As an undergraduate in search of a definitive text for my introductory biochemistry courses, I had no choice but to acquire the third edition of this book, since Dr. Stryer was not only an instructor for several of my classes, but his text was also the required text for the most popular biology course! But even if I had not been pressured to acquire the text, I would have sold all my other books in order to get this one alone. I still recall being astounded by the impressive and eclectic range of ideas in the book, which encompasses not only biochemistry but also illustrative thoughts and asides from literature, art, and music. How many biochemistry texts have in their indexes references to Shakespeare, Ecclesiastes, J.S. Bach (unfortunately missing in the newest edition) and Leonardo DaVinci, or pictures of Greek amphorae juxtaposed with molecular models and organic chemistry diagrams? If one ever had the misfortune to be stranded on a deserted island with one book, this would be a fine choice—what is more, the brightly colored red and gold cover would certainly make a useful signal beacon to one’s rescuers.

The detail, clarity and rigor of writing in this text surpasses that found in any other book I have ever seen, and furthermore, the book is downright entertaining if one pays attention to the interesting anecdotes and metaphors. The new edition has been extensively reorganized and complemented with a series of computer-generated molecular models in order to better demonstrate the nuances of structural biology. Of course, a good amount of information (with accompanying references) has been added to cover the seven years since the last revision. Readers of past editions are sure to find much that is new in all parts of the book; indeed, the organizational scheme has been changed so that most of the material on proteins and on nucleic acids is in self-contained chapters of the book, rather than spread around throughout. One hopes that future efforts will continue on the part of Dr. Stryer until he achieves Tai T’ung’s goal of the “perfect book.”

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BIOCHEMISTRY, 2nd Edition. By Donald Voet and Judith Voet. New York, John Wiley & Sons, Inc., 1995. 1,361 pp. $76.95.

Biochemistry, by Donald Voet and Judith Voet, is a comprehensive and detailed text covering the subject of biochemistry with both breadth and depth. The second edition was apparently published in response to advances in this field since the publication of the first edition in 1990. The foreword by Irving Geis presents this edition as “a valuable guide to the science of molecular medicine for the twenty-first century,” and the prologue by the authors, who are professors at the University of Pennsylvania and Swarthmore College, indicates that the intended audiences are primarily undergraduate and graduate (including medical) students.

The current reviewer, and a professor of biochemistry consulted for this review, consider this text to be of greatest potential value to scientists or graduate students in the basic sciences (e.g., biochemistry, organic chemistry and biology) who have some background in biochemistry. It would be less appropriate for undergraduate or medical students who may be approaching the subject for the first time. This book is an impressive compilation of knowledge, so much so, that we might suggest it as a reference for the former group, but it is long, dense and crowded on each page. The length, 1,361 pages, makes it 272 pages longer than another (more widely used) biochemistry textbook, Biochemistry by Lubert Stryer, which also has much less text per page due to layout and type. Another problem with the Voet and Voet book is the very heterogeneous profusion of figures and pictures, which varied in quality and relevance, and often served no evident purpose but
an aesthetic one. Stryer's diagrams, by way of contrast, provide more valuable information and are of a more consistent quality while being clear and easily interpretable. In addition, the price of $76.95 is higher than other comparable biochemistry texts (for example, Stryer's 4th Edition is $69.95), although the additional cost might be warranted for those requiring both detail and comprehensiveness.

The book is organized into five logical sections: "Introduction," "Biomolecules," "Mechanisms of Enzyme Action," "Metabolism" and "Expression and Transmission of Genetic Information." The introductory section could be omitted since most of the material in these three chapters will be review for most readers. The Metabolism section provides the meat-and-potatoes biochemistry that such textbooks are primarily about, so it is here that the question of style, depth, readability, diagrams of pathways and use of additional graphics is most significant. Metabolic pathways are presented in diagrams that are complex and often difficult to follow, complete with details of the electrochemistry of reaction mechanisms (i.e., the movement of electrons and the attack of one portion of a molecule on another in various steps for many of the pathways). While this might be interesting to those specializing in a related field, it is not very helpful for learning the pathways themselves. The dense, two-column format of the text was particularly troublesome in this section. One byproduct of the comprehensive scope of this text is that some of the chapters are in an awkward location; for example, a chapter on "Techniques of Protein Purification" seems to have been somewhat arbitrarily inserted between the chapters on "Amino Acids" and "Covalent Structures of Proteins," in that this topic does not fit well with the surrounding chapters although it does provide useful information. Given the large proportion of potential readers related to or interested in the medical field, we found there to be relatively few examples of the application of biochemistry to medicine, and those that we found were often relegated towards the ends of chapters.

Each chapter ends with a brief, well-written summary and with a number of problems, the solutions to which can be found in the companion Solutions Manual to Accompany Biochemistry by the same authors. The index, like the rest of the book, is detailed, but it is not without problems. For example, only one page reference is given for the steroid hormone aldosterone, although it appears in an equally important context in another part of the text. There is no glossary. In summary, Biochemistry is probably best suited as a reference text for people requiring a comprehensive resource for the basic science of biochemistry, but it would not be my choice for an undergraduate or medical school text, where there is a need to make a vast and complicated subject accessible and relevant to the needs and developing intellectual repertoire of the student new to the subject.

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NEUROBIOLOGY, 3rd Edition. By Gordon Shepherd. Oxford, Oxford University Press, 1994. 816 pp. $ 65.00.

This exquisitely written and highly successful elementary textbook of neurobiology is now in its third edition, with a number of notable changes and revisions. Although readers of previous editions will recognize much that is familiar, the coverage in this latest edition is updated and more extensive in several areas that are especially prominent in current research, such as neural development, plasticity and molecular mechanisms of neural cells. An accompanying volume, Electrophysiology of the Neuron, with an interactive computer disk, allows students to experiment on computer-simulated cells by varying