lengthy listing of various occupations and the irritants one may be exposed to in those occupations. Such a compilation can be helpful to a clinician trying to identify a causative agent.

Household products, cosmetics, and fragrances are just a few of the subjects covered in the discussion of topical products. The authors include a short description of tests used to verify irritant reactions, which is redundant in light of the fact that a review of these tests provides the basis for most of the third section of the book.

Both *in vitro* and *in vivo* tests to evaluate the ability of a chemical compound to cause irritation are discussed in detail. This information should be of interest to the clinician and researcher alike. Presented is a detailed summary of test procedures (patch tests, provocative use tests, and open tests), what each test entails, variations of these tests, and how results are read.

What isn't included is information on how to prepare suspected irritant material for testing. The author does, however, provide references to serve as sources of information for testing. If their goal, as cited in the preface, is for this work to be a source of information to both clinicians and researchers, the authors should provide guidelines for vehicles and concentrations to test the irritants that are mentioned throughout the book. Also, a more extensive index should be furnished. The abbreviated index for this book makes it difficult to locate a particular subject of interest. If a specific irritant is being searched, it is difficult to determine if it is described in the book or not.

Overall, this book contains a substantial amount of pertinent and useful information, though the presentation is at times redundant. To their credit, the author's references are generally current. Also, the editors and authors chosen are generally well recognized in their field as qualified in this subject matter. Expectations of an all inclusive discussion on the topic of irritant contact dermatitis in a series volume may be unrealistic, yet its lack of some of the important qualities found in more comprehensive texts is incogitable.

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Modern Pharmaceutics. Edited by Gilbert S. Banker and Christopher T. Rhodes. Marcel Dekker, New York, 1990, 902 pp., ISBN 0-8247-7499-X, $125.00.

This book is one of the few that is able to cover most of the pharmaceutics topics in one volume. In this second edition, the contents are revised and expanded. The format and arrangement of the topics are similar to those of the first edition, with a few additional chapters. In the first edition solid oral dosage forms were covered in one single chapter. In the new edition, the same topic is now dealt with in more detail, and the subject is subdivided into three different chapters: separating tablets, capsules, and specialty tablets. A similar approach was taken with the controlled-release product section. In the first edition these products were covered in one chapter entitled, "Depot Medication." The second edition deals with the same topic but in greater detail, as two chapters, 16 and 17, namely, "Sustained and Controlled Release Delivery Systems" and Site Specific Drug Delivery Systems."

Chapter 1 is an introduction to the concepts of pharmaceutics and drug products. In Chapter 2, the general principles of drug absorption and the factors governing drug absorption are reviewed with updated references. Chapter 4 also deals with drug absorption and bioavailability, but from the dissolution point of view. Pharmacokinetics and Drug Stability are given in a brief, but well-organized form, in Chapters 3 and 6, respectively. The section of Chapter 5 dealing with the Rate of Administration and Distribution on Drug Action is almost the same as in the previous edition. However, the "Preformulation" aspects dealt with in Chapter 7 are completely rewritten by a new author.

The first seven chapters of the book, as explained above, give general concepts and principles and prepare the reader to understand the actual pharmaceutical dosage forms that are covered in the following eight chapters (Chapters 8–15). In these chapters, topical, disperse, solid, parenteral, ophthalmic, and aerosol pharmaceutical systems are discussed in great detail, each having its own chapter. In all cases the formulation, manufacturing, and application of the dosage forms are covered. Packaging of all different dosage forms are summarized in one separate chapter, Chapter 18. The important information on the regulatory aspects of pharmaceutical formulation and processing is covered in Chapters 20 and 21 in a brief, but sufficient manner. The recent developments in biotechnology and their impact on pharmaceutics are only briefly touched in the last chapter. This topic needs to be covered in greater detail in the next edition. Each chapter has its own reference list. In some chapters the titles of articles are given in the references, whereas the majority of the chapters lack this information. The second edition is printed in larger type, which makes it easier to read, and some of the figures are enlarged. An adequate subject index is included at the end of the book.

The book is recommended as a pharmaceutics textbook for colleges of pharmacy for B.S., Pharm.D., and graduate students. It should also prove valuable as an information source for industrial pharmaceutical scientists.

