in manuscript form, has been substituted. The familial index of the *Classification* has been retained. The revised indexes provide more facile access to the various parts of the combined work.

In the foreword Myers emphasizes the fact that there are many errors in Jordan's works which should have been corrected and comments on the need for a complete revision which would include the tremendous amount of work that has been accomplished in systematic icthyology since 1923. Until an ambitious and competent scholar, or a group of scholars (preferably a group of Jordan's students), undertakes and completes that herculean task and the manuscript is published, Jordan's combined works are indispensable and basic references and archives.

HILARY DEASON

AAAS

Industrial Chemistry

The Role of Diffusion in Catalysis. Charles N. Satterfield and Thomas K. Sherwood. Addison-Wesley, Reading, Mass., 1963. viii + 118 pp. Illus. $4.75.

This excellent short book is a welcome status report from a well-established field of chemistry and chemical engineering. In recent years, this field has enjoyed rapid theoretical and experimental progress, but there has been a dearth of general accounts, despite the considerable importance of the subject in the catalytic processes of the chemical and petroleum industries. The authors have recognized this importance and have directed their efforts toward persons who must consider the role of diffusion in catalysis in their research and development activities. They have given us a fairly lucid account which such readers may readily use to bring themselves up-to-date and which should also serve as a good introduction for the undergraduate or graduate student.

The three chapters and some of the subtopics are: "Diffusion" (in gases, liquids, and porous solids); "Mass transfer to catalyst particles" (including fixed beds, fluid beds, and slurries); and "Diffusion and reaction in porous catalysts" (including isothermal and nonisothermal cases, poisoning, and selectivity). After suitable introductions, each subtopic is developed theoretically, the experimental confirmation is cited, and then some comments that may be helpful to the practitioner are made. Criteria for estimating the importance of diffusion in experimentation are given. There are also fundamental data, such as a table of effectiveness factors that have been reported in the literature, and some numerical examples, frequently of industrial interest.

The quantitative treatment of the simple theory and the extensive literature citations, largely to work published during the last 5 years, give the book an authoritative aspect. However, the research worker will probably miss the elegance of the more extensive mathematical treatments, while a more extensive descriptive treatment would have been more suitable for some. But for many others, those who are attempting to combat technical obsolescence or those who are just beginning in this field, this will be a most useful book.

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Biology

The Physiology of Mosquitoes. A. N. Clements. Pergamon, London; Macmillan, New York, 1963. x + 393 pp. Illus. $12.50.

Clements presents the current knowledge on the functional characteristics of the mosquitoes in this outstanding monograph. His book is most welcome, and it is timely because the field is growing rapidly. The earlier recognition of the significance of mosquitoes as agents of distress and a later recognition of their potentialities as experimental animals have brought about a need for readily available information on the physiology of this group. This volume meets the need delightfully. As the principal source of information in its field and as a reference to principal sources for specific background information needed in planning research problems in invertebrate physiology, it will prove especially useful to advanced students in the biosciences. In like manner it should prove helpful to all who work in fields that involve invertebrates and to those who work on structures and functions of other forms of life, including the vertebrates.

The world literature including the more recent reports is adequately covered and well evaluated. The subject matter, which is organized around 16 main conventional topics that include all functions, is arranged in a logical sequence. The apportionment provides a reasonably well-balanced picture of the current state of knowledge. A systematic list of the species mentioned in the book is provided in an appendix. Selected illustrations, tables, and graphs from original sources (acknowledged) are used liberally throughout the book. Especially noteworthy are six plates of electron micrographs which show the finer structure of the midgut epithelium of adult female *Aedes aegypti* and *Aedes togoi.* These plates are a unique and valuable addition to the book.

In perusing the book one sees that probable gaps in knowledge are exposed, that unsolved problems are pointed out, and that differing views and seemingly conflicting data when not reconciled stand as open questions. I am hopeful and believe that this book will lead more than a few students to search for solutions to some of the many fascinating problems thus revealed. The worker beginning research may well be reminded that currently held conclusions concerning pertinent background information may not be firmly established and that repetition of some work may be necessary before he proceeds to an extended investigation.

The book is thoroughly documented and thus directs the inquiring student at all points to principal original sources. Complete references to these sources are conveniently given on the 41 pages that follow the appendix. An author index provides reference to each page upon which the author's contributions are cited. The reader is further aided by an adequate table of contents, a detailed subject index, and by a most helpful species index which combines associated subjects.

This book is volume 17 of the Zoology Division of the International Series of Monographs on Pure and Applied Biology. Characteristically, it possesses a high degree of excellence and is altogether pleasing. The material, which is well composed in a clear, simple style, well arranged and titled, and concise, is easily read and understood. The book is clearly printed on high quality paper and durably bound.

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