

## REVIEWS

**Principles of Pharmaceutical Accounting.** By FRANCIS A. MARIANO, EDWARD J. ZABLOSKI, and COLMAN M. HERMAN. Lea & Febiger, 600 Washington Square, Philadelphia, PA 19106. 1980. xi + 241 pp. 18 × 26 cm. Price \$19.50.

Undergraduate pharmacy students and practicing pharmacists are the intended audience for this book on accounting principles. The major advantage of this book is that it was designed specifically for this audience. It ignores the concepts relevant primarily to multinational manufacturing conglomerates which are found in standard accounting texts, while including topics such as reconciliation of bank statements and determining prescription dispensing costs.

Most of the book is devoted to financial accounting (bookkeeping or the accumulation and summarization of financial data) rather than managerial accounting (the use of financial data to make management decisions). This reviewer recognizes that it is difficult for students to learn to use data properly without some background in how the data were generated.

While tables and figures are abundant, the amount of actual textual material is sparse. Terms tend not to be defined. It is assumed that the reader knows what gross profit is or will figure it out from its use. Examples tend to be used in place of definitions ("Cash includes . . . ." "Inventory consists of items such as . . . ."). It is 150 pages after "cash" is introduced that the reader learns that a certificate of deposit is an investment, not cash. The reader never is told that a bottle of aspirin for resale to a patient is inventory, while if the aspirin is consumed in the pharmacy by employees with a headache, it is a supplies expense.

Conspicuously absent in the book is any mention of UCAS (Uniform Cost Accounting System for Pharmacy). Also lacking is any guidance on what the pharmacy owner should look for in selecting an accountant or what services can be provided by an accountant.

The review questions and exercises at the end of each chapter are helpful aids in reinforcing the concepts presented.

It is not a compliment to say that this book is long overdue. It reflects a concept of the pharmacist keeping his or her own books and being his or her own accountant rather than managing a practice in which annual sales may be in excess of a half-million dollars.

As the only text of its kind in print, individual faculty members should review this book for possible use by students. Managers of community pharmacy practice are more likely to find that, although it is considerably more expensive, UCAS will more effectively satisfy their needs.

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and why a certain charcoal may be more effective than other charcoals for adsorption of a specific chemical. Chapter 4 is devoted to a discussion of the five classical papers of A. H. Anderson, which were published between 1946 and 1948. These publications are important because they summarized many earlier studies on activated charcoal and reported the definitive studies of Anderson, which served as the basis for subsequent work by many investigators.

Chapter 5 discusses the antidotal aspects of activated charcoal, with commentaries on characteristics to be considered in the selection of the most suitable charcoal preparation for oral antidotal uses (e.g., acid-washed charcoal, pore-size distribution predominantly in the 20-Å range, high internal surface areas, and a fine powder as opposed to granules or tablets), dosages, effects of delayed administration, stability of the charcoal-drug complex in the GI tract, storage stability of activated charcoal suspension, safety of activated charcoal, fallacies and dangers of the so-called universal antidote, and the development of palatable formulations of activated charcoal suspension.

Chapter 6 reviews the results of *in vitro* and *in vivo* studies of the binding and antidotal potentials of activated charcoal. A great amount of previously published data is included. Chapter 7 describes investigations of other possible medical or diagnostic applications of activated charcoal. Most of these works were published in the 1930s and are mainly of historical interest, e.g., intravenous injection of activated charcoal for treatment of systemic infections. However, use of activated charcoal to bind bacterial toxins in certain GI infections appears rational, and the use of activated charcoal for hemoperfusion appears to be effective.

A few errors were obvious to the reviewer. On page 40, it is stated that the adsorption isotherm for strychnine nitrate (based on *in vitro* studies in human gastric contents) is presented in Fig. 4.8, but this figure is concerned with diethylbarbituric acid. On page 41, a statement is made in reference to Fig. 4.8 that a change in pH from 8.4 to 5.0 decreases charcoal adsorption of diethylbarbituric acid, whereas the reverse is shown in the figures. Also, the data presented in Fig. 4.3 and Table 5.7 are credited to the wrong authors. However, these errors do not detract from the usefulness of the book.