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Rational Therapeutics: A Clinical Pharmacologic Guide for the Health Professional. Edited by Roger L. Williams, D. Craig Brater, and Joyce Mordenti. Marcel Dekker, New York, 1990, xiii + 787 pp., ISBN 0-8247-7946-0, $150.00.

The purpose of this textbook is to provide clinical pharmacology information of a selected group of drugs and dis-

macology information of a selected group of drugs and disease states in a clinically useful manner. The editors and authors have focused on clinical conditions and drugs commonly encountered in the practice of medicine. This book is organized into three sections: (i) designing a dosing regimen—pharmacokinetic and pharmacodynamic principles (Chapters 1–4); (ii) factors influencing design and maintenance of a dosing regimen (Chapters 5–10); and (iii) specific drug groups—special considerations (Chapters 11–25). Each chapter is adequately referenced to the primary literature.

The first four chapters provide a brief overview on pharmacokinetics, pharmacodynamics, and dosage regimen design and three examples of dosage calculations. These chapters provide essential concepts and basic principles for dosage regimen design based on clinical pharmacokinetic and pharmacodynamic considerations.

In section two, there are four chapters that summarize the influences of hepatic, renal, pulmonary, and cardiac disease on the pharmacokinetics of therapeutic agents. Also included are two chapters describing the special considerations of the elderly and drug interactions on the clinical pharmacology of drug therapy. These chapters provide essential background information to further understand the "factors that influence pharmacokinetics of specific agents" in the next section.

The final section consists of 15 chapters that review general clinical pharmacology, factors affecting the pharmacokinetics of specific agents, and dosing recommendations. The drug categories included are analgesics; sedatives, hypnotics, and minor tranquilizers; diuretics; cardiovascular agents; antihypertensive agents; antibiotics; anticoagulants; anticonvulsants; anticancer drugs; drug therapy for gastrointestinal and liver diseases; antidiabetic agents; and lipid-lowering agents. Each chapter includes tables which provide concise summaries of pharmacokinetic parameters and dosing recommendations.

The book provides concise, practical, and relevant information on the clinical pharmacologic approach to drug dosage regimens. The text will be useful to the majority of medical practitioners who wish to incorporate rationale pharmacology into the routine clinical management of adult patients. It should also be a useful reference for pharmacy and medical students that have a good background in general pharmacology.

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Letters to the Editor

In the interesting paper on "Topical Irritation of the Gastrointestinal Tract" by John W. Fara and Robert E. Myrback (*Pharm. Res.* 7, 616, 1990), I was surprised to see that in the Irritation Index, presented in Table III, sodium salicylate rated marginally better than aspirin. This would negate the advantage of aspirin, which was developed as a prodrug to overcome the well-known, heavy stomach irritation of salicyclic acid.

Almost 100 years ago the German physiologist Dreser (*Plueger's Archiv der Generalen Physiologie,* 76, 306, 1899) compared the irritation caused by aspirin and salicylic acid, respectively, in another model. He applied solutions of both to the exposed tailfin of a small fish. Aspirin caused no etching, while salicylic acid caused severe etching of the tailfin. This effect could be ascribed to neither pH nor concentration of alkali salts. An English translation of the pertinent passage of the paper by Dreser can be found in *Pharmacopeial Forum;* Vol. 14, p. 4162, (1988).

Fara and Myrback wisely state that "the correlation between the rabbit model and the human gastrointestinal mucosa needs to be studied further. . . ."

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Dr. Florey has commented that sodium salicylate was found to be marginally better than aspirin in our recently published article (*Pharmaceutical Research,* Vol. 7, p. 616, 1990). However, when comparable doses of each are studied (Table II), there was essentially no difference in irritation values (3.1 ± 0.3 and 3.6 ± 0.5, respectively). Interestingly, these results are inconsistent with the general trend we observed for nonsteroidal antiinflammatory drugs, that irritation potential increased as the solubility of the drug increased.

Although the rabbit colon model may not be a definitive method for ranking colonic irritation of compounds, we feel that the model is useful in identifying irritation potential early in dosage form development. And significantly, we found that many of the compounds with high irritation scores in Table II, including acetylsalicylic acid, are known gastrointestinal irritants in humans.

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