

Book Review

Chemistry of Drug Metabolism. By WILLIAM H. FISHMAN, Tufts University School of Medicine and New England Center Hospital, Boston, Massachusetts. xvii and 235 pages, 15 × 23 cm. Charles C Thomas, Publisher, Springfield, Illinois. 1961.

Foremost in the understanding of the biological action of chemicals is a knowledge of their metabolic fate. Compounds which are metabolized too fast may never reach their site of action and thus be "inactive." If they are metabolized too slowly, they accumulate and may cause immediate or delayed toxic manifestations. The present volume fills a need of long standing to bring under one cover the principal metabolic reactions which well-studied organic compounds and drugs undergo. Among the random organic chemicals reported are simple substances representative of important classes of compounds whose metabolic behavior sheds light on more complex systems in which the parent structures are found. Sixteen drugs, representing major interesting types, are discussed next. This factual description is followed by 30 pages of a discussion of biochemical mechanisms of drug metabolism (hydroxylation, dehydrogenation, dealkylation, deamination, deacetylation, hydrolysis and reduction) and metabolic conjugations, excluding glucuronic acid conjugation. These chapters form perhaps the most valuable part of the book since they enable the investigator to make certain predictions about the probable fate of new drugs, and familiarize him with the literature and methodology of major routes of biochemical metabolic pathways. The concluding 55 pages of the text are devoted principally to glucuronic acid conjugation, the chemistry of β -glucuronidase and the effect of this enzyme on drugs. The author may have gone overboard in his enthusiasm for this topic by allotting it one-third of the total space in this volume. However, a discussion of metabolic conjugation, including that with ascorbic acid, as a hydrogen replacement reaction brings this part of the subject into a more adequate theoretical perspective. A particularly well-arranged bibliography, excellent paper and printing add to the value of this timely and stimulating book.

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