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Donald Cairns, **Essentials of Pharmaceutical Chemistry**

London: Pharmaceutical Press 2000, 192 pages
paperback. £19.95
ISBN 085369 437 0

Reviewed by Dr S. Hussain, Queen's University, Belfast

The importance of the basic chemistry knowledge for both the pharmacists and those working within the pharmaceutical industry or research establishments cannot be overstated. Physical chemistry books can be very complex for beginners with a mass of information on basic chemistry while sometimes not showing exactly how it relates to pharmacy and drugs. This book gives an important starting point in the understanding of basic pharmaceutical chemistry. The book is divided into six chapters, each dealing with different aspects of drug chemistry. The first chapter describes basic principles of acids, bases and buffers, giving the biological significance to the chemistry. It shows the importance of pH and pKa. In the second chapter partition coeffi cients are explained in the context of a drug molecule, explaining how these affect drug absorption, distribution and elimination. The chapter on volumetric analysis explains concentration, molarities, titrations and assays in simple terms. The fourth chapter gives a general overview on analysis of drug molecules explaining the basic spectroscopy techniques used on a daily basis in the pharmaceutical industry. In the next chapter some understanding of predicting drug stability from the chemical structure is given, explaining how reactive molecules form the biologically active compounds and can undergo complex chemical reactions leading to their decomposition. The rate equations and reaction kinetics are explained in terms of drug stability and shelf life in the final chapter. In most chapters particular attention is paid to basic chemistry and physiological changes in terms of the drug molecules.

As a chemistry textbook it is without doubt easy to read. It is informative and covers all areas of basic pharmaceutical chemistry.

With many exercises and tutorials with solutions given at the end, it allows readers to test their understanding of the topics covered in the book. It can serve as a useful textbook for university students studying pharmacy or pharmacology. This book will also be helpful to pharmaceutical chemists working in industry and research institutes wishing to brush up on their basic chemistry knowledge.

The author has targeted this book to pharmacy students to give a basic introduction to the principles of chemistry for pharmacology, drug formulation and drug design. To this end he has succeeded.

Dr Samana Hussain is currently a Postdoctoral Research Fellow in the School of Pharmacy, Queen's University of Belfast where she is working on thermal analysis of polymers.

Stephen M. Stahl, **Essential Psychopharmacology** Neuroscientific Basis and Practical Applications. Second Edition.

Cambridge: Cambridge University Press 2000,
601 pages paperback. £42.95
ISBN 0 521 64615 4

Reviewed by Professor Peter Redfern, University of Bath, UK

Like many others, this book has developed out of the author's lecturing experiences. It is unique in my experience in its didactic approach and in the relationship between conventional text and diagrams.

In the text the author sets out to present the fundamentals of psychopharmacology in a simplified and readily readable form. In this he is generally successful.

In something over 500 tightly packed pages we are presented with a comprehensive coverage of the basic concepts of neurotransmission. Receptors and enzymes as targets for drug action are followed by consideration of all the major areas of psychiatric disease and their pharmacological treatment. The emphasis is on drug action at the cellular/receptor level. Little attempt is made to provide a meaningful neuroanatomical context.

The material is firmly directed at the undergraduate student and the primary aim is to enable the reader to pass exams.

As the author's foreword states "the text is purposely written at a conceptual level rather than a pragmatic level and includes ideas that are implications and rules, while sacrificing precision and discussion of exceptions to rules. Thus this is not a text for the sophisticated subspecialist in psychopharmacology".

The material is organised in accordance with the principles of programmed learning, providing repetition and inviting interaction. This latter element is reinforced by the inclusion of a section of assessments based on units of continuing medical education (CME) accredited by the US Accreditation Council for Continuing Medical Education for "up to 54 hours of category 1 credits".

Unfortunately for the UK undergraduate student, no answers are provided, thus reducing the immediate effectiveness of this exercise. I doubt whether many UK students will take the opportunity to post off their completed answers sheets with payment of $10 per category – potentially a total of $540 unless discounted by 25% if claiming all 54 credits!

The other unusual feature of this book is that the text is liberally laced with diagrams and cartoons. Indeed it is a matter of apparent pride to the author that "virtually everything in the text is covered in the graphics". The novice is urged to ignore the text and study only the cartoons and their legends. Then, as understanding dawns, the emboldened student can grapple with the text, finally returning to the diagrams as a quick revision aid.

One cannot fault the approach, but to my – perhaps too sophisticated (?) – eye, the cartoons are too often over-simplistic and obtrusive. They certainly did nothing to enhance my reading of the text. The "norepinephrine transporter" is depicted as a series of circling wagons (geddit!). The mere mention of urinary retention as a possible side-effect of antidepressant therapy demands a cartoon of knees locked tightly together.

Free radicals are depicted as refugees from the flower-power 60's complete with flares and placards, scavenged, when appropriate by Pacmen and so on … and on … . Elegant and beautiful they are not! They are brash, simplistic and in your face. I suspect many undergraduates will find them "cool"!

This is, I suppose a matter of taste, and I can only state that these cartoons are not to mine. To my eye the draughtsmanship is undistinguished. They lack the wit and invention of the successful cartoon. They are too often predictable and plodding, more likely to evince a groan than a smile.

My reservations about the text concern style rather than content. In the main, the subject matter is well covered. The text is generally accurate and probably as up-to date as any conventionally produced paper based text can be. For this reader, at least, this was offset by the unrelenting style. In searching for the telling image, the striking analogy, no stone is left unturned, no phrase uncoined, no sleeping dog left to lie, no dead horse unflogged. There is a fine line between the colourful and the inaccurate or misleading, between simple and simplistic. I fear the author too often strays across that line. To give an example, in an early chapter on neurotransmission we are told that "neurons communicate by one neuron hurling a chemical messenger at the receptor of a second neuron". Why "hurling"? A colourful image but it gives quite the wrong impression. This is itself a small point but is illustrative of what I found irritatingly sloppy style. Perhaps this betrays too close an adherence to lecture material. The kind of oral shorthand we all resort to is less acceptable in cold print. There is a tendency to refer to for instance "5HT1A antagonism", rather than to antagonism at 5-HT_{1A} receptors; to "alpha 1 antagonists" rather than to α_1-adrenoreceptor antagonists.

I am sure many students, more laid back and cool than I, will find this book attractive. I am sure it will help them to pass exams. My reservation is that it will do little to inspire them, to tempt them to go further into the unendingly fascinating and challenging science and practice of psychopharmacology.

Professor Peter Redfern is a Professor in CNS Pharmacology, and is the Head of the Department of Pharmacy and Pharmacology at the University of Bath, England.