Book Reviews

Oxine and Its Derivatives. vol. I, *Oxine,* pt. 1; vol. II, *Oxine,* pt. 2; vol. III, *Derivatives of Oxine,* pt. 1; vol. IV, *Derivatives of Oxine,* pt. 2. R. G. W. Hollingshead. Butterworths, London, vols. I and II, 1954; vols, III and IV, 1956. 1211 pp. + index. $8.50 per vol.

The first systematic studies of 8-hydroxyquinoline (oxine) and its derivatives were carried out by Berg and his collaborators in the years following 1926. As a result of their work it became apparent that these compounds were important ones for the analysis of a number of inorganic ions. In 1933 Berg published a 30-page monograph devoted to the properties and applications of the oxines. No successor to Berg's monograph has appeared in the ensuing years, and R. G. W. Hollingshead has undertaken the tremendous task of assembling all of the published information now available on this interesting group of compounds. This has proved to be an ambitious undertaking inasmuch as the number of papers and patents on the subject has grown to several thousand.

The author has chosen to be noncritical and detailed in his approach to the problem of presenting the very large mass of information now available about the oxines. As a result, the monograph is very long indeed—four volumes, totaling some twelve hundred pages. Furthermore, it necessarily contains many quotations and data which are contradictory, and the burden of choice of what is significant and what is correct is left, to a considerable extent, in the hands of the reader. The author has done an excellent job of organization, and the chemist should have no difficulty in locating whatever information he needs, despite the length of the work. A good deal of this information is from journals not found in many libraries and in languages with which the chemist may not be familiar.

The first two volumes are devoted exclusively to 8-hydroxyquinoline and include chapters on preparation; physical and chemical properties; application to the separation and determination of the various cations, silica, and phosphate; and, finally, nonanalytical applications of the reagent. In volumes III and IV are found chapters on the preparation, properties, and applications of the rather large number of derivatives of 8-hydroxyquinoline. Volume IV also contains a 37-page chapter on the antibacterial and antifungal action of oxine and of its derivatives and chelates. Nearly half of volume IV is devoted to an addendum of recent papers on the oxines. Most of these papers have appeared since 1953, and the length of this chapter is indicative of the current interest in the subject.

Oxine and Its Derivatives is certainly a valuable reference work and should be a part of the library available to every analytical chemist.

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International Review of Cytology. vol. VI. G. H. Bourne and J. F. Danielli, Eds. Academic Press, New York, 1957. 566 pp. Illus. $12.

Cytology has long since passed the stage of being concerned with purely morphological descriptions of cells; modern cytology attempts to integrate the information obtained in many areas of cellular biology. Viewed in this light, the 12 articles contained in the sixth volume of *International Review of Cytology* fall within the realm of cytology because they deal with studies of single cells, but they should also be of interest to workers in other specialties, such as genetics, virology, embryology, physiology, biochemistry, and histochemistry. Thus, G. H. Beale's description of the genic stability and corresponding cytoplasmic states involved in the antigen system of *Paramecium aurelia* is of interest to the geneticist, immunologist, and embryologist, and the review by R. C. Williams of "The role of the electron microscope in virus research" will concern the virologist as well as the electron microscopist. Three other articles, one by A. Monroy on "An analysis of the process of fertilization and activation of the egg," a second by E. Borghese on "Recent histochemical results of studies on embryos of some birds and mammals," and a third, by R. J. O'Connor, entitled "Carbohydrate metabolism and embryonic determination," are concerned primarily with developmental processes.

The interesting article by A. W. and P. F. Pollister on "The structure of the Golgi apparatus" places the most recent information about this cytoplasmic organelle in its proper perspective with relation to older cytological observations. This historical type of review is extremely valuable at the present time, when modern techniques of electron microscopy and biochemistry have provided a wealth of data which some authors have failed to analyze in terms of the contributions of classical cytology and light microscopy.

Several reviews in this volume deal with a correlation of structure and function. In J. Gross's paper on recent studies of the thyroid, the morphology of the cells and tissue are discussed in relation to glandular activity. In two reviews—one, by G. Siebert and R. M. S. Smellie, on enzymatic and metabolic studies of isolated nuclei and the other, by G. H. Hogeboom, E. L. Kuff, and W. C. Schneider, on recent work in which the combined techniques of homogenization, biochemical assay, and electron microscopy are used—a correlation has been made between cellular constituents and enzymatic activity. The remaining three articles of the volume are of a more specialized nature: "The chromosome cytology of the Ascites tumors of rats, with special reference to the concept of the stemline cell," by S. Makino; "The histochemistry of polysaccharides," by A. J. Hale; and "The kinetics of the penetration of nonelectrolytes into the mammalian erythrocyte," by F. Bowyer.

As a volume, the sixth *International Review of Cytology* lacks cohesiveness of subject matter, owing mainly to the fact that modern cytology covers a very wide variety of interests. All the individual articles adequately summarize the latest information in their particular fields, but those which include speculative and interpretative material are perhaps the most useful for the nonspecialist, who finds it difficult to integrate the voluminous factual data in an unfamiliar field.

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An Introduction to Genetic Statistics. Oscar Kempthorne. Wiley, New York; Chapman & Hall, London, 1957. xvii + 545 pp. $12.75.

The student of biometrical genetics who would like to learn something of the theory on which standard breeding procedures are based has a hard time. The

underlying mathematics is not given in textbooks of animal and plant breeding, while the original literature, stemming largely from R. A. Fisher and Sewall Wright, is notoriously difficult for the uninitiated. This book is an attempt to make some of the theory available in textbook form. It fills a real need and should be a welcome addition to the array of genetics textbooks.

