

currently available and the various methods, particularly tomography, for imaging. Unfortunately, because each chapter devotes significant space to a discussion of detection, sensitivity, and resolution, there is substantial repetition of material. The "Clinical Relevance of Receptor-Binding Radiotracers," the last section, consists of a single chapter that reviews the spectrum of disorders and provides a list of targets to which the methodology described in the previous section could be applied.

Dr. Eckelman has succeeded in providing a useful pair of volumes for the serious basic scientist or clinician interested in receptor-site-directed radiopharmaceuticals. The strength of the publication lies in the organization of the topics and the detail with which the authors have presented their areas of expertise. Although the impact of Sections II and IV is weakened by the lack of data or references more recent than 1979, the overall quality of the material makes the set a worthy acquisition for the individual investigator or the nuclear medicine library.

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**BASIC PHYSICS OF RADIOTRACERS, Volumes I and II (CRC Series in Radiotracers in Biology and Medicine).** W. Earl Barnes, Ed. Boca Raton, FL, CRC Press, 1983, 205 pp, \$64.00, US; \$74.00, outside US

These two volumes are part of the CRC Series, *Radiotracers in Biology and Medicine*. The other eight volumes in this series cover a broad range of topics in radiotracer theory and methodology.

The present work, with chapters contributed by five physicists, deals with fundamental principles of atomic and nuclear physics and interactions of radiation with matter. The material is presented at a rather advanced level, so that people without a strong background in physics would be unable to follow most of the presentation. For those with the appropriate background, however, these volumes can serve as a lucid and detailed source of the theory of radiotracer physics. The main strength of the work lies in the fact that several important topics are covered in depth in a single, concise, and well-written volume. Thus, these volumes are useful references for the physicist needing to review a particular topic or an entire area of atomic or nuclear physics. The necessity to search through several standard physics texts can often be obviated by reference to this source.

After an introductory chapter covering basic concepts of physics, the second chapter of Volume I is a detailed and rather advanced presentation of the theory of atomic structure. In the first chapter of the second volume, nuclear physics is presented, including discussion of global nuclear properties, the nuclear force, and nuclear models. In the next chapter, the theory of alpha-, beta-, and gamma-decay, and internal conversion are presented in satisfying theoretical detail. It is refreshing to note that internal conversion is correctly discussed as a direct transfer of energy to the orbital electron without an intervening gamma ray. The next chapter covers interactions of radiation with matter. Physicists in radiation therapy may find this chapter valuable, since the physics is covered in greater depth than in the standard textbooks of physics in radiation therapy. The final chapter, on the mathematics of radioactive decay, is, unlike the others in its topic, a slightly less advanced presentation. Again, however, the discussion is clear and comprehensive. Several practical examples of radioactive decay calculations are included, and there are interesting derivations of the Poisson distribution from two different points of view.

A principal weakness of the publication is the high price for two slim volumes. The index is incomplete and not combined for the two volumes. The major discussions of some important topics are not referenced in the index. Finally, for some inexplicable reason, the equations are set in small type, a relatively minor but irritating

point.

In summary, in these comprehensive and well-written volumes, the basic physics of radiotracers is presented clearly and in depth, thus making them a useful, though expensive, reference for the experienced physicist.

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**INVASIVE RADIOLOGY: RISKS AND PATIENT CARE.** J. S. Rose. Chicago, IL, Year Book Medical Publishers, 1983, 176 pp, \$19.95

This book is intended to help radiologists: 1) select patients for and evaluate the risks of invasive procedures, and 2) manage patients before, during, and after these procedures. The book achieves these goals with a clear and concise presentation.

Some reservations regarding the book follow:

The author does not discuss the use of nonionic contrast media in the vascular system, an unfortunate omission in view of the increasing importance of these media.

Some procedures such as coronary vein embolization and placement of indwelling shunts in the biliary and urinary tracts are omitted. The statement that there is a lowered incidence of alleviation of ischemic symptoms in the diabetic by angioplasty (or surgery) due to "small vessel" disease is not justified. These patients usually respond to appropriate angioplasty or bypass surgery.

The author implies that contrast lower extremity venography can be supplanted in many instances by noninvasive studies. The accuracy of noninvasive studies in diagnosing deep-vein thrombosis may be high in some institutions. In most institutions, however, because of the unavailability of noninvasive studies, their built-in limitations, and the difficulty in performing and interpreting them, contrast venography clearly remains the best means of diagnosing or excluding deep vein thrombosis.

In summary the book achieves the goals it set and is recommended for general radiologists who perform invasive procedures.

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**ULTRASOUND IN OBSTETRICS & GYNECOLOGY.** JC Hobbins, F. Winsberg, R. Berkowitz, Eds. Baltimore, Williams and Wilkins, 1983, \$32.00, 240 pp

This is a second edition of one of the three books on obstetrical ultrasound entitled *Ultrasonography in Obstetrics and Gynecology*. The two principal authors, both well-known in ultrasound, have been joined in this edition by Richard Berkowitz. As expected the book is interestingly written with some characteristic, witty phrases such as the observation that the distinction between incomplete abortion and missed abortion is more "theological than practical" and attempting to interpret A-mode observations of fetal breathing is akin to reviewing "intraoperative chicken scratches from a strip chart recorder."

When this book was first produced, the illustrations were of extremely poor quality. Fortunately, the editors insisted on reprinting the book, and the quality of the illustrations is now adequate. I still find some of the illustrations a bit difficult to interpret, however, because so few of the phenomena described in the legends are illustrated with arrows or letters. Some of the illustrations, even with the improved reproduction, remain of poor quality, which can be attributed to the fact that, on the whole, they illustrate rare fetal anomalies.

The major fault with the book relates to the area of gynecology.