BOOK REVIEWS

NON-INVASIVE BONE MEASUREMENTS: METHODOLOGICAL PROBLEMS. J. Dequeker, C. C. Johnston, Jr., Eds. Oxford, England and Washington, D.C., IRL Press Ltd., 1982, 255 pp, $30.00

This book presents the *Proceedings of the Workshop on Non-Invasive Bone Measurements* held at the XVI European Symposium on Calcified Tissue Research, in Knokke, Belgium, 1981. The text is divided into three sections; noninvasive bone mass assays as viewed from the comparability of the different measurements, the proper expression of values obtained in these measurements, and the clinical relevance of measurements of peripheral, axial, and total skeletal mass. The purpose of the workshop associated with these proceedings was to discuss the methodological problems encountered in noninvasive bone measurements. As with many proceedings publications, however, the various topics covered are not given equal treatment. In spite of this, the text is an important contribution to the literature for investigators interested in the quantitative assessment of bone mass. There are 12 papers in the text on single- or dual-photon absorptiometry, seven on radiogrammetry, two each on neutron activation and TCT densitometry, in addition to three introductory presentations that compare the different methods of measurement. The variable attention given to these different topics reflects, in part, the general interest of the scientific and medical community. Radiogrammetry and absorptiometry have been used for many years and, only recently, has TCT been shown to offer considerable promise for the assay of bone mass.

The text is particularly useful from the standpoint of the numerous clinical examples of bone mass assays, especially in the study of metabolic bone disease. The different viewpoints expressed, both by the way of comparison of different approaches to the same method and by the reported findings from different methods provide the reader with good insight into the basis for selecting a procedure for a specific application. Those who have recently read Cohn's text, *Non-Invasive Measurements of Bone Mass and Their Clinical Application*, will find this an interesting and worthwhile companion volume. Whereas the book edited by Cohn stresses the theory underlying each of these bone assays, this volume emphasizes methodologic problems and clinical applications. The book provides an important compilation of up-to-date observations in this specialty area. It is a useful reference book for departmental libraries serving nuclear medicine specialists and radiologists interested in bone pathology and physiology.

DAVID A. WEBER
University of Rochester School of Medicine and Dentistry
Rochester, New York

BIOLOGIC APPLICATIONS OF RADIOTRACERS. H. J. Glenn, Ed. Boca Raton, Florida, CRC Press, 1982, 208 pp, $63.50

The title of this book could lead one to think it is another compilation of research results involving the applications of radiotracer methodology. *Biologic Applications of Radiotracers* is actually a "how-to" book for "the use of small animals in radiotracer research." As part of the CRC Press series *Radiotracers in Biology and Medicine*, it is intended to be an updated presentation of material last available in the two-volume treatise *Radionuclides in Pharmacology*, published in 1971.

A perusal of the table of contents reveals that the eight contributing authors provided nine chapters that address virtually every aspect of the practical side of using small animals for radioisotope biodistribution studies including designing and organizing an animal radiopharmacology laboratory (Chapter 2), planning and carrying out biodistribution studies (Chapter 5), choosing an animal model (Chapter 1), animal handling, radiotracer administration, dissection and sampling techniques (Chapter 6), and obtaining the results using autoradiography (Chapter 4) and liquid scintillation counting (Chapters 7 and 8).

Concomitant with the multiauthor format is the expected unevenness and overlap. Often this overlap works to the reader's advantage, i.e., when a subject is only touched upon in one chapter, it is discussed at length in another. The extremes of the unevenness are exemplified by the presentation on autoradiography and the chapters on species biodistribution differences and the handling, maintenance, and disposal of radioactive animals.

One quarter of this volume is devoted to autoradiography, and provides a unique and valuable introduction to all aspects of this subject, including guidelines for choosing the appropriate technique, radioisotope and film, maximizing efficiency, and avoiding the common pitfalls. Although the depth of the information falls short of that needed to begin this type of experimental work, there are ample references to the literature. This chapter also includes 22 pages of black and white and color plates illustrating both the methods and equipment and the various applications of this powerful technique.

Another comprehensive chapter is that on animal handling, drug administration, dissection, and sampling techniques. This is a real "how-to" presentation on the correct procedures for rodent handling, injection, anesthetizing, killing, and dissection. Also given are detailed methods for obtaining fluid and tissue samples. Accompanying the text are clear, detailed photographs showing how these various procedures are carried out. Again, key references are provided to allow the researcher easy access to the primary literature.

Much less satisfying is the superficial treatment given the subjects of biodistribution differences between species (Chapter 3, three one-half pages, no references) and the handling, maintenance and disposal of radioactive animals (Chapter 9, five pages, four references). The latter subject is covered more thoroughly in the earlier chapter on the animal radiopharmacology laboratory, although this material is somewhat marred by the inclusion of several hastily executed drawings that are not up to the standards one would expect in a text such as this. This reviewer was also disappointed to discover that much of the material in the two chapters on liquid scintillation counting is reproduced verbatim from another CRC Press publication, *Principles of Radiopharmacology*.

These deficiencies, however, do not significantly detract from the fact that this text is an excellent compilation of all the basic information needed to plan and execute a basic research program