

Radiological Assessment: Sources and Exposures. Richard E. Faw and J. Kenneth Shultis, editors, PTR Prentice-Hall, Englewood Cliffs, New Jersey, 681 pages, 1992, contact publisher for price.

This text is divided into 11 chapters which emphasize the nuclear engineering background of the editors. Thus, it is more suitable for the student of nuclear engineering rather than a nuclear pharmacy or nuclear technologist major. Nevertheless, the text provides valuable academic insight for all readers in three main areas: evaluation of radiation doses from external and internal sources; characterization of radiation sources and the dispersal of radioactive materials in the environment. The authors assume that the reader possesses an understanding of algebra, solid geometry and, for certain portions of the text, elementary calculus and differential equations. The methods stressed are ideally suited for small computer applications. Operational radiation safety and nuclear measurements are omitted because they are adequately treated with other texts. This allows for a more advanced treatment of the main topic of the text.

Besides the typical subject material (interactions, biological effects, natural, artificial and technologically-enhanced sources, shielding penetration, internal-external doses), there are several chapters which discuss among other things, atmospheric dispersion of radionuclides, dispersion of radionuclides in surface and ground water and environmental pathway modeling. Eight appendices are integrated with the text material.

Since the ICRP internal dose methodology has become the standard for establishment of radiation protection standards and recommendations, as well as the development of risk standards, its evaluation is emphasized over the MIRD approach.

This text is better suited for students in nuclear engineering. Students allied with nuclear medicine will find their understanding directly proportional to their mathematical ability.

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Practical Nuclear Medicine. E.L. Palmer, J.A. Scott and H.W. Strauss, W.B. Saunders, Philadelphia, 398 pages, 1992, \$73.50. The stated goal of this book is “. . . to meet the needs of the diagnostic radiology resident and first-year nuclear medicine fellow as well as the practicing radiologist seeking a brief review of current nuclear medicine.” A void in the nuclear medicine literature has existed because a book that could be recommended as an introductory textbook in nuclear medicine was not available. This book meets the stated goal and fills this void.

The book has two chapters devoted to basic sciences and eight chapters devoted to clinical applications. The uniformity of style used throughout all chapters facilitates the reading of the book. High quality figures are used appropriately to illustrate concepts or to demonstrate information present in the imaging studies. The chapters are all concisely written and have a minimum of redundancy. Even though the book contains only 398 pages, the major topics of importance in nuclear medicine are all addressed in at least an introductory manner. The book reflects

the experience of the authors and very few references are included. If the reader requires in-depth knowledge of a particular topic, he or she will need to obtain the information from a larger textbook devoted to nuclear medicine or from the scientific literature.

The first two chapters, “Radiation and Radionuclides” and “Instrumentation and Radiopharmaceuticals,” cover the basic sciences. Prior to reading the chapters, I thought they would not be able to provide all of the introductory information necessary to cover the multiple aspects of the basic sciences in nuclear medicine. Radiology residents in particular will appreciate the approach used in presenting the information in a very easily understood manner. Furthermore, the clinical application of the basic science information is presented, making the significance of the basic science information better understood.

Seven of the eight chapters on clinical applications are organized by organ systems: “Cardiovascular Imaging, Bone Imaging, Lung Scanning, Genitourinary Imaging, Abdominal Imaging, Endocrine Imaging and Central Nervous System.” The one chapter not organized by organ systems is entitled “Non-Organ Specific Imaging: Tumor and Inflammation Detection.” The order of the chapters seems to have some relationship to the number of clinical studies performed in a typical nuclear medicine department.

The chapter on “Cardiovascular Imaging” is the best of the many excellent chapters in the clinical applications section of the book. Every aspect of any importance in cardiovascular nuclear medicine is discussed. The single figure of a ^{99m}Tc -teboroxime study is the only figure in the chapter that is not from the authors' institution, and the cardiac images are small and do not conform to the quality of other images in the book. The chapter is 48 pages in length, and it covers the appropriate clinical information in addition to all the radionuclide approaches of evaluating the heart. This up-to-date review of cardiovascular information provides the reader an excellent overview of the topic. The chapter does not go into detail concerning the accuracy of the studies, but stresses the clinical utility of the information provided by the studies. The theme of describing the studies and their utility continues throughout the remaining chapters, and I find this approach quite refreshing. The authors commit themselves to the utility of the various imaging procedures without going into the details concerning the manner in which they came to these conclusions. This is an important aspect of the book, i.e., the value of the procedures as determined by a well-recognized group of nuclear medicine physicians.

The remaining clinical chapters follow the theme set by the chapter on “Cardiovascular Imaging” and provide the information available from nuclear medicine studies. For example, the chapter on “Bone Imaging” covers the important clinical aspects of the utilization of radionuclide bone imaging. Moreover, the section on soft-tissue abnormalities and scan artifacts provides information generally not covered in most reviews of bone imaging.

This book provides an excellent overview of nuclear medicine and focuses on the practical aspects. I highly recommend this book to anyone who wants an introductory textbook on