptics and preservatives in meat, and the examination of canned goods. One chapter is given to the composition and analysis of sausages, and one to the classification of flesh proteids. The changes due to cooking and the effects of parasites are well described. About thirty pages deal with the bacteriological examination of flesh, describing the principal bacteria which infest flesh, and giving methods for their detection. It closes by giving the best methods for the detection and separation of ptomaines.

The author refers freely to such eminent authorities as König, Chittenden, Hehner, and others.

The attempt has been made to cover such a wide field that it has been necessary to condense the matter much, but the condensation has been done very intelligently.

On the whole, it is a valuable and practical work and will be found a very useful handbook for analytical chemists.

W. B. BROWN.

A TEXT-BOOK OF URINE ANALYSIS FOR STUDENTS AND PRACTITIONERS OF MEDICINE. BY JOHN H. LONG, M.S., Sc.D. Easton, Pa.: The Chemical Publishing Co. 1900. 221 pp. Price, \$1.50.

An unusually clear and concise presentation of a well-worn subject. This manual is not only to be recommended to the student of medicine, but equally as well to the chemist and pharmacist, who will find it a great aid in the interpretation of analyses through the numerous references to clinical significance, and the appended tables, which explain in a very lucid manner the relation of pathological conditions to chemical composition. An especially commendable feature is the absence of discussions of