

### THE SELECTION AND PERFORMANCE OF RADIOLOGIC EQUIPMENT.

*W.R. Hendee, Ed. Baltimore, Maryland, Williams & Wilkins, 1985, 263 pp, \$48.50*

This book is addressed to persons who are responsible for selection, purchase, and acceptance testing of radiologic equipment. All radiologic disciplines are addressed but radiation therapy gets very little attention compared with the diagnostic imaging specialities. The authors are from the University of Colorado Health Sciences Center, Department of Radiology, and this work represents a decade of their experience and work in this area. The main audience seems to be administrators who are involved in purchasing radiologic equipment for the first time. Physicists, chief technologists, and physicians may profit from sections of the book.

The ten chapters and two appendices cover justification, specification, bidding, facilities preparation, acceptance testing, quality assurance, maintenance, and a description of imaging modalities. These topics are surveyed for the most part at an introductory level. Persons who have recently entered the diagnostic imaging field and need a quick introduction to the field and suggested procedures for purchasing, acceptance testing, and starting a quality assurance program could profit from sections of this book. The references for most chapters are extensive and would be useful for the physicist or technologist who would be charged with the implementation of the acceptance testing and quality assurance program.

The three strongest chapters are those on the development of performance specifications, acceptance testing, and design of a quality assurance program. Each of these chapters emphasizes the importance of written communications and records and provides numerous sample forms developed over the last ten years at the University of Colorado. The philosophy of testing to performance specification is presented and a survey of tests performed on all diagnostic imaging equipment is given, including radiographic equipment, nuclear medicine, computed tomography, and ultrasound.

The weakest chapters, which would be of use only to beginners in the field, are the chapter on identification of clinical needs and the appendix on radiologic modalities. Both of these consist of material that the student technologist or first year resident could have written. However, references are given here for these beginners to study in more depth.

A unique and interesting chapter on maintenance is presented near the end. There is an extensive presentation on the economics of in-house as compared with vendor maintenance. The authors claim extensive experience in this subject and their data deserves a close look by all persons with similar responsibilities.

Most of the graphics and tables are well done but occasional lapses do occur where legibility suffers from choice of figure size such as in Figure 1.1. The numerous sample forms are an asset for all beginners to this subject.

This is the first book of its kind and addresses very important concerns that all persons in radiology must be aware of, especially in light of the present economic climate for radiology.

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### DYNAMIC AND COMPARTMENTAL STUDY OF ADRENALS USING RADIOCHOLESTEROL IN-VIVO.

*P. Pavoni, Ed. Rome, ACTA Medica, 1984, 72 pp*

This monograph consists of five contributions on the adrenal handling of cholesterol with additional introductory and concluding remarks and discussions. The first two are brief, general reviews of compartmental and noncompartmental studies with labeled steroids and adrenal cholesterol metabolism by Gurpride and Boyd, respectively. Margrini and Concolino deal specifically and in detail with compartmental analysis of adrenal cholesterol metabolism based on serial iodine-131-6B-iodomethylnorcholesterol scintigraphy using rectilinear scanning. These two authors and Pavoni, in his clinical contribution, make a convincing argument for the determination of kinetic parameters of adrenal cholesterol metabolism rather than single uptake measurements at an arbitrary time point.

Overall, this monograph is of interest to those with a research interest in adrenal cortical pathophysiology and quantitative adrenal scintigraphy, but is of limited interest to nuclear medicine physicians outside this field. It contains a useful compilation of data which, while not new, is not otherwise readily available.

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### MEDICAL EFFECTS OF IONIZING RADIATION.

*F.A. Mettler, R.D. Moseley, Jr. Orlando, Grune & Stratton, 1985, 288 pp, \$59.50*

In their preface, the authors state that this volume is intended for use by professionals interested in the effects of ionizing radiation and appears to be geared toward health physicists and lawyers with a medicolegal background. It does not appear that this volume was meant to be an introductory textbook for students of radiobiology. In contrast to introductory texts, the authors intentionally omit classic animal study data, information which may aid in understanding the concepts involved. Instead, the authors concentrate on the human effects of both high-level and low-level exposures.

The book can be divided into three major sections. In the first, the authors do a superb job in reviewing the sources of radiation, as well as basic radiation physics, chemistry, and biology. This is a concise presentation of most of the basic fundamentals needed for further study of radiation at the cellular, tissue, and systemic levels. Direct effect, carcinogenic effects, and genetic effects of high-LET, low-LET, and radionuclide irradiation are presented in detail. Radiation syndromes, as well as the effect of various radiation modifiers are reviewed. There is also a timely discussion on radiation exposure in utero.

The final area of discussion includes data pertaining to cancer induction, estimation of carcinogenic risk, and radiation carcinogenesis at specific sites. For most of the organ systems there is reference to the effects of fallout, radiation therapy, diagnostic radiation, and internal exposure.

The appendix, which includes an extensive glossary of radiobiology terms, as well as many hard to find radiation source and exposure tables, is a useful reference for nuclear physicians and those involved with radiobiology.

Overall, this text fulfills its purpose as a source book for professionals interested in the effects of ionizing radiation in humans. It is highly recommended as an informative and well written text for practitioners, medical scientists, and medical specialists dealing with the effects of radiation.

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## Books Received

**Positron Emission Tomography and Autoradiography: Principles and Applications for the Brain and Head.** *M.E. Phelps, J.C. Mazziotta, H.R. Schelbert. New York, Raven Press, 1985, 704 pp, \$89.50*

**Essentials of Nuclear Medicine Imaging, Second Edition.** *F.A. Mettler, M.J. Guiberteau. Orlando, Grune & Stratton, 1985, 391 pp, \$47.50*

**Health Technology Assessment Series: Health Technology Assessment Report, 1985, No. 13: Magnetic Resonance Imaging.** *E. Feigenbaum. Rockville, National Center for Health Services Research and Health Care Technology Assessment, 1985, 106 pp, no charge*

**Emergency Radiology of the Acutely Ill or Injured Child, Second Edition.** *L.E. Swischuk. Baltimore, Williams & Wilkins, 1986, 622 pp, \$75.00*

**Pocket Atlas of Cranial Magnetic Resonance Imaging.** *V.M. Haughton, D.L. Daniels. New York, Raven Press, 1985, 61 pp, \$12.50*

**The Nuclear Waste Primer. A Handbook for Citizens.** *The League of Women Voters Education Fund. New York, Nick Lyons Books, 1986, 90 pp, \$11.95*

**Clinical Epidemiology: The Architecture of Clinical Research.** *A.R. Feinstein. Philadelphia, W.B. Saunders, 1985, 832 pp, \$60.00*

**Digital Subtraction Angiography: Practical Aspects.** *A. Van Breda, B.T. Katzen. Thorafare, Slack, Inc., 1986, 230 pp, \$49.50*

**Manual of Neonatal Care, Second Edition.** *J.P. Cloherty, A.R. Stark, Eds. Boston, Little, Brown, and Company, 1985, 658 pp, \$17.95*

**Send Us a Lady Physician: Women Doctors in America 1835-1920.** *R.J. Abram, Ed., New York, W.W. Norton & Co., Inc., 1986, 255 pp, \$20.00*