Probably very few references have escaped citation in this small volume. This book is a convenient source of information concerning the antidotal application of activated charcoal for management of drug overdose or poison ingestion and should be a useful reference for health professionals involved in the treatment of poisoning cases, poison control information centers, and people engaged in research.

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**Activated Charcoal: Antidotal and Other Medical Uses.** By DAVID O. COONEY. (Drugs and the Pharmaceutical Sciences, Vol. 9.) Dekker, 270 Madison Ave., New York, NY 10016. 1980. 160 pp. 15 × 23 cm. Price \$23.50.

This book provides a much needed review of the literature concerning the use of activated charcoal for the treatment of acute drug overdose or poison ingestion. The first chapter emphasizes the advantages of orally administered activated charcoal for the treatment of acute poison ingestion relative to other common emergency measures, such as induced emesis and gastric lavage. Chapter 2 points out the historical highlights of charcoal, indicating that the use of medicinal charcoal was recorded in an Egyptian papyrus in 1500 B.C., that a great variety of starting materials were used in its manufacture, and that the process of activation (which greatly increases the adsorbent capacity of charcoal) was not introduced until 1900.

Chapter 3 describes the manufacture, physicochemical properties, and adsorptive process of activated charcoal. Such knowledge is important for understanding the differences among various charcoal preparations

**Prescription Drugs in Short Supply.** By MICHAEL A. SCHWARTZ. (Drugs and the Pharmaceutical Sciences, Vol. 8.) Dekker, 270 Madison Ave., New York, NY 10016. 1980. 130 pp. 15 × 23 cm. Price \$17.50.

This interesting book documents, by case histories, the shortage of some vital drugs that occurred between 1973 and 1976. Among the major sources of documented information are Senatorial hearings, reports to the Drug Enforcement Administration, various symposia, and the *Federal Register*.

Shortages of five substances are discussed in detail: opium, quinidine, heparin, two injectable penicillins, and some large- and small-volume parenterals. Although no deaths are known to have resulted from the shortages, it is highly likely that there were cases in which optimum patient care was not possible because substitute drugs had to be used.

The shortages were caused by a number of factors which were different in most instances for each substance. The demand for codeine increased significantly, which contributed to the shortage of opium. This increased demand was attributed to: (a) increases in population, (b) aging of the population, (c) an increase in third-party payments for medication, and

(d) increased prescribing of codeine. Other factors contributing to the opium shortage were the ban on opium growing in Turkey and reduced production in India due to unfavorable weather conditions.

A Dutch cartel succeeded in gaining control of a significant portion of the world's supply of quinidine, which resulted in alleged shortages of this drug and subsequent price increases.

The heparin shortage resulted from increased demand and also from a short supply of the major raw material, the intestinal mucosa of the hog. This shortage occurred when the number of hogs being slaughtered was reduced.

The penicillin shortage was attributed to an 11-month shutdown of a major manufacturer's facilities for making the product.

The author points out that there is a lack of information concerning drug shortages and that no agency has the authority and responsibility to gather and apply such information. Such an agency, along with a national advisory group with representatives from the pharmaceutical industry, the health professions, and government, is recommended by the author as a means to prevent shortages of essential drugs.

This book is interesting reading for anyone associated with the health professions or the pharmaceutical industry. Most of us are unaware that shortages of vital drugs have occurred and can occur in the future.

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**Nuclear Medicine: Review Syllabus.** Edited by PETER T. KIRCHNER. Society of Nuclear Medicine, 475 Park Ave. S., New York, NY 10016. 1980. 619 pp. 15 × 23 cm. Price \$30.00.

This book is a product of over 50 contributors. It is an update of the major scientific and clinical advances that have occurred in nuclear medicine since the early 1970s. This volume is not presented as a textbook of nuclear medicine nor as an exposition of basic knowledge. In the preface, the senior editor states his hope that this book "will achieve its goal of assisting physicians in their efforts to maintain or reach clinical competence in the specialty of nuclear medicine."

The book offers an overview of 12 major areas in nuclear medicine. Chapters are included on radiopharmacology, instrumentation, radiation effects and radiation protection, cardiovascular, the central nervous system, endocrinology, gastroenterology, the genitourinary system, hematology-oncology, pulmonary, radioassay, and the skeletal system. The majority of the material is presented in a descriptive manner, with illustrations and tables kept to a minimum. With few exceptions, the text is well written, clear, and easy to follow. Difficulty may be encountered in attempting to locate a reference in a bibliography that was cited within the text.

