J = 2.6 Hz, 1 H), 6.49 (br s, 1 H), 6.87)br m, 1 H), 7.31 (d, d, t, J = 16, 8, 2.6 Hz, 1 H), 7.88 (d, p, J = 16, 2.6 Hz, 1 H); UV (pentane) end absorption.

(11) X-ray data to be published separately.
(12) A similar head-to-head syn dimer has been reported by Cava and coworkers[13] as one product resulting from the protonation of the norbiphenylene anion.
(13) M. P. Cava, K. Narasimham, W. Zeiger, L. J. Radonovich, and M. D. Blick, *J. Am. Chem. Soc.*, **91**, 2378 (1969).
(14) Although the isolated dimer appears homogeneous, the spectral data does not allow an unambiguous choice between the four possible geometrical isomers of **13** at this time.
(15) M. F. Semmelhack, H. N. Weller, and J. S. Foos, *J. Am. Chem. Soc.*, **99**, 292 (1977).
(16) (a) N. D. Epiotis and S. Shaik, *J. Am. Chem. Soc.*, **99**, 4936 (1977); (b) N. D. Epiotis, *Angew. Chem., Int. Ed. Engl.*, **13**, 751 (1974).
(17) K. W. Egger and A. T. Cocks, *Helv. Chim. Acta*, **56**, 1516 (1973).

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Book Reviews

Critical Stability Constants. Volume I. Amino Acids. By A. E. MARTELL and R. M. SMITH, (Texas A&M University). Plenum Press, New York, N.Y. 1974. xiii + 469 pp. $23.00.

This large volume is the first of three dealing with the stability constants of ligands. It is a compilation of metal complex equilibrium constants of the amino carboxylic acids and their corresponding enthalpy and entropy values.

The book is arranged in a logical order going from the simple to the complex amino acids. All tables and data are presented with similar organization and, with the use of an excellent index, are easily found.

Data selected for the volume were judged by the authors to be the most reliable and up-to-date of the published literature values. This and the succeeding volumes would be a valuable addition to the working library of the analytical chemist.

G. R. Powell, *Eastman Kodak Company*

Chemical Control of Insect Behavior. Edited by H. H. SHOREY (University of California, Riverside) and J. J. MCKELVEY, JR. (Rockefeller Foundation, New York). Wiley-Interscience, New York, N.Y. 1977. xii + 414 pp. $19.50.

The latest volume in Wiley's Environmental Science and Technology Series, this book presents a valuable review (through the 1975 literature) of the field of insect control by the use of pheromones and related insect behavior regulating compounds. It consists of a well-organized series of articles by an international assemblage of specialists in chemical ecology, insect physiology and behavior, and pest management studies. As such, it provides in a very readable format a thorough introduction to the concepts, terminology, and current research problems facing the diverse groups whose research contributes to this field.

Following an informative introduction in which basic terms are defined, a series of three articles deals with physiological studies of the chemosensory response system in insects. The next four articles address the integrated behavioral responses of insects to their plant or animal hosts. An article describing possible mechanisms by which insects respond to distant odor sources highlights this section. The discussion next focuses on the role of pheromones in regulating insect sexual behavior, oviposition, and feeding, emphasizing fruitfly and mosquito studies. The subsequent articles concerning Coleoptera and Lepidoptera serve to inform the reader of the extreme complexity of insect behavior patterns and the necessity of learning a great deal more of the pheromone-mediated behavior before successful manipulation of insect populations can become routine.

An article by J. S. Kennedy (Imperial College) discusses means of designing efficient and unambiguous laboratory bioassays for potential behavior regulating compounds. Natural products chemists will be particularly interested in the section which includes articles by R. M. Silverstein and Y. Tamaki discussing their recent research and tabulating known pheromones and synthetic attractants for over 100 species of insects. The final section of six articles provides what may be considered the most valuable contribution this book makes to this rapidly evolving field. These articles provide instructive accounts of the applications of insect attractants and repellents in the control of mosquitos and fruitflies and the economic pests of stored products, agricultural crops, and forests. Perhaps the greatest strength of this book lies in the clarity with which it defines the problems which impede the successful field use of insect behavior regulating compounds. This book is particularly timely in its attempt to establish order and perspective to a complex multidisciplinary field. The authors aptly note in summary that "... the contributors to this book isolated and identified certain issues that are likely to influence the future growth and direction of this field".

William R. Bartlett, *Saint John's University (Minnesota)*

Immunology, Aging and Cancer. F. M. BURNET (University of Melbourne). W. H. Freeman and Co., San Francisco, Calif. 1976. viix + 162 pp. $9.95, hardcover; $6.50 soft cover.

The book contains a series of nine lectures presented by the author at the University of California, Irvine, in April 1975. Even though a wide range of topics is contained in a very short series, the discussions are centered on the concept of intrinsic mutagenesis.

In the first four chapters, The Basis of Immunology, Clonal Selection and Antibody Production, T and B Cells, and A Homeostatic and Self-monitoring Immune System, the author presents a broad picture of immunity and immunology as an element in the process of survival.

A preliminary discussion of mutation in Chapter Five is followed by a discussion of the medical aspects of somatic mutation in the next three chapters on aging, a new category of genetic disease, and autoimmune disease. In these chapters as well as in Chapter Nine, "Cancer", the author relates the diseases discussed to error produced during DNA replication and repair by DNA polymerases of varying degrees of error proneness.

An adequate glossary and references cited chapter by chapter at the end of the book will be of value in aiding the nonspecialist reader who wishes to achieve a thorough understanding of the material presented.

T. J. Bond, *Baylor University*

New and Specialty Fibers. Applied Polymer Symposia, No. 29. Edited by J. ECONOMY (IBM Corporation). John Wiley & Sons, Inc., New York, N.Y. 1976. vi + 223 pp. $14.95.

This volume encompasses 19 papers given at the Chicago American Chemical Society meeting in August 1975. It is organized into three sections: filamentary superconductors, high-temperature and reinforcing fibers, and fibers for pollution control applications. The materials discussed are largely inorganic and include: Nb_3Al, V_3Ga, NbTi, Nb_3Sn, Cu-based alloys, V_3Si, Nb_3Ge, NbCN, boron carbide, glass, sapphire alloys, carbon-graphite, and treated cotton. Topics for these fibers include preparation, characteristics, fabrication, and property-structure relationships.

The book is well presented and appears to cover the subject comprehensively. Considerable data are given along with many excellent photomicrographs. There are two papers included which seem a bit incongruous and, perhaps, would best be used elsewhere: (1) the second one in the first section on Nb_3Al was quite short with no experimental data and, as such, was a brief review; and (2) the first one in the third section was a process design evaluation and an engineering study. One of the running titles is in error (in the paper by G. E. Pike et al., NbCN given as $NbCl_5$).

This book is obviously not for distribution to all chemists, but for someone who is acquainted with the areas covered, it is required.

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