

Quinone photochemistry is barely mentioned, and nothing is said regarding dye photochemistry or photo-redox processes involving electron-transfer as such. Rearrangements and isomerizations are described in chapter 7, beginning with some interesting examples of dienone photochemistry. The treatment of valence isomerization of dienes is rather brief and is followed by a detailed discussion of *cis-trans* isomerization, evidently reflecting the author's own experience in photochemistry. The unfortunate terminology "non-vertical excitation" is propagated anew, and the confusion will not be lessened by a figure which shows non-vertical excitation of *trans*-stilbene where the text and cited literature refer to *cis*. The Schenck sensitization mechanism is described, but no adequate idea is given of the body of chemical evidence supporting Schenck's views. Chapter 8, "Photochemical cycloadditions," gives a good impression of the rich variety of these reactions. Chapter 9, "Photochemical fragmentations and related reactions," discusses, among other matters, carbene formation, photolysis of azo compounds, oxidative photocyclizations, and the Barton reaction. The final chapter ("Miscellaneous topics") offers some inadequate remarks on photochemical technique and lasers.

A few dubious statements appear, such as (p. 75), "There is evidence that every S_1 which does not fluoresce passes to T_1 ." If this refers to symmetrical aromatic hydrocarbons, this should be stated; otherwise, it is contradicted by recent work by Lindqvist and on page 107 of Turro's own book. Again, one cannot conclude, simply from a corresponding change in the φ_D/φ_F ratio, that " k_{ST} (quinoline) increases by two orders of magnitude when the lowest (excited) singlet is switched from $\Pi-\Pi^*$ to $n-\Pi^*$." Since related discussion in the text shows that Turro is clearly aware of this, such statements can only be attributed to carelessness in writing and editing. Unfortunately, many other instances of such carelessness can be cited.

The book does not deal explicitly with photoreaction of interest in biology, such as those of nucleotide bases or proteins, although the general discussions of energy dissipation and transfer pathways may be helpful to photobiologists. In summary, despite some lapses and ambiguities, *Molecular Photochemistry* offers a useful survey and bibliography of that limited area of organic photochemistry which has been

most active in recent years, together with enough background material to enable the reader to appreciate some of the kinetic factors controlling reaction and sensitization paths. Other books should be read for a better understanding of the quantum mechanical background. The paper and printing are mediocre, particularly in view of the price.

HENRY LINSCHITZ

Department of Chemistry, Brandeis University, Waltham, Massachusetts

Embryology

As Elizabeth M. Deuchar points out in the preface to **Biochemical Aspects of Amphibian Development** (Wiley, New York, 1966. 216 pp., illus. \$4.50), the years since 1960, when Brachet's *Biochemistry of Development* appeared, have seen an unparalleled growth in the literature of chemical embryology. The present monograph was undertaken in order to survey the recent literature and to present us with a much-needed general progress report. Since a critical summary of progress in the entire area would require more space than was available, Deuchar elected to write a current review of recent trends in biochemical embryology as reflected mostly by studies of amphibian material.

The subject matter is organized and delivered from two different approaches: one according to the morphological stages of the embryo and the other according to biochemical topics. Because the author writes from the viewpoint of one who seeks biochemical explanations for morphological changes, it is not surprising that the largest amount of space (chapters 2 through 9) is given to the first approach. The review begins with an outline of the morphological highlights of the development of *Xenopus laevis* and goes on to present biochemical findings that deal with oogenesis, fertilization, cleavage, gastrulation, neurulation, and so forth.

The second approach is found in a single chapter, which is devoted to a summary of biochemical features of development. Included are such topics as respiration, the synthesis of nucleic acids and proteins, the storage and utilization of precursor molecules, and the regional localization of specific enzymes and antigens. The discussion concludes with a consideration of the biochemical basis of differentiation.

The text is well supplemented with il-

lustrations, and the reader will find a vast amount of information and a large, selective reference list contained within the 216 pages. Deuchar's critical comments, sometimes detailed but most often brief, about the state of a particular problem or experimental approach to it appear throughout the review. Especially well delivered are her remarks concerning regional biochemical differences in the embryo, chemical studies on neurula, and the advisability of determining adequate expressions of results.

The shortcomings of the book arise mostly from the brevity of the treatment given the several topics. Because of this the reader may feel that the presentation is a bit rushed and incomplete; he may wish for a larger, more complete volume to follow.

If the reader expects to find in this monograph a detailed treatment and critical interpretation of the subject, he will no doubt be disappointed. If, however, he expects to find, as the author intended, "a brief, critical review of the recent findings as well as an adequate guide to further reading," he should be more than satisfied.

J. DOUGLAS CASTON

School of Medicine, Western Reserve University, Cleveland, Ohio

Encyclopedia of Woods

Modernization, extensive revision, the incorporation of new concepts, and the correction of errors are valid reasons for the production of a new edition of a book. Yet in F. H. Titmuss's **Commercial Timbers of the World** (Technical Press, London; Chemical Rubber Publishing Company, Cleveland, 1965. 285 pp., illus. \$15), a third edition of the author's *Concise Encyclopaedia of World Timbers*, I do not find that any of these conditions have been fulfilled. In a review of the second edition [*Garden Journal* 10 (No. 3) 107, 124 (1960)] I pointed out error after error and omission after omission, as well as the inadequacy of the bibliography and the author's lack of anatomical knowledge. Although the new edition is described on the jacket as being "thoroughly revised and enlarged" (in the preface Titmuss merely states that he has taken the opportunity of "slightly amending the text"), nothing substantial has been done to improve on the 1959 edition, except for the addition of 20 more