The text contains a great amount of pertinent information beneficial to nuclear medicine physicians. This book is an excellent source of information for nuclear pharmacy practitioners and educators as well. Although not useful as an entry level textbook, it is of value as a library reference source in institutions with active research and educational programs in nuclear medicine or nuclear pharmacy.

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**Catalog of Teratogenic Agents, 3rd Ed.** Edited by THOMAS H. SHEPARD. Johns Hopkins University Press, Baltimore, MD 21218. 1980. 410 pp. 16 × 23.5 cm.

This reference text is essentially an alphabetized listing of known and suspected teratogenic agents that are believed to be involved in the development of congenital anomalies in experimental animals and humans. It is an updated version of previous editions, and the reader is made aware that yearly revisions probably will be forthcoming. Easy and quick re-

vision is made possible by the fact that the material has been collected in the usual way and then transferred to computer cards and finally to tape for storage. New material can be inserted at the proper places without totally revising the previously written material. Both positive and negative results and full bibliographic references are included in the discussion of each agent. In addition, there are adequate subject and author indexes.

The stated purpose of the book is to help link the available information on experimental teratogenic agents with malformations occurring in humans. It is clearly pointed out in the introductory material that this task is not easy and that it often is impossible for a variety of reasons.

The most outstanding contribution to the literature provided by this book is the tables of comparative time periods of embryonic and fetal development in humans and experimental animals. One can determine easily what organ or tissue is developing at any time in gestation and consequently predict which tissues may be affected should a suspected teratogen be present at that particular time.

Many obviously important references have been left out, a deficiency that the author admits may be the case. To remedy this problem, the author states that anyone wishing to add material or provide corrections for future editions should do so on the address form provided in the last pages of the text. Unfortunately, this form is not present.

Because this catalog contains information concerning congenital defects due to pharmaceuticals, chemicals, environmental pollutants, food additives, household products, and viruses, it is recommended as a reference source for anyone who has to answer questions concerning the teratogenic nature of the many agents included in these categories. Along with teratologists, obstetricians, pediatricians, geneticists, pharmacologists, and general practitioners would be particularly interested in this book.

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**British Pharmacopoeia 1980.** Her Majesty's Stationery Office, Atlantic House, Holborn Viaduct, London EC1P 1BN, England. 1980. 1196 pp. 22 × 31.5 cm. Price £60.

The 1980 *British Pharmacopoeia* provides standards for the quality of substances and preparations used in medicine and pharmacy which will become effective in the United Kingdom on December 1, 1980. The 1980 BP incorporates, in edited form, all of the relevant monographs and methods currently contained in the *European Pharmacopoeia*. It also presents, in updated form, a large number of monographs formerly contained in the *British Pharmaceutical Codex*.

The increase in the range of entries covered in the BP resulted in its expansion to two volumes. Volume I contains monographs of medicinal and pharmaceutical substances, including simple organic salts, complex synthetic chemicals, vegetable drugs, antibiotics, and hormones and vitamins. The standards are accompanied by information on their action, use, dose, solubility, storage, and labeling. Style changes in this edition include indication of the stereochemical configuration in structural formulas, where possible. SI units have been introduced where practicable, and an approximate equivalent in the more familiar cgs system is given in parentheses.

Volume II includes an extensive formulary section. It also features discussions of blood products, immunological products, radiopharmaceutical preparations, and surgical materials. The 24 appendixes in Volume II describe procedures and requirements that are necessary for interpretation of the standards. Among the subjects featured in the appendixes are reagents, spectroscopic and chromatographic analyses, determinations of physical properties, limit tests, disintegration tests for dosage forms, and biological and biochemical assays and tests for antibiotics, immunological products, hormones, blood and related products, and enzymes. Tests for sterility, microbial contamination, and efficacy of preservatives also are included. A 48-page index is provided at the end of Volume II.

The significant expansion of the *British Pharmacopoeia* since its previous (1973) edition enhances its value as a reference source.

*Staff Review*