

The Biosynthesis of Secondary Metabolites

by R. B. Herbert

Chapman and Hall; London, New York, 1981

x + 178 pages. £6.50 (paperback)

This book is an excellent introduction for the advanced undergraduate or beginning research worker in the field of secondary metabolism. The author succeeds, in remarkably few pages, in giving the reader a fairly full and up-to-date picture of the field. Each chapter contains an adequately sized bibliography to enable the reader to take individual points further. I particularly liked the emphasis on discussion of the many experiments done to prove the pathways rather than presenting these pathways as outlines.

The book begins with two excellent introductory chapters. In one of these, general biosynthetic reactions and concepts of chirality and prochirality (including chiral methyl) are dealt with. The second of these chapters discusses techniques used to conduct biosynthetic experiments. These chapters give an excellent background for the remainder of the book in which the various pathways are discussed in detail. As a minor complaint, I felt that a little more outlined primary metabolism might have been included in this introductory section. This would have avoided problems such as the explanation of the scrambling of the

label in [2-¹⁴C]acetate *via* the citrate cycle being left to further reading.

The main part of the book is divided into chapters on polyketides; terpenes and steroids; shikimic acid-derived compounds; alkaloids; and microbial metabolites containing nitrogen. This last chapter covers such compounds as mitomycins and ansamycins, cytochalasins, nybomycin, prodiginines and β -lactams. Compounds of mixed biosynthesis are included in the most appropriate chapter rather than being singled out for special attention. Most major metabolites are covered by the book and the pathways are discussed in detail with excellent attention to the stereochemical features and underlying chemistry of the reactions in these pathways.

I liked the book and feel it to be the best introduction to the subject of *Secondary Metabolism* at present available. It should certainly replace the book by J. Mann, being more detailed and up-to-date and providing the bibliography so necessary in a book of this level. This was a major omission in the earlier text.

D. W. Young

Of Oxygen, Fuels and Living Matter, Part 1

Evolving Life Sciences, volume 1

Edited by G. Semenza

Wiley; Brisbane, Chichester, New York, Singapore, Toronto, 1981

xii + 350 pages. £29.50

Biochemistry has a relatively recent history: how recent is not always appreciated (try asking a group of students to guess when the Krebs cycle, or fatty acid oxidation, or oxidative phosphorylation were elucidated!). One fortunate consequence of this is that many of the scientists responsible for fundamental discoveries are still available to explain how they were made. The series 'Evolving Life Sciences' is designed

to present such explanations and volume 1 is devoted to bioenergetics. There are chapters by Straub, Boyer, Mitchell, Hartree (writing about Keilin) and Racker, each of whom writes freely about their early work and life. Each chapter is followed by a selection of the author's early publications, considered by him to be the most significant.

I found the book fascinating. I learned from

Hartree that the resistance of journal editors to new ideas is by no means new (early reports of the discovery of cytochromes were dismissed as artefacts), a view confirmed by Boyer (p. 232). Racker assures us that he did a better job at reconstituting oxidative phosphorylation than he did at rebuilding clocks and watches (p. 265). The problems of biochemical discovery in the 1930's were brought home vividly by Straub, who points out that spectrophotometers, ion-exchange resins, ultracentrifuges, electron micro-

scopes, gel electrophoresis, radioactive tracers and even cold rooms were not available, nor was a commercial supply of pure biochemical reagents. We are indeed lucky today!

I would highly recommend this book. It is well presented and not exorbitantly priced by today's standards. My only reservation is that with present cut-backs in library budgets such books are unlikely to be purchased since they are not 'essential'.

B. Halliwell

Oxygen and Oxy-Radicals in Chemistry and Biology

Edited by M. A. J. Rodgers and E. L. Powers

Academic Press; London, New York, San Francisco, Sydney, Toronto, 1981

xxx + 808 pages. £41.00

This book reports the proceedings of an international conference on oxygen and oxy-radicals held at the University of Texas, Austin, in May 1980. It has appeared reasonably quickly whilst avoiding the ugliness often associated with camera-ready presentation.

Like most conference proceedings, many of the papers report results that either have already been published in scientific journals, will shortly be published or will not survive refereeing! Some authors took the trouble to place their work in a broader context, whereas others did not. The book is still valuable however, principally because the discussions were recorded, edited and finally presented in a clear but

non-verbose form that captures the spirit of the meeting and reflects great credit on the editors. I was especially pleased to see the Fee/Fridovich discussions in print at last, since Fee's arguments have been presented without rebuttal in a number of other publications recently.

Most of the papers are chemical rather than biological, and so the title of the book is a little misleading. Nevertheless, I would recommend it as a good review of the chemical and *some* biological aspects of oxygen radical reactions. Who will buy it at £41.00 I am not sure. Even libraries are reacting against extortionate pricing in these times of financial stress.

B. Halliwell