Organic Compounds

Chemistry of Terpenes and Terpenoids. A. A. NEWMAN, Ed. Academic Press, New York, 1972. xiv, 450 pp., illus. $25.

Terpene chemistry has provided an immense source of problems whose solutions have been a stimulus for the development of new synthetic organic procedures and for the development of theories that are now fundamental to organic chemistry. Simonsen's five-volume series offered a comprehensive and authoritative coverage of terpene chemistry through the early '50's, but it is now badly outdated and, at least in the case of the first three volumes, is in need of complete revision. The present work offers a single-volume survey of the progress on terpenes achieved in recent years. It features an introduction to terpenes, a chapter on selected transformations of monoterpenes, and chapters outlining, using a biogenetic framework, work on sesquiterpenes, di- and sesterterpenes, triterpenes, and carotenoids. It ends with a chapter on biosynthesis. Considering the biogenetic emphasis in most chapters, one wonders why the last chapter was not placed near the beginning of the text.

Students should find this book an excellent introduction to terpene chemistry and research workers specializing in the field should find the material it contains of some value. However, the challenge of the massive undertaking required to update Simonsen still presents itself to workers in this field.

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Blood Constituents

Blood Lipids and Lipoproteins. Quantitation, Composition, and Metabolism. GARY J. NELSON, Ed. Wiley-Interscience, New York, 1972. xii, 980 pp., illus. $39.95.

This book is a compilation of 16 papers by 21 contributors who attempt to fulfill the goal set by the editor of providing "a reasonably complete summary of the field" of blood lipids and lipoproteins. Their efforts have generated a 980-page volume which includes extensive author and subject indexes and has a fairly elegant editorial vest. As is often the case with a multiauthor approach, the book lacks continuity, suffers from redundancy, and often reflects the authors' particular biases. At a time when information on plasma lipoproteins and formed blood constituents is being obtained at an explosive rate, and a parallel growth of books and reviews on the subject has resulted, the reader may be led to wonder whether this newcomer provides sufficiently novel coverage of information and concepts to justify its purchase or consultation.

On the positive side, the book contains a critical and detailed treatment of methods for the isolation and quantification of lipids from plasma, red blood cells, white blood cells, and platelets. That this is the major emphasis of the book is clearly evidenced by the fact that half of the chapters are devoted to this topic. The methods described reflect the authors' individual preferences, however, and the reader may find it difficult to determine which of the various methodologies listed have gained both acceptance and general use. The significance ascribed in this book to blood lipids is exemplified by the assignment of an entire chapter to the application of the relatively sophisticated technique of infrared spectroscopy to their analysis. On the other hand, the proteins of the lipoproteins of the plasma and those of the red-cell membranes are given relatively little attention, and the presentations contain the many inadequacies that have been clarified by workers in the field since these chapters were completed. Plasma lipoproteins as intact complexes are dealt with authoritatively with regard to methods for their isolation and quantitative analysis, and also with regard to their biosynthesis. A discussion of the metabolism of plasma lipoproteins is included, although the coverage of the subject is somewhat fragmentary and far from exhaustive. A particularly detailed account of the distribution of plasma lipoproteins in normal and diseased states is given, and this should prove valuable to the reader with a clinical orientation.

Considering its broad scope, the book suffers from a serious imbalance among the topics discussed. A surprising omission is a detailed treatment of the chemical and metabolic relationships among lipids of circulating lipoproteins and cell membranes. Such a chapter could have helped to reduce the information gap that now exists between investigators working on "soluble" and "insoluble" lipoproteins.

This book should prove particularly valuable, from the technical standpoint, to lipid biochemists, and to those interested in plasma lipoproteins; it will be less so to other specialists. These may wish to consult it at least for the references, which are numerous and well indexed.

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Neurochemical Manipulation

Immunosympathectomy. A meeting, Milan, 1969. GEORGE STEINER and EDUARD SCHÖNBAUM, Eds. Elsevier, New York, 1972. xiv, 254 pp., illus. $27.50.

Although the near-magical properties of the sympathetic nerve growth factor (NGF) and its antiserum have been known for nearly 20 years, the present symposium volume is one of the first to be devoted exclusively to a comprehensive review of this field. The use of NGF antiserum is emphasized, whereas another recently published symposium summarizes work on NGF itself (E. Zaimis and J. Knight, Eds., *Nerve Growth Factor and Its Antiserum,* Athlone, 1971). These two volumes provide the most up-to-date and complete source books for those interested in a research story which has many fairy-tale-like qualities.

Nerve growth factor is a protein found in special abundance in mouse salivary glands and in certain snake venoms. It has a unique biological activity as a potent and specific stimulant of the growth of postganglionic sympathetic neurons and sensory neurons. These effects are seen most prominently in the sympathetic or sensory ganglia of young animals when the neurons are not fully developed. Similarly, antibodies to the salivary gland NGF are most effective in young animals. When such antiserums are administered to neonatal mice, rats, or other mammals, they cause a permanent loss of adrenergic neurons from sympathetic ganglia—a process known as "immunosympathectomy." The 14 chapters in this volume give a general review of the sympathetic nervous system and its normal development and describe in