

of nucleic acids, and the differences, indeed, are in the opposite direction to what would be expected under such circumstances.

From the evidence at hand, therefore, it seems that the deposits of purine substances which form the so-called reflecting layer of the photogenic organs of the Lampyridae cannot be traced satisfactorily to the breaking down of nucleic acids. In agreement with the work of Harvey, reported in the preceding paper, dilute acid and alkaline solutions, hot or cold, fail to extract a light-producing substance from the dry tissues of these insects, even when used in the entire absence of oxygen, and such solutions rapidly destroy the photogenic activity of the dry tissue.

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### NEW BOOKS.

**Qualitative Chemical Analysis.** By CHALFANT E. BIVINS. New York: John Wiley and Sons. Price, \$1.00.

This manual is one of a series of loose-leaf laboratory manuals, edited by J. M. Jameson. The author has made no attempt to depart from conventional tests and separations. The book has, however, many excellent features. The directions are clear and easily followed; the discussion of procedures, explanatory notes, practice equations, and questions on the groups are excellent, and should be helpful to both teacher and student. The treatment of the analysis of alloys and metals is particularly good.

Comparatively little in the way of discussion of the principles of qualitative analysis has been attempted. The little that is given is so brief as to be of inconsiderable value. The statement that "*All the reactions of precipitation are ionic*, that is, are made by ions," would hardly be accepted even by many of the most ardent supporters of the theory of Electrolytic Dissociation. Likewise, the statement that "Oxidation is an increase in valence, and reduction a decrease in valence," leaves the student with an incorrect idea of these processes. No mention is made of the law of Mass Action and its applications.

For teachers who prefer to develop these subjects in the class room and wish a good laboratory guide, this laboratory manual can be used profitably.

JAMES H. WALTON, JR.

**Food Products.** By HENRY C. SHERMAN, PH.D. ix + 594 pp.; illustrated. New York: The Macmillan Company, 1914. Price, \$2.75.

During the last ten or fifteen years people have heard much about the origin and composition of foods and of laws to protect the purity of foods. Much of this discussion has been timely and it has acquainted the lay citizen with a class of facts which at one time appeared to be of interest to the food expert only. The lengthy papers and treatises on the somewhat

disagreeable topic of food adulteration have pretty thoroughly cleared the atmosphere over this field and have left as a desired result the assurance, that while there has been some adulteration in certain limited lines of food products, the extent of this has been far less than the rather lurid statements of overzealous writers would lead us to believe. Rational legislation has led to a pretty effectual check on the frauds which were attempted. The various discussions have led recently to the publication of several books which have the object of making different classes of readers acquainted with the essential facts regarding the production, control, and distribution of foods. The reviewer has had occasion to call attention to one of these, "The Source, Chemistry and Use of Food Products," by Professor Bailey, in a recent number of *THIS JOURNAL*. This book was intended primarily for students in certain grades of schools and colleges. The present book by Professor Sherman covers in a measure part of the same ground, but the discussion is such as to make it useful to a different group of readers.

Professor Sherman is the author of another work dealing with the subject of food as related to nutrition. In this book we are presented with another class of relations; the source of foods, the conditions of marketing, the purity of the products as they reach the consumer and the manufacture of canned or otherwise modified foods are treated in detail. The general character of the discussion makes the book more valuable to the chemist or food official than to the student or lay reader.

In different chapters practically the whole range of American foods is covered, and in a satisfactory manner. Appended to each chapter voluminous literature references are given and these seem full enough to satisfy the reader who may wish the original details of the discussions condensed in the text. Practically all that is recent and valuable in the literature of foods appears to be contained in these reference lists.

The second chapter deals with the subject of food legislation in a fair and non-partisan manner while in a long appendix the rules and regulations relating to the enforcement of the Food and Drugs Act are given in full, as are also the more important Food Inspection Decisions (F. I. D. bulletins) of the United States Department of Agriculture. The meat inspection laws and other laws are also given. Numerous tables throughout the book give the best-known results on the composition of various foods.

On the whole, the reviewer must express a very favorable opinion as to the scope and treatment of the material presented. J. H. LONG.

**Methods of Quantitative Organic Analysis.** By P. C. R. KINGSCOTT AND R. S. G. KNIGHT. New York: Longmans, Green and Co. 1914. xvi + 283 pp. Price, \$2.00 net.

The arrangement adopted in the book is based on a series of six lectures which the authors attended as students during the session of 1911-

1912 at the Imperial College of Science and Technology, London. In the first chapter is described the determination of molecular weights by physical methods; the ones considered are those of Victor Meyer, Bleier and Kohn, Dumas, Hofmann, and the cryoscopic methods as developed by Beckmann, Landsberger, and Walker. The second chapter deals with ultimate analysis. In addition to the methods of Liebig, Dennstedt, Dumas, Kjeldahl, and Carius, descriptions are given of the more recently described methods for the determination of oxygen, sulfur, halogens, phosphorus, arsenic, and antimony. The quantitative estimation of typical groups is considered in the third chapter; a large number of methods for determining the following groups are given: carboxyl, amino, substituted amino, imino, substituted imino, nitro, and carbonyl. The final chapter, which covers about one-half the pages in the book, is devoted to the description of processes for the quantitative determination of certain compounds of technical importance; these include carbohydrates, certain dyes, oils, fats, waxes, alkaloids, alcohols, phenols, acids, aldehydes, ketones, amines, chloroform, iodoform, chloral, ether, acetylenes, anthracene, vinegar, and wood-naphtha. Where such a wide field is covered it is evident that the treatment given to each topic must be very brief. In the case of most of the methods described, however, sufficient details are given to make it possible to carry out the method. It has, apparently, been the aim of the authors to include as many different processes as possible; for this reason the book is a valuable source of references to the literature.

JAMES F. NORRIS.