Book Reviews *

The Photosynthetic Reaction Center. Volumes I and II. Edited by Johann Deisenhofer (Howard Hughes Medical Institute and the University of Texas Southwestern Medical Center) and James R. Norris (Argonne National Laboratory). Academic Press: New York. 1993. Volume I, xiv + 432 pp. Volume II, xviii + 574. $129.00 each. ISBN 0-12-208661-9 and 0-12-208662-7.

These volumes describe progress toward understanding photosynthesis. Volume I covers the chemical and biochemical process of photosynthesis (including green plant photosynthesis), and Volume II is oriented to the physical aspects of the process of photosynthesis (bacterial photosynthesis or model compounds). After a list of contributors and a preface by the editors, there are a total of 30 chapters with the following headings: Structure and Function of the Photosynthetic Reaction Center of *Rhodobacter sphaeroides*; Refinement of the Structure of a Water-Soluble Antenna Complex from Green Photosynthetic Bacteria by Incorporation of the Chemically Determined Amino Acid Sequence; Preparation, Purification, and Crystallization of Purple Bacteria Antenna Complexes; Structural Features of Photosynthetic Light-Harvesting Systems; Genetic Analysis of Photosynthetic Membrane Biogenesis in *Rhodobacter sphaeroides*; Digital Imaging Spectroscopy; Bacterial Reaction Centers with Modified Tetrapyrrole Chromophores; Electron and Proton Transfer in the Acceptor Quinone Complex of Reaction Centers of Phototrophic Bacteria; Electron Transfer Between Bacterial Reaction Centers and Mobile c-Type Cytochromes; Isolation and Properties of the Photosystem II Reaction Center; Biochemical, Biophysical, and Structural Characterization of the Isolated Photosystem II Reaction Center Complex; Photosystem II Reaction Center Bicarbonate; Structure and Function of the Reaction Center cofactors in Oxygenic Organisms. Volume II contains the remaining chapters with the following headings: Electron-Transfer Mechanisms in Reaction Centers—Engineering Guidelines; Simulations of Electron Transfer in Bacterial Reaction Centers; Electron Transfer and Charge Recombination Reactions in Wild-Type and Mutant Bacterial Reaction Centers; Time-Resolved Spectroscopy of the Primary Electron Transfer in Reaction Centers of *Rhodobacter sphaeroids* and *Rhodopseudomonas viridis*; Time and Frequency Domain Study of Different Electron Transfer Processes in Bacterial Reaction Centers; Initial Electron Transfer Events in Photosynthetic Bacteria; Spectral Hole Burning—A Window on Excited State Electronic Structure Heterogeneity, Electron-Phonon Coupling and Transport Dynamics of Photosynthetic Units; Photosynthetic Reaction Center Spectroscopy and Electron Transfer Dynamics in Applied Electric Fields; Carotenoids in Photosynthetic Bacterial Reaction Centers—Structure, Spectroscopy, and Photochemistry; Infrared Vibrational Spectroscopy of the Photosynthetic Reaction Center; Electron Spin Polarization in Photosynthetic Reaction Centers; Magnetic Resonance of Bacterial Photosynthetic Reaction Centers; Time-Domain EPR Spectroscopy of Energy and Electron Transfer; Multistep Electron and Energy Transfer in Artificial Photosynthesis; Modeling Primary Electron Transfer in Photosynthesis Using Supramolecular Structures; Models of Photosynthetic Chromophores—Molecular Structures of Chlorins and Bacteriochlorins; and Three-Dimensional Structure of the Reaction Center of *Rhodopseudomonas viridis*. Both books contain subject indexes.

Reporting Experimental Data. Selected Reprints. Edited by Howard J. White, Jr. (National Institute of Standards and Technology). American Chemical Society: Washington, DC. 1993. x + 366 pp. $89.95. ISBN 0-8412-2529-x.

