

decarboxylation, enolization, aldol condensation, hydration, dehydration, ester and amide hydrolysis, and oxidation-reduction. A nice coverage of the chemistry of pyridine nucleotides, flavins, and phosphate esters is also included. In the third section of the book on "active site" of enzymes, the author defines "active site" and discusses the nature of enzymic catalysis and the ways in which the "active site" can be elucidated.

In many cases support for postulated mechanism of biochemical reactions are based on similar organic reactions. This approach leads to many useful and clarifying correlations. The author has attempted to systematize the various types of reactions by use of symbols (p. 61), but the writer is of the opinion that this attempt falls short of the mark and is superfluous. A major aim of the book is to explain biochemical reactions by the established principles of physical-organic chemistry. In this attempt the author has done a good job. The chapter dealing with the chemistry of organic phosphate esters is especially valuable since the organic phosphate ester bond is one of the most abundant and important type of chemical bonds in molecules found in living cells.

This book should be useful to organic chemists who are interested in biochemistry and to biochemists who want to apply modern organic chemistry to understand biochemical reactions. Hence, it may play a role in bridging the gap between biochemistry and organic chemistry. Organic chemists unfamiliar with biology, general biochemistry, and the properties of enzymes will not get the full benefit of this book any more than a biologist who has not had organic and physical chemistry can get full benefit from reading a text dealing only with mechanisms of reactions. The author has written this book at the level of the second-year graduate student in chemistry. The book may thus serve as a valuable supplementary text for a graduate course in biochemistry. It should also be appealing to departments of organic chemistry that desire to include this aspect of biochemistry in their curriculum.

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