

BOOK REVIEWS

PEDIATRIC NUCLEAR MEDICINE (SERIES—CURRENT PRACTICE IN NUCLEAR MEDICINE). J. R. Sty, R. J. Starshak, J. H. Miller, Eds. Norwalk, Connecticut, Appleton-Century-Crofts, 1982, 209 pp, \$42.50

The comprehensive manner in which the authors review the pediatric applications of radionuclide imaging makes this book useful both as a teaching text and a reference. Organized in the standard format by organ system, each section presents a technical discussion and review of common pediatric pathology, but with sufficient mention of differential subtleties and uncommon disorders to hold the interest of the experienced imager. Two outstanding features of the material are the thorough bibliography that supports each discussion and the ample number of figures that illustrate the text. The figures are of high quality, showing that such images can be obtained in pediatric patients when proper care and techniques are used. The material is up-to-date with a thorough discussion of newer applications, such as hepatobiliary imaging and cardiac function studies.

While some discussion of alternative imaging modalities appears throughout the book, and radiographs, sonograms, and TCT scans are presented to complement radionuclide images, the text does not deal at length with the question of integrating multiple modalities. The text is honest, however, in that the limitations of radionuclide studies are pointed out.

There is material in this book for people involved at all levels of pediatric nuclear medicine. The trainee will find discussions of techniques and an overview of pediatric disorders; the experienced nuclear physician will find that reference that he or she vaguely recalls, but can't quite recall exactly. This comprehensiveness is a measure of the care taken in the text's preparation.

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PROGRESS IN RADIOPHARMACOLOGY 3 (SERIES: DEVELOPMENTS IN NUCLEAR MEDICINE 2). P.H. Cox, Ed. The Hague, The Netherlands, Martinus Nijhoff Publishers, 1982, 285 pp, \$44.00

The symposium proceedings deal with only three areas of interest to nuclear medicine physicians and scientists—namely, those dealing with the kidney, endocrinology, and the brain. Though the editor notes in the introduction that the symposium proceedings published in this book present the "state of the art in a European setting," the coverage of the topics at the symposium is selective and limited in scope. In addition, with the exception of one or two, the articles presented lack detail and depth. Even those persons involved in the specific areas of nuclear medicine covered in the publication will perhaps find the articles of only marginal interest in view of the lack of extensive coverage of the topics.

The high cost of the publication is another deterrent for personal ownership of the book. It could be recommended, however, for stocking the departmental library.

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THE PHYSICAL PRINCIPLES OF COMPUTED TOMOGRAPHY. W. R. Hendee. Boston, Massachusetts, Little, Brown and Company, 1983, 192 pp, \$32.50

Writing a nonmathematical treatment of a subject as complex and extensive as transmission computerized tomography (TCT) is no trivial task, yet Dr. Hendee has accepted the challenge and succeeded admirably. The book is divided into 16 chapters, one dealing with the history of x-ray computerized tomography, 11 dealing with various aspects of x-ray CT, and one each covering the subjects of TCT in radiotherapy treatment planning, emission CT, CT in ultrasound, and nuclear magnetic resonance imaging. The chapter on the history of x-ray CT is particularly interesting, not only for the neophyte, but also for those who have worked in the field over the past decade. Although some will no doubt quibble with credits in this section, it is interesting and engaging to follow the unfolding of ideas that effected faster and more versatile imaging machinery.

As outlined in the preface, this book is written as an introductory text for physicians using the technique, for physicists and engineers responsible for proper operation of the equipment, and for technologists working in the clinic. To this list I would add lay persons who have an understanding of basic physics and a curiosity to learn more about TCT imaging techniques. The text is written in a didactic manner, paragraphs are clear and concise in communicating their ideas, and emphasis is on establishing a succinct and direct interface with the reader. The audience the author addresses should have no difficulty in following the presentations.

While the book has few flaws in fulfilling its mission, some should be mentioned. The coverage of material is heavily weighted toward transmission CT. Although this may be justified, readers with primary interests in emission CT, ultrasound CT, or NMR may be disappointed. In addition, the layout of the book (half-page vertical text) encourages the use of illustrations. Indeed many are used, but several principles could have been better conveyed with different or improved illustrations. These include back projection reconstruction, NMR image formation, and the angular sampling problem in reconstruction from projections. Illustrations are often used to communicate these fundamental concepts, but they are sometimes not the best ones for the purpose at hand. Some chapters are sparsely referenced; however, it is fair to say that interested readers will be sufficiently thrust into the stream of appropriate literature by the references that are presented. A brief, annotated bibliography would be a welcome addition to this text. This reviewer would prefer to see the term, "longitudinal" tomography replaced by "limited-angle" tomography, a semantic difference that seems to clarify the physical characteristics of many so-called "longitudinal" tomographic systems. The problem of paucity of angular sampling in these systems is not really emphasized in the explanation, and this may leave fuzzy concepts in the minds of readers unfamiliar with the subject. On page 72 the normalized, percent version of the definition of full width at half maximum is used in a description of spatial resolution. This formula no doubt was meant to appear in the section on energy resolution, and escaped notice in editing. Finally, while advances in this rapidly changing field are discussed, some are covered in more detail than others, e.g., dual kVp work receives little more than a