

## BOOK REVIEWS

**NUCLEAR MEDICINE IN UROLOGY AND NEPHROLOGY.** P. H. O'Reilly, R. A. Shields, and H. J. Testa, eds. London-Boston, Butterworths, 201 pp. \$39.95.

It was truly gratifying for me to have the opportunity to review this primer on the use of radionuclides in urology and nephrology. The authors obviously have had extensive experience in the area; and it is particularly appropriate that a book on the use of radioisotopes and kidney disease has a urologist as its senior author, since this is an area with great potential for meaningful application.

The volume is divided into three basic parts: techniques, clinical applications, and basic principles. The descriptions of the various techniques applicable to urology are clearly and concisely written. The clinical applications also state the case quite lucidly, although there is perhaps a somewhat uneven emphasis on space-occupying disease as compared with other subjects, such as obstructive uropathy, urinary tract trauma, pediatric problems, etc. In addition to discussing the clinical applications and techniques, the authors provide detailed descriptions of their methodology. In an area where there is a great tendency for methodology to vary greatly from center to center, this is a most useful and informative approach. The clinical applications are not quite as detailed as one would desire for practice in the field, however, the overall approach is certainly adequate for use by urologists, residents in radiology and nuclear medicine, and practitioners in allied fields. This book would be a very reasonable beginning to obtain a broad view of the application of radionuclides in urology and nephrology necessary to begin to use these procedures.

The basic principles section is wisely left at the end of the book, presumably because the authors have assumed that the majority of those using it will be clinicians who may or may not want to delve into basic physics principles. Nevertheless, this section is quite concise and clearly written and explains processes, such as convolution and deconvolution, so well that one with literally no mathematical background would begin to understand the concepts of the procedures.

Overall this book sets out to introduce to the practicing urologist, pediatrician, or nephrologist the advantages of the use of nuclear medicine testing in their respective disciplines. The stage is set very well and all the material necessary is provided to introduce the physician to these areas.

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**INSTRUMENTATION AND MONITORING METHODS OF RADIATION PROTECTION.** NCRP Report #57. National Council on Radiation Protection and Measurements, Washington, D.C., 1978. \$5.00.

The National Council on Radiation Protection and Measurements is a nonprofit corporation chartered by Congress in 1964 to, in part, collect, analyze, develop, and disseminate information and recommendations about radiation protection and radiation measurements, qualities and units concerned with such protection. Those reading their report series find a wealth of information concerning various topics in radiation protection clearly and

concisely presented. This report is no exception. It was written to replace earlier NCRP Report #10 and covers survey and monitoring procedures. It is useful to institutions, such as industrial plants, scientific laboratories, universities, and hospitals or clinics dealing with x-ray machines, sealed or unsealed radioactive materials, low energy accelerators, and low-power nuclear reactors. Therefore, it contains much information beyond the scope of the average nuclear medicine department.

The book is divided into five main sections: Fundamentals of Survey Monitoring Procedures, Area Survey Methods, Personnel Monitoring Methods, Instrumentation, and Radiation Accident Monitoring. The section on Area Survey Methods lays out in step-wise fashion the phases to be considered in setting up a survey program, such as investigation, inspection, measurement and evaluation, and recommendations. Clearly designated are the "shoulds" and the "shalls" of monitoring based on regulatory guidelines. The book discusses when monitoring is required, the type of monitoring that shall be carried out, whether it is the measurement of a radiation field or the measurement of surface contamination, the instrument performance characteristics, and survey evaluation.

Also of interest to nuclear medicine personnel are the sections on external exposure determination and internal exposure monitoring. The latter describes methods to detect internal contamination and the advantages, sensitivities, and accuracies of each. In addition, the chapter details the type of personnel exposure records that should be maintained. In this regard, it may surprise some readers that the NCRP recommends retaining personnel data files for at least 30 years.

The next chapter discusses instrumentation for the measurement of radiation fields and contamination levels. This section is extremely practical as the limitations of each system are clearly presented. This information is difficult to find in textbooks and yet critical to understanding the implementation of a monitoring program.

The final chapter on radiation accidents is very brief, but again offers a step-wise approach to monitoring in an emergency setting. Because nuclear medicine personnel are often regarded as the local "experts" in nuclear medicine safety, they might well be called on for advice in the event of some local accident. Such a quick reference could be very valuable.

