

Preface

My purpose in writing this book was not to produce a comprehensive textbook of human biochemistry; there are numerous excellent textbooks that meet that need. The impetus for writing this book was to present aspects of metabolism within an appropriate physiological context. Indeed the original working title for the project was a 'hitch-hiker's guide to metabolism', with a focus on important processes, integration and control aspects without delving too deeply into chemical mechanisms. Too often, students perceive learning biochemical pathways to be 'difficult' or 'boring', largely because they are presented with a sequence of named intermediates and enzymes which are to be learnt by heart. In fact, metabolism is neither difficult nor boring, if it is approached in the right way. This book aims to present a 'right way' and so make learning and, more importantly, understanding as easy as possible. To the reader, I say this: imagine you are about to take up a new sport or you may simply want to be a spectator. The excitement of the competition may in itself be adequate for you to derive some enjoyment but to fully appreciate the sport, you will need to learn the rules or laws of the game first. Similarly, taking time and trouble to learn the rules of metabolism and learning to recognize themes will require some intellectual application. Once mastered, appreciation of the beautiful, logical simplicity of intermediary metabolism will enhance your understanding.

Whilst it is inconceivable that any text on biochemistry could be devoid of chemistry, this book is aimed at student biologists for whom biochemistry is a component part, but not the principal part, of their studies, so word equations have been used to illustrate reactions wherever possible and chemical structures shown only where necessary. The student groups who will find *Essential Physiological Biochemistry* valuable are those following undergraduate courses in physiology, nutrition, sports science and biomedical science. This text will also act as useful primer and quick reference for medicine or for postgraduates who need a revision guide.

The chapters are arranged into two distinct sections, the first dealing with basic concepts of metabolism and its control whilst the second focuses on selected tissues, illustrating how biochemistry underpins the physiological activities of certain tissues and systems. Where pathways occur in two or more organs of the body, details are given in only one chapter with cross-referencing to other relevant sections. Decisions to describe common pathways in one chapter rather than another were pragmatic ones and doubtless some would argue, not entirely appropriate.

If, having read this text, students feel that biochemistry is accessible rather than intimidating; if they become aware that metabolism is flexible, integrated and 'logical' rather than a collection of apparently disparate reactions and pathways which must be memorized, and if they acquire even a small sense of wonderment and awe about the subtlety that the subject holds, the effort of writing the book will have been justified.

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Stephen Reed