NCRP REPORT No. 110, Some Aspects of Strontium Radiobiology. Maryland, National Council on Radiation Protection and Measurements, 1991, 95 pp, $15.00.

Although NCRP Report No. 110 prepared by Scientific Committee 57-12 provides information on the radiobiology of radiostrontium, it deals almost exclusively with ^{90}Sr. The Committee recommends that the risk estimates that are given for humans from internally deposited ^{90}Sr not be regarded as a final interpretation for setting radiation protection standards.

The first two chapters discuss the need for this report and the sources of information used in its preparation. Chapter 3 describes metabolism of radiostrontium as determined from strontium-to-calcium ratios, animal studies, and measurements of fallout ^{90}Sr in the diets of children. In Chapter 4 on dosimetry of ^{90}Sr, time integrals of retention functions for ^{90}Sr and ^{89}Sr are given for blood, total body, bone, bone surfaces, bone volume, total skeleton, and soft tissue. Values for bone volume retention are divided into new compact, old compact, new cancellous, and old cancellous bone.

Chapter 5 reports on effects seen in long-term studies from ^{90}Sr, Chapter 6 on the comparison of effect from ^{90}Sr with those from ^{226}Ra, and Chapter 7 on genetic effects of ^{90}Sr. Chapter 8 projects the information on effects to give estimated risks to humans from internal deposition of ^{90}Sr. Different models were used to give a range of the lifespan risks of fatal malignancies (bone sarcomas and leukemias) induced by ^{90}Sr. The conclusion presents the Committee's estimates that 0 to 6 bone sarcomas per 10^4 person Gy and 0 to 8 leukemias per 10^4 person Gy would be seen in a population exposed to radiostrontium at low doses and dose-rates.

The appendices are of particular interest. Appendix A is a table of kilobecquerel-days in bone and soft tissue for ^{89}Sr, ^{90}Sr, ^{91}Sr, and ^{140}Ba. Appendix B gives retention functions for different modes of intake of strontium. Appendix C presents information on the cause of death for ^{90}Sr-injected monkeys that were studied at the University of California, Berkeley.

Although strontium radioisotopes are not encountered in most nuclear medicine facilities, ^{89}Sr is being tested for alleviation of bone pain. This report will be useful to researchers using ^{89}Sr for its information about retention and dosimetry of radiostrontium in addition to the radiobiology aspects that are included.

Evelyn E. Watson
Oak Ridge Associated Universities, Inc.
Oak Ridge, Tennessee

Guidelines for the Evaluation of Radiologic Technologies. BIR Working Party Report. M.N. Maisey, J. Hutton (Publisher: British Journal of Radiology), London, 1991, 27 pp, $13.50.

This booklet summarizes the techniques used in the evaluation of diagnostic performance. The format is more or less an extended outline that covers the traditional subjects of medical decision making as well as a brief but comprehensive outline of the potential impact of these procedures on the patient and society.

Medical decision making is presented by defining the concepts of sensitivity, specificity, false-positives/negatives, and receiver operating characteristic (ROC) curves. Similar material has been published many times in radiological literature. I have two reservations concerning this material. The first is that graphs representing normals versus diseased patients are presented by showing overlapping areas rather than displaying one above the baseline and the other below. This could lead to confusion because the area under each curve is proportional to the total number of patients, and this area decreases when the two curves are overlapped, giving the false impression that the number of patients is decreasing. This issue is discussed in more detail in an article by Brismar (Understanding-receiver-operating characteristic curves: a graphic approach. *AJR* 1991;157:1119-1121). Another problem arises in the discussion of ROC curves where the term "false-positive (FP) ratio" is used and could easily be confused with FP used in the discussion of sensitivity/specificity. The former is independent of disease prevalence, whereas the latter is not. The same publication mentioned above avoids this problem by labeling the horizontal axes of ROC curves as "specificity".

Another section of the booklet discusses aspects of medical care that are not often seen in radiological journals, but are quite important. This section alone makes the whole manuscript worth having in my view. First, from the viewpoint of an individual patient, the authors discuss the impact that a set of procedures might have on the patient, his family, and society. Some examples are financial costs (including direct costs of the procedure and any hospitalization as well days lost from work), risks of complications and/or pain, short- and long-term benefits, and alternatives. An analogous section covers the approaches that are used on groups of patients to evaluate clinical usefulness, such as clinical trials, use of data bases, and mathematical modeling. Finally, there are several pages that explain how to best utilize medical resources in today's era of cost containment and limited resources.

The last few pages are devoted to "errors" that might appear in medical literature and how the general reader might detect them.

This booklet would be useful for all persons who create and/or use medical imaging information for patient care.

Warren Phillips
Massachusetts General Hospital
Boston, Massachusetts

Textbook of Radiopharmacy: Theory and Practice. Charles Sampson, editor, Harwood Academic, New York, 1991, 388 pp, $130.00 (hard cover) and $40.00 (soft cover).

This text is the third volume in a series of monographs and texts in nuclear medicine. The series editor is Dr. Peter Cox of the Netherlands. This volume is edited by Mr. Charles Sampson of the United Kingdom.

As the title clearly states, this is a textbook that freely mixes the theoretical and practical aspects of radiopharmacy practice. The book's 388 pages are organized into 19 chapters and 2 appendices. The practical information presented draws primarily on the European experience since eighteen of the nineteen contributors are from the European Community.

The attraction of this text is that it departs from the organ by organ dissection of the body with radiopharmaceuticals com-