# BOOK REVIEWS

**RADIOIMMUNOASSAY: METHODOLOGY AND APPLICATIONS IN PHYSIOLOGY AND IN CLINICAL STUDIES.** Commemorative Issue for Solomon A. Berson. R. Levine and E. F. Pfeiffer, eds. R. Luft and R. S. Yalow, guest eds. Stuttgart, Georg Thieme Publishers, 1974, 195 pp, $23.00.

In this decade of widespread applications of radioimmunoassay techniques, few physicians appreciate the magnitude and depth of contributions to this field made by Dr. Solomon A. Berson. Although many tributes to his unique leadership have been made, it is appropriate that an attractively prepared commemorative issue of Hormone and Metabolic Research be devoted entirely to a collection of original papers by investigators whose careers have been influenced by Dr. Berson.

The focus of the articles is primarily on the smaller peptide hormones, although other biologic molecule subjects, such as erythropoietin and the prostaglandins, are included. The papers display unusual technical detail and do contribute some material new at the time of publication. The information presented requires considerable interpretation for the physician or scientist only casually acquainted with the field. In terms of readability and applications, the papers are advanced in nature, as is appropriate for a memorial anthology of this distinction.

The section on methodology has two significant discussions of the phenomenon of anomalously ascending standard curves in radioimmunoassays for ACTH, the so-called "hook effect." A number of interesting and useful methodologcial details are found in the several studies of estradiol, the pancreatic enzymes, TSH, C-peptides, CRF, LH, and LHRH. The section on physiology emphasizes insulin, but includes consideration of gastrin, HGH, and thyroxine. The Clinical Studies portion features a provocative followup of patients with decreased insulin response to glucose infusion, including patients with prediabetes or low-insulin response and with necrobiosis lipoidica. The emphasis on the polypeptide hormones generated earlier in the volume continues throughout the clinical studies and encompasses descriptions of work with insulin, LH, FSH, LHRH, HGH, and TRH.

This collection of papers dramatizes the broad impact of Dr. Berson on the field of radioimmunoassays of polypeptides. It is a worthwhile addition to departmental and research libraries and to the desks of those whose investigative interests include these hormones.

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**NUCLEAR OPHTHALMOLOGY-DYNAMIC FUNCTION STUDIES IN INTRAOCULAR DISEASE.** J. O'Rourke, M.D. Philadelphia, W. B. Saunders Co., 1976, 156 pp, illustrated, $27.00.

This brief text addresses the clinical applicability of radionuclide techniques to the generation of physiologic data in intraocular disease. The author emphasizes the development of these methods for the direct measurement of dynamic function of the inner eye.

In the first chapter, the general principles of dynamic function studies of the eye are discussed. There is a brief introduction to the tracer principle using diffusible and nondiffusible tracers and metabolically active ions, and a concise discussion of very basic radiation physics and instrumentation. Chapter 2 describes methods used both in animal and clinical studies for the measurement of anterior chamber depot clearances, and includes discussion of a microinjection technique for installation of tracers into the anterior chamber of the eye, and the instrumentation necessary both to detect and process radionuclide clearance data from a structure as small as the anterior chamber. The mathematical and physiological considerations important in the interpretation of such clearance data and radiation dose calculations are mentioned.

The remaining four chapters describe the results of the author's work in several categories of intraocular dynamic function. These include the measurement of intraocular capillary exchange and perfusion using Xe-133 clearance from the anterior chamber, the measurement of changes in aqueous humor bulk flow measured by clearances of I-125 labeled albumin, and the investigation of uveoretinal metabolism using isotopic zinc. A chapter is devoted to the use of the P-32 uptake test in the detection of choroidal malignant melanoma. An appendix section provides various tabular data related to the discussions in the text and clinical data on patients on whom anterior chamber xenon and albumin clearances were performed. The author concludes that the study of dynamic intraocular events using tracer techniques has much to offer in the study of normal and abnormal ocular physiology.

This work is largely a compendium of the author's experimental and clinical experience in the areas described. As such, it represents a useful addition to the library of a large medical center or of those working in the area of experimental ophthalmology. The initial discussions of nuclear physics, instrumentation, and tracer techniques are somewhat superficial. Because of the emphasis on research, this text would serve as a useful stimulus to further developmental work in the field, rather than as a guide for clinical nuclear medicine practitioners.

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**RADIATION PROTECTION FOR MEDICAL AND ALLIED HEALTH PERSONNEL, NCRP Report #48.** Washington, D.C. NCRP Publications, 1976, 72 pp, $4.50.

NCRP Report No. 48 is intended for the use of supervisory personnel in medical and allied health fields to alert them to possible problems in areas where ionizing radiation may be encountered. Included in the group of "allied health personnel" are physicians, nurses, technicians and others not classified as radiation workers, but who occasionally have to deal with radioactive materials or with patients who have received radiopharmaceuticals. Those personnel not directly involved in research or patient care, but who may be exposed to radiation incidentally in their work, include ship-

ping and receiving room personnel and maintenance workers.

The NCRP Committee 49, composed of Chairman Edith Quimby, Gerald Shapiro, and Elmer Stickley, state that many allied health personnel are concerned about radiation hazards and often have misconceptions regarding the subject. Since these persons at times work without instruction or guidance and do not always have access to factual information regarding ionizing radiation, one purpose of the report is to describe the types of problems encountered and to suggest approaches to their solutions. Specific parts of the report are appropriate for individual workers who are exposed to ionizing radiation on an occupational basis. The text has been kept simple, and technical terms have been avoided when possible. It is suggested that copies of the report be readily available to allied health personnel who are occupationally exposed to ionizing radiation, and in addition the committee recommends that the report be read by all supervisory personnel.

The radiation sources, facilities, and applications considered in the report include: Radiation Areas; X-Ray Diagnosis—General Radiography, Mobile (portable) Equipment, Operating Room Procedures, Special Radiographic Procedures, Animal Radiography; Radiation Therapy—X Rays, Cobalt Teletherapy and Particle Accelerators, Brachytherapy: Sealed source storage area, Patient and administration areas, Source transport, Post-administration care; Nuclear Medicine and Radioactive Materials (Radioisotopes)—The High Activity Laboratory: Receiving, Storage; Radiopharmaceutical Procedures—Radioimmunoassay, Bioassay, In vitro testing; Hospital Procedures—Therapeutic applications, Patients' waiting areas, Diagnostic tests; Research Laboratories—Physics, chemistry, radiobiology, radiopharmaceuticals; Disposal Facilities for Solids, Liquids, Gases—Hospitals, Laboratories; Morgue.

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**STRUCTURAL SHIELDING DESIGN AND EVALUATION FOR MEDICAL USE OF X-RAYS & GAMMA RAYS OF ENERGIES UP TO 10 meV.** NCRP Report No. 49. Washington, D.C., NCRP Publications, 1976, 126 pp, $3.50.

NCRP Report No. 49 supersedes Report No. 34 and contains recommendations and technical information, as well as a discussion of the factors to be considered in the selection of shielding materials and the calculation of barrier thickness. It is intended for radiologic physicists, radiologists, and regulatory personnel who specialize in radiation protection. Sections of the report should be of interest to architects, hospital administrators, and others concerned with the planning of new radiation facilities. Report No. 49 should be required reading for anyone involved in the design of new radiologic facilities or in the radiation protection survey of existing ones.

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