the author's necessary circumscription of the area to be mapped and his scrupulous attention to the clarification of detail in what is discussed. The specific failures to broaden the section on spectroscopy to include the infrared and the useful empirical relationships in the ultraviolet, as well as that on reactivity to include carbonyl addition reactions, may be noted. In this regard the work cannot serve completely to introduce the student of theoretical organic chemistry to his subject.

The valence-bond approach is used almost exclusively—a decision of the author that will certainly be welcomed by the majority of organic chemists who have found the resonance hybrid symbolism more convenient to their understanding. One questions, somewhat, the insistence that the difficulties of the valence-bond theory are so evenly matched by those of the molecular orbital approach to structure. The latter seems clearly ahead in comprehensibility to an organic chemist where electronic transitions are involved and, given time, may provide a clearer notion of molecular structure.

All will welcome the substantial appendixes; one provides a thorough grounding in the mathematical basis for the theory of resonance, and the other represents an extensive collection of data on bond lengths and angles.

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Problems in Amoebiasis. Charles W. Rees. Thomas, Springfield, Ill., 1955. x + 119 pp. Illus.

After devoting a lifetime of investigation to the subject of amebiasis, Charles Rees has written a small, compact book on the problems that might be encountered today by one interested in studying *Endamoeba histolytica.* This book, although admirably brief (100 pages), covers various aspects of amebiasis quite adequately.

Although the author has been more closely associated with basic investigations, the review of the clinical question is more complete with respect to such topics as diagnostic procedures, chemotherapy, pathology, and so forth.

The reason for a less detailed account of the fundamental biological and physiological properties of *E. histolytica* is well presented by the author. Although the protozoan has been successfully cultured for approximately 30 years under a variety of conditions, the apparent dependency for growth of the ameba on the presence of other living cells, either bacteria, protozoans, or animal cells, has greatly hindered basic studies of the organism.

Therefore, quite a respectable amount of knowledge is presented on the culture of the ameba—albeit in association with other organisms—and this contrasts quite sharply with the paucity of information on the physiology of the ameba. Rees, with his considerable experience in cultivating *E. histolytica,* on the subject of culture, has deviated from the review form to present selectively some of his own work in greater detail. This is justified on the basis of practical aids included to help obtain monaxenic cultures. It is not justified, perhaps, in the case of his own physiological experiments which he has included. There is a fairly complete bibliography at the end of each topic.

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Recent Studies in Avian Biology. Albert Wolfson, Ed. Published under the sponsorship of the American Ornithologists' Union. University of Illinois Press, Urbana, Ill., 1955. 479 pp. Illus. $7.50.

This volume was prepared at the request of a committee of the American Ornithologists' Union for a book that would present recent research in ornithology. The editor states in the preface that the book has two objectives ". . . to stimulate further research in ornithology" and "to provide . . . a convenient and authoritative source of the contributions of ornithological research to broader biological fields." Although the book falls somewhat short of these objectives in its over-all presentation, certain of the chapters are very well written and should stimulate interest. Part of the difficulty of the book is that there were 13 different contributors, and the chapters were received for publication at various times from January 1952 to April 1955. There is a considerable difference, therefore, in the recency of bibliographic references.

The book is divisible roughly into three phases: systematics, including paleontology (three chapters); anatomy, physiology, behavior, migration, and diseases (eight chapters); and population studies (two chapters). The first chapter, "Avian Systematics" (Alden H. Miller) should be of considerable interest to all biologists. The author gives an excellent summary of the advantages and disadvantages of bird study in relation to the broad problems of taxonomy and evolution. He emphasizes that avian taxonomy suffers from inadequate collections and inadequate genetic studies and that, in common with some other fields of taxonomy, there is a tendency to overemphasize minor differences of racial character. The author is an advocate of the importance of geographic isolation in avian evolution. Biologists should also find much of value in the chapter on "Recent Revisions in Classification" (Herbert Friedman) and on "Paleontology" (Alexander Wetmore).

The chapter on "Anatomy" (Harvey I. Fisher) is especially impressive because of the suggestions of anatomical problems that remain to be solved. The chapters on "Bird Navigation" (Donald R. Griffin), "Migration" (Donald S. Farner), "Nocturnal Migration" (George H. Lowery, Jr., and Robert J. Newman), and "Breeding Biology" (David E. Davis) are interestingly written and well documented. These chapters will be valuable because of their excellent bibliographies.

The physiology of birds receives very modest treatment in this book. It is true that much of the recent avian physiology has centered about domestic forms and that data for wild birds are relatively scarce. It was a disappointment, however, to discover that the discussion of endocrine glands is concerned primarily with their relation to migration and that hormones per se are considered only in relation to sex differentiation. The latter chapter (L. V. Domm), although it was the most recent to be received for publication, has the least complete bibliography.

The chapters on "Population Research" (Joseph J. Hickey) and "Bird Banding" (Donald S. Farner) are interesting and have elaborate bibliographies. These should be particularly valuable to other biologists. The final chapter on "Diseases of Birds" (Carlton M. Herman) is also well documented; but, as the author points out, this subject has been sadly neglected except for poultry diseases.

There is much to commend this book and any lack in unified presentation is probably compensated for by the excellence of bibliography.

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The Chemistry of Tanning Processes. K. H. Gustavson. Academic, New York, 1956. 403 pp. Illus. $9.

This is a book on the fundamental chemistry of tanning. Besides extensive coverage of chrome and vegetable tanning, which are the two most important tannages, the author has included chapters on Syntans, aldehydes, and quinone