

BOOK REVIEWS

Jonathan Hadgraft and Richard H. Guy (Eds.), *Transdermal Drug Delivery: Development Issues and Research Initiatives*, Marcel Dekker, New York, 1989, 311 pp., \$99.75 (North America), \$119.50 (outside).

This multi-author book, volume 35 in the series *Drugs and the Pharmaceutical Sciences* (Series Editor, James Swarbrick), numbers 311 pages (not counting the index) and is divided into 12 chapters. It opens with a concise but outstanding, informative chapter by Wertz and Downing on the anatomical and physiological features of the stratum corneum. The tissue is described in terms of its constituent phases, cell envelope, intracellular keratin and intercellular lipid. The chemistry of these phases is outlined well and the processes of formation of the tissue are set forth. The chapter is well-referenced and interpretive. It alone justifies owning the book.

The second chapter is another excellent work, in this case by Potts. It deals with physical characterization of the stratum corneum. Of particular note, Potts describes the tools that have been used to explore the structure of the stratum corneum and gives a lucid, well-referenced explanation of what has been learned about the tissue using them. The tools of membrane biophysics which are specifically discussed are thermal analysis, infrared analysis and X-ray diffraction.

The third chapter by Guy and Hadgraft discusses the selection of drugs for transdermal delivery. The physicochemical properties of compounds which favor their permeation across skin are reviewed. Selection criteria are put in a context of a pharmacokinetic model.

Then follows a series of chapters dealing with much more narrowly defined topics. Cutaneous side effects, drug metabolism in the skin, microbial metabolism at the surface of the skin, transdermal pharmacokinetics, drug delivery to new-

borns, in vitro evaluation of transdermals, penetration enhancement, iontophoresis and materials science of transdermals are all described. All these chapters are informative, although some lack the interpretive elements which make the opening trio so enjoyable. Still, many of the discussions stand out when compared to similar reviews elsewhere in the literature. Among these, the pharmacokinetic viewpoint of Chong and Fung is provocative and worthy of study. They present a strategy for dosing nitroglycerine which is a radical departure from the conventional view. Walter's chapter on enhancement is unusually well balanced in its view. Burnette writes about iontophoresis with objectivity and in ways that everyone can understand and appreciate. Baker and Heller make a nice contribution with their chapter on the materials of construction of transdermal patches.

In summary, this book is one of the best organized and balanced books available dealing with transdermal concepts. Its pages contain one excellent review after another. It is an uncommonly good text for a multi-author book and the editors are to be congratulated. All of the chapters seem to be thoroughly referenced, placing the heart of the scientific literature central to the issues discussed at easy reach. Consequently, the book belongs in every scientific library, academic and corporate. Anyone whose research touches on topical delivery *in general* and transdermal delivery *in particular* should consider having a personal copy of this book at arm's reach.

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