

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