

BOOK REVIEWS

RADIOIMMUNOASSAY AND RELATED TECHNIQUES.

Jan I. Thorell and Steven M. Larson. St. Louis, C.V. Mosby Co. 1978, 298 pp, \$23.50.

As indicated in the preface, the goal of the authors was to provide an introductory text on radioimmunoassay that would serve both as a general survey of the field for students, technologists, scientists, and physicians and as a practical guide to assay performance. Drs. Thorell and Larson have been highly successful in meeting this goal.

This book is divided into three sections. The first one-third of the book is devoted to a comprehensive description of basic facts and concepts important for understanding the development and process of radioligand assays. This section begins with a useful glossary that effectively reduces the semantic problems faced by the novice in radioassay. Basic immunology and kinetics of antigen-antibody binding are reviewed, and a description of the methods and problems of producing antisera follows. For those readers not familiar with radioactive materials, radioactive decay, and radiolabeling are reviewed, with particular emphasis on iodination. It is unfortunate that some basic rules of laboratory radiation safety are not included for these same readers. In subsequent chapters, separation techniques, assay performance, data presentation, quality control, and equipment requirements are adequately discussed. This portion of the book is well illustrated, which greatly facilitates comprehension of the more technical material. An extensive bibliography completes this section.

The middle third of the book is devoted to specific descriptions of the commonly performed clinical assays. The method of performance of each assay is graphically outlined in a well-designed format that not only allows the neophyte to rapidly grasp the basic steps of the procedure but also provides specific details regarding reagent characteristics, separation techniques, alternative procedures, etc. To facilitate interpretation a brief review of assay results of the physiology and pathophysiology of the appropriate organ system is included in each chapter. This material is quite basic and is aimed at technologists rather than physicians. Diurnal or other cyclic changes in hormone level are displayed graphically. Optimal blood sampling times for specific disease processes and other practical hints, such as handling and storage of specimens, are also included. Protocols for suppression and stimulation tests are presented, and normal response for each procedure is displayed graphically. Each of the 14 chapters in this section is followed by a reference list, but, as in the first section, none of the references are specifically cited in the text.

The final section of the book contains 30 "recipes" for the preparation and testing of assay reagents or assay performance, beginning with preparation of an immunogen-adjuvant mixture and ending with a sample report for assay performance and data output. A comprehensive index completes the book.

This relatively brief, well-written, and profusely illustrated primer will be of most value to student technologists and resident physicians in nuclear medicine or clinical pathology. Research investigators, technologists, and scientists involved in the design and performance of radioligand assays will find this book useful as a basic text but will wish to supplement their knowledge with other more detailed materials.

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A USER'S GUIDE TO DIAGNOSTIC ULTRASOUND. Isabel M. Shirley, Roland J. Blackwell, Geoffrey Cusick, David J. Farman, and F. Robin Vicary. Baltimore, University Park Press, 1978, 329 pp, illustrated.

This very practical book presents a basic, thorough approach to the use of diagnostic ultrasound. The physical principals underlying the production of the ultrasonic pulse, factors influencing its propagation in tissue, and the generation and detection of echoes are covered thoroughly in a manner intelligible to the medical reader. The various clinical applications of the ultrasonic approach to imaging are illustrated with considerable detail in the obstetrical, gynecological, and abdominal areas. Briefer discussions of echocardiography, echoencephalography, Doppler, and pulsed Doppler techniques are included. Of special value to beginners in this field are the detailed "how to" instructions for performing diagnostic ultrasound examinations. Conventional A- and B-mode static scanning devices, real-time instrumentation, and special purpose equipment are explained with emphasis on the functions of the various controls and on methods for calibration and standardization. This book should prove useful to any person seeking an introduction to ultrasonography and to those instructing trainees in this rapidly expanding discipline.

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RADIOLOGICAL PROTECTION, First European Symposium on Radiation-Equivalence. R. Chanet, ed. Luxembourg, Commission of the European Communities, Bâtiment Jean Monnet-Kirchberg, 1977, 265 pp.

This publication is a collection of papers given at a "Seminar on Radiobiology-Radiation Protection" in Orsay, France in 1976, jointly organized by the Commission of the European Communities and the Fondation Curie of the Institut du Radium in Paris. Although most of the discussion is centered on experimental organisms, the motivation for the hypotheses, and the ideas and results presented obviously derive from concerns about hazards of environmental pollution to man. Recent episodes of potential, and in some cases real, exposure of large segments of the United States population to hazardous levels of industrial radiation and chemicals dramatize the importance of this book's subject. At the same time they point out the dearth of definitive data relative to man.

The book is divided into three sections and covers a broad scope of the topics; however, the attention of the reviewer focused on certain somatic and germ cell systems amenable to low-dose studies. The organisms used ranged from bacteriophage to mammals and plants; unfortunately, the one report on human cells was not submitted for inclusion.

The first section covers dose-effect relationships, especially at very small radiation doses. Considerable attention is given to work from the late A. H. Sparrow's laboratory on the exquisitely sensitive *Tradescantia* stamen hair cells in which somatic gene mutations for flower color have been readily detected down to 0.25 rad of x-rays. Of particular relevance is the fact that the