This book was compiled under the auspices of the American Chemical Society Task Force on Scientific Numeric Data. After a preface by the editor, there are 55 chapters in typescript form organized under the following sections: Introduction—Describing and Presenting Measurements; Items of General Use in Chemistry; Thermodynamics Including Biothermodynamics; Chemical Kinetics and Transport Properties; Electrochemistry; Colloid and Surface Chemistry; Photochemistry; Analytical Chemistry; Crystallography and Electron Diffraction; Spectroscopies; and Automated Products. There are an appendix of quantities, units, and symbols in physical chemistry, references to the Green Book (tables), references to this book, and a subject index.

Drug Design for Neuroscience. Edited by Alan P. Kozikowski (Mayo Clinic). Raven Press: New York. 1993. xiv + 480 pp. $110.00. ISBN 0-7817-0061-2.

This book is a collection of articles by drug designers on achieving the production of small molecules aimed at preventing and treating certain disease states. After a list of contributors and a preface by the editor, there are 16 chapters with the following headings: Neurotransmitter Receptors as Pharmacological Targets in Alzheimer's Disease: Design of Drugs on a Rational Basis; The Design and Synthesis of BMY 21502: A Potential Memory and Cognition Enhancing Agent; Muscarinic Agonists for Central Nervous System; Novel Organic Reactions in the Search for Anxioselective Anxiolytics at the Benzodiazepine Receptor; Design of Orally Active Dopamine Autoreceptor Agonists; 3β-(Substituted Phenyl)tropan-2-carboxylic Acid Ester Analogues of Cocaine: Synthesis and Biochemical and Pharmacological Properties; Serotonin Receptors, Agents, and Actions; Studies of a Novel Series of Thiazole-Containing 5-Hydroxytryptamine-3 Receptor Antagonists; Conformationally Constrained Acidic Amino Acids as Probes of Glutamate Receptors and Transporters; L-2-(Carboxycyclopropyl)glycines: Conformationally Constrained L-Glutamate Analogues; Design and Synthesis of Conformationally Constrained Acidic Amino Acids as *N*-Methyl-D-Aspartic Acid Receptor Antagonists; Modulation of the *N*-Methyl-D-Aspartate (NMDA) Receptor Complex: Design and Synthesis of Competitive NMDA Antagonists and Phencyclidine (PCP)-Site Ligands; Glycine-Site *N*-Methyl-D-Aspartate Receptor Antagonists; Synthetic Inositol Polyphosphates and Analogues as Molecular Probes for Neuronal Second Messenger Receptors; Inositol 1,4,5-Trisphosphate Affinity Chromatography: Fishing Out Novel Ins (1,4,5)P_3-Recognizable Proteins; and Chemical Approaches to Brain-Targeting of Biologically Active Compounds. There is a subject index.

Advances in Medicinal Chemistry. Volume 2. Edited by Bruce E. Maryanoff and Cynthia A. Maryanoff (R. W. Johnson Pharmaceutical Research Institute). JAI Press: Greenwich, CT. 1993. xii + 260 pp. $90.25. ISBN 1-55938-581-2.

This book is the second in the ongoing series on drug research and drug development in industrial, academic, and government laboratories. After a list of contributors, a preface by the editors, and a forward by Sir James Black, there are six chapters with the following headings: Inhibition of Steroid 5α-Reductase; The Calicheamicins; CC-1065 Analogs—Sequence Specific DNA-Alkylating Antitumor Agents; Promiscuity in Receptor Ligand Research—Benzodiazepine-Based Cholecystokinin Antagonists; The Discovery and Development of the Nonpeptide Angiotensin II Receptor Antagonists; and A Perspective of Aldose Reductase Inhibitors. There is a subject index.

Life During a Golden Age of Peptide Chemistry. Profiles, Pathways, and Dreams. By Bruce Merrifield and Jeffrey I. Seeman (Series Editor). American Chemical Society: Washington, DC. 1993. xxii + 298 pp. $24.95. ISBN 0-8412-1842-0.

This book is one of 22 in the *Profiles, Pathways, and Dreams* series of autobiographies of famous chemists in which individual chemists discuss their roles in the development of chemistry. Merrifield describes his life, including his work for which he won the Nobel prize by revolutionizing peptide chemistry with his discovery of a more efficient way to synthesize peptides.

*Unsigned book reviews are by the Book Review Editor.