In nuclear medicine, monitoring has often been performed by rote to satisfy regulatory requirements, without ample knowledge of the process or procedures involved. For this reason, reading this clear presentation on various aspects of monitoring could be of value to the nuclear medicine physician, physicist, pharmacist, and technologist. This small book rightfully deserves its place on their bookshelves.

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**1979 YEARBOOK OF NUCLEAR MEDICINE.** James L. Quinn, III, ed. Stewart M. Spies, Assoc. ed. Yearbook Medical Publishers, 1979, 374 pp. \$27.95.

Again, as in previous years, the Yearbook of Nuclear Medicine

reminds us of the important developments we have missed, and, of course, adroitly steers us in the right direction to "catch up."

Whereas a simple series of current literature summaries without editorial comment would perhaps serve as well to reinforce our knowledge of important developments and make us aware of new directions we have overlooked, the editors' brief and sometimes pithy remarks add interest and strength to the volume. Only very rarely are the editorial remarks sufficiently harsh to detract from their usefulness, and this tendency is, happily, less visible in 1979 than in some previous years.

Each of the major areas in nuclear medicine is well represented, and an excellent balance is maintained between clinically-oriented articles and research-oriented works. Moreover, the research topics are covered in great clarity, so that practicing radionuclide clinicians will not be "put off" by reams of "gobble-de-gook."

As a reviewer, I have spent long days and sleepless nights attempting to come up with a reasonably justifiable criticism of the 1979 yearbook; however, after such consideration, the facts remain—the 1979 *Yearbook of Nuclear Medicine* is a brief, clear, and well-balanced volume that is an invaluable addition to our bookshelf.

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**ULTRASOUND IN TUMOR DIAGNOSIS.** C. R. Hill, V. R. McCready, D. O. Cosgrove, eds. Great Britain, The Pitman Press, 1979. (distributed by Year Book Medical Publishers, Inc.) 285 pp. \$30.00.

This treatise represents the combined efforts of 22 contributors from six countries in delineating the historical development, current accomplishments, and future hopes of ultrasound in tumor

diagnosis. The unique depiction of tissue organization and physical structure obtained in echograms was recognized quite early in the medical applications of this technique, and the early investigative approaches are described and discussed along with their influence on the subsequent development of this field. The physical basis of tumor detection using pulsed-echo ultrasound is presented along with the current limitations these characteristics impose in various organs and sites of the human body.

The mid-portion of the book is devoted to clinically applicable ultrasonic imaging methodology useful in diagnosing tumors of the eye and orbit, thyroid, breast, liver, pancreas, urinary bladder, kidneys, adrenals, and female reproductive system, with one chapter devoted primarily to ultrasonically guided biopsy procedures. The clinical material is well detailed with excellent illustration of scans obtained in the various disease entities.

The concluding chapters deal with tissue characterization *in vivo* by ultrasound backscattering analysis, a topic of intense research interest at this time; and with an excellent analysis of the strengths and weaknesses of the various imaging techniques including x-radiography, computed transmission tomography, ultrasound, nuclear medicine, and thermomography as well as possible contributions to be anticipated from nuclear magnetic resonance.

Major strengths of this book are the cohesion with which the various developments in ultrasonic tumor diagnosis are presented and the perspective lent by the integration of historical, futuristic, and interdisciplinary points of view. It is recommended reading for all currently involved in tumor diagnosis using diagnostic ultrasound and for those looking toward the combined focusing of diagnostic imaging modalities in a way that will utilize the full advantages of each in tumor detection and characterization.

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## BOOKS RECEIVED

*Lymphographie—Anatomie, Technik, Diagnostik.* K.H. Gunter Muller. 60 pp, illustrated, Berlin/Heidelberg/New York, Springer-Verlag, Inc., 1979, \$24.50

*Medical Applications of Fluorescent Excitation Analysis.* Leon Kaufman and David C. Price, eds. 166 pp, illustrated, Boca Raton, FL, CRC Press, 1979, \$49.95 in U.S., \$57.50 outside U.S.

*Synchrotron Radiation Applied to Biophysical and Biochemical Research* A. Castellani and I.F. Quircia, eds. 390 pp, illustrated, Plenum Publishing Corp., 1979, \$39.50.

*Radionuclide Techniques in Medicine.* Joan M. McAlister. 229 pp, illustrated, New York (Cambridge and London), Cambridge University Press, 1980, \$34.50 hard cover, \$10.95 paperback