

of Aristotle, the *Historia Naturalis* of Pliny the Elder (1st century A.D.), and the medieval encyclopedists—Albertus Magnus, Vincent of Beauvais, or Bartholomew Anglicus, to cite a few of the better known—it actually embraces the newer zoological work of Renaissance science. Included in this assembly are not only Gesner's own significant achievements but also those of such men as Guillaume Rondelet and Pierre Belon. Thus what was produced in English by Topsell was a less expensive, more accessible version (and a modified one—Gesner's vol. 1 was used for *The History of Four-Footed Beasts*, but Topsell's second volume contained new sections on bees, spiders, and earthworms never written by Gesner) of the latest scientific word in zoology.

Indebtedness to Gesner is again revealed in the third volume, which is the first English text of Theodore Muffet's (or Mouffet's or Moffet's) *Insectorum sive Minimorum Animalium Theatrum*. For, in fact, Muffet had drawn upon the manuscript sources derived from Gesner's entomological collections in producing the *Theater of Insects* now made available in this handsome reprint.

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Molecular Optical Activity

Optical Rotatory Dispersion and Circular Dichroism in Organic Chemistry. Including Applications from Inorganic Chemistry and Biochemistry. Proceedings of a NATO summer school, Bonn, Sept.–Oct. 1965. G. SNATZKE, Ed. Sadtler Research Laboratories, Philadelphia, 1967. 438 pp., illus. \$13.50.

This timely book brings together a significant fraction of the fruits of the recent renaissance in the field of molecular optical activity. Although the emphasis is upon application of the techniques of optical rotatory dispersion and circular dichroism to problems of organic chemistry, there are also substantial sections devoted to other areas of chemistry. The book will be useful both to graduate students and to research workers.

Two dominant themes are interwoven in the text. The first is the utility of optical activity for the establishment

of absolute configuration, conformation, and conformational equilibrium of organic and inorganic molecules in solution. The second is the physical origin of the magnitude, sign, and structural dependence of the optical activity of different chromophoric groups. Quadrant and octant rules provide the unifying framework within which absolute configuration and conformation are discussed. The respective rules for saturated ketones, α - β and β - γ unsaturated ketones, dienes, and lactones are examined and applied in chapters by Crabbé, Djerassi, Klyne, Mislow, Wolf, and others. A wealth of data which are of both spectroscopic and stereochemical interest is also given for carboxylic acids, episulfides, biaryls, and a variety of other chromophoric groups.

The molecular origins of the effects of solvent species and temperature upon optical activity, and the utilization of these effects for the illumination of conformational equilibria, are examined from several points of view in chapters by Djerassi, Klyne, Moscovitz, Rassat, and Snatzke. Regrettably, Weigang's work, which provides a rational explanation for the anomalous data obtained for some rigid ketones, is mentioned only by Snatzke.

Diverse topics that lie outside the domain of organic chemistry are also considered. Synthetic high polymers are discussed by Pino, who brings together the experimental results for a wide range of molecules, including recent stereo-regular species. The virtues of various methods for estimating α -helix contents of polypeptides and proteins from their rotatory-dispersion curves are the main subject of a chapter by Blout. Kronig-Kramers transforms and the electronic origins of optical activity are examined by Moscovitz; his pioneering work with Moffitt on the vibrational structure of ORD and CD curves is included in the book. Inorganic molecules are discussed briefly by Mason and by Woldbye. The latter author has also provided a succinct summary of the instrumentation available to carry out measurements of optical activity.

Somewhat more than one-third of the book consists of manuscripts already published but scattered about in journals. There are extensive references to the literature through 1965.

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The Chemical Senses

Olfaction and Taste II. Proceedings of the second international symposium, Tokyo, Sept. 1965. T. HAYASHI, Ed. Pergamon, New York, 1967. 843 pp., illus. \$30.

This collection of 53 papers presented at the symposium on olfaction and taste is a reasonably accurate reflection of both the character and the subjects of research currently being carried out on the chemical senses. In the organization of a symposium the program can be restricted or can be open to wide participation. In this instance, the latter course was followed. The papers range from brief scientific reports to comprehensive reviews. The single major area of emphasis is on studies employing electrophysiological recordings of neural activity correlated with the application of diverse chemical stimuli. There is limited consideration of the role of the chemical senses in the functioning animal.

The book has many of the characteristics of a scientific journal that lacks a precise editorial policy. There is no introduction except for a two-page salutatory message by Zotterman, and this is followed without interruption by the papers. Some of the authors acknowledge that their papers have received prior publication; however, many of the contributions constitute first publication of original work. In this category is Oakley's report on cross-regenerated taste nerves. In the rat, the relative responsiveness of the taste receptor cells to different chemicals is determined by inherent properties of the tissues from which the cells are formed rather than by the taste fibers (the chorda tympani and the glossopharyngeal nerve) which innervate them.

Since there is no index and the subjects, species, and techniques covered are numerous and diverse, specific information is not easily located even by those generally familiar with the field. In any event, the price may deter the casual student. For the specialist, the symposium on olfaction and taste was an important forum for the exchange of ideas and developments, and the encyclopedic nature of the proceedings volume makes it an essential reference.

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