The first part of the book—almost half—is devoted to basic statistical tools for quantitative genetics, including elementary probability, statistical estimation, and hypothesis testing, and some of the elementary theory of population genetics. The rest consists of a systematic statistical treatment of quantitative inheritance. The emphasis is on variance partition, regression and path analysis, inbreeding and correlation between relatives, and Kempthorne's own work on partition of dominance and epistatic components.

Although the introduction states that only high-school algebra is needed, the reader will find that many sections are much more understandable if he is familiar with the calculus and standard statistical procedures. The methods are usually those of the original author, though with added explanation and (especially with Fisher's work) fuller algebraic details.

The book is not without weaknesses. In places the algebra is more cumbersome and lengthy than necessary, and in general the book is repetitious. The explanations are not always clear and are sometimes quite confusing (see, for example, page 303). Also there are occasional slips in algebra, the most troublesome being on page 305, where the subscripts 1 and 2 are interchanged in most of the formulas. Some subjects are dealt with inadequately (for example, human genetics), and it would be preferable, I believe, either to omit them entirely or to do them more completely.

Despite these shortcomings, the book has enough material hitherto unavailable in textbooks to make it uniquely useful for students of biometrical genetics.

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The Ashanti. A proud people. Robert A. Lystad. Rutgers University Press, New Brunswick, N.J., 1958. vii + 212 pp. Illus. $5.

This unpretentious little book will serve the lay reader as a pleasant introduction to the present-day culture of the dominant people of the new state of Ghana. It summarizes, in a simple and painless style, most of the major facts about the social, economic, political, and religious life of the Ashanti nation, with special reference to the town of Goaso, where the author and his wife spent nearly a year in 1949–50. It is entirely authoritative, since the author is a trained anthropologist, an associate professor at Tulane University. Consequently, it should also prove useful to tourists and businessmen who visit Ghana.

In no respect, however, does the volume supplant, or even substantially supplement, the standard ethnographic descriptions of the Ashanti by Busia, Fortes, and Rattray. It is "written down" to about the high-school level of literacy and presents a highly oversimplified account of the culture, with no scientific analysis and extremely little new information. It does not, for example, even mention such complex but scientifically important matters as the famous system of double descent, with both matrilineal and patrilineal clans. Students at the college level will find it much too elementary for use as a text, perhaps even as collateral reading. The professional social scientist, the missionary, and the educated West African will continue to depend upon the earlier sources, and for a summary will use Manoukian's *Akan and Ga-Adangme Peoples of the Gold Coast* (International African Institute, London, 1950).

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Reason and Chance in Scientific Discovery. R. Taton. Translated by A. J. Pomerans. Philosophical Library, New York, 1957. 171 pp. Illus. $10.

The history of science, in addition to contributing to what might be called the liberal scientific education, has an undoubted potentiality in providing a record from which scientists can obtain methodological guidance through the experiences of their predecessors. The realization of that potential depends upon an increased cultivation of the field, especially in the more recent period. The product may be something like the present work, which cites and analyzes examples of chance, error, "flashes of thought," and other incidents rare and commonplace in the history of discovery and invention.

This book should interest scientists for the picture that it gives of this product of the history of science. The case histories selected are as various as 16th century astronomy and 20th century medicine, and an interesting attempt is made to correlate them. Unfortunately there are too many cases for the size of the book, and the resultant oversimplification sometimes jars the sensibilities of the historian. Neither scientists nor historians will appreciate the evidences of careless writing, such as the confusion between the terms *discovery* and *invention* (worsened by the translator) and the looseness of the use of the terms *chance, error,* and others.

The original French edition was more modest in format, title, and price.

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Clinical Pathology Data. Compiled by C. J. Dickinson. Thomas, Springfield, Ill., 1957. xviii + 91 pp. $4.

Clinical pathology could be defined as the application of methods and instruments of precision in the diagnosis and follow-up of disease. Physiology, chemistry, physics, microbiology, and immunology are being applied to clinical pathology, in an ever-growing manner. A vast amount of data has accumulated. Only the specialist in this field, the clinical pathologist, is in a position to separate the wheat from the chaff—and to select what is applicable and useful in a particular situation.

The purpose of this book is to classify some of the tests more commonly used in clinical laboratories by giving normal values and the diseases in which the values are raised or lowered. If properly used, the information may save much effort and time that would otherwise have to be spent on trying to find all these things in the library.

The subject matter is treated in 15 sections dealing, respectively, with blood and plasma, cerebrospinal and effusion fluids, feces, gastric contents, porphyrin metabolism, semen, urine, adrenal, pituitary, renal function, hepatic function tests, glucose tolerance test, tests for syphilis, special tests, and some simple procedures (given in brief, practical notes).

The section on blood and plasma has been divided into four subsections, on physical properties, tests of clotting and bleeding disorders, cellular constituents, and chemistry.

Abundant cross references enhance the value of the book.

The accuracy of presentation of the large mass of material is generally satisfactory. Occasional statements could be questioned. The Paul-Bunnell test in a dilution of 1:128 is claimed to be "practically diagnostic of glandular fever" (page 70). This claim is hardly acceptable. Fetal erythroblastosis is treated as synonymous with Rhesus incompatibility of the newborn (pages 12, 19), whereas the part played by the ABO system is referred to as "congenital ABO