

# Series Editor's Foreword

Modern organic chemistry owes its existence to the fascination chemists have had, and continue to have, with natural products: their isolation, their synthesis, and above all the elucidation of their biosynthesis and the control elements therein have motivated many generations.

Oxford Chemistry Primers have been designed to provide concise introductions relevant to all students of chemistry and contain only the essential material that would be covered in an 8–10 lecture course. In this twentieth Primer on chemical aspects of biosynthesis, John Mann provides an enthusiastic account of this central area of organic chemistry that is guaranteed to stimulate apprentice and master chemist alike.

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## Preface

Human cultures have always been fascinated by natural products. They extracted them from plants, animals, and lesser organisms, and then used them in crude form for the treatment of disease, as poisons, and as euphorants and stimulants. During the nineteenth century and most of the present one, structural and synthetic studies have been the main preoccupation of chemists, and thousands of natural products have been identified and synthesized.

The availability of the radioisotopes  $^{14}\text{C}$  and tritium at the end of World War II allowed biosynthetic investigations to commence, and during the past 50 years the elucidation of the pathways to the major classes of natural products—polyketides, shikimate metabolites, isoprenoids, and alkaloids—has been achieved. This book describes the most important results of these endeavours with an emphasis on the chemistry involved in the biosynthetic pathways. The pharmacological, toxicological, and ecological significance of the compounds is also highlighted, since these properties underpin the human use of natural products and their involvement in chemical communication between organisms.

The book is based upon a course of 15 lectures given to the Honours Chemists at the University of Western Australia and subsequently given (in an abbreviated form) to the students at Reading. I thank Dieter Wege and Mel Sargent for inviting me to UWA as part of their Visiting Lecturer Programme, and for making the visit both memorable and productive. Two superb biosynthetic investigators, Jim Hanson and Tom Simpson, read all or part (respectively) of the manuscript, and their comments and criticisms were invaluable. But my main thanks must be reserved for Mike Harling who drew almost all of the structures. Without his expert assistance the project would have taken twice as long to complete. Finally, I should like to dedicate the book to Derek Banthorpe, my Ph.D. supervisor, who excited my interest in natural products more than a quarter century ago.

J.M.