

red marrow calculated for activity distributed homogeneously in bone volume or with a surface deposited source, for 118 radionuclides. Other topics include absorbed dose in the female breast from a source in the lungs, the effect of age and sex distribution on effective dose equivalent, and excretion of radionuclides in human breast milk. An appendix lists, in order of energy, the possible gamma emitting impurities that may be found in technetium-99m pertechnetate. This is useful in interpreting gamma spectra in quality control studies.

The book is recommended to all nuclear medicine physicians and health physicists who are concerned with dosimetry, particularly those concerned with the effects of radiation in bone and breast.

JAMES S. ROBERTSON
*U.S. Department of Energy
Washington, DC*

RADIOACTIVE WASTE—PROCEEDINGS OF THE TWENTY-FIRST ANNUAL MEETING OF THE NATIONAL COUNCIL ON RADIATION PROTECTION AND MEASUREMENTS.

Bethesda, MD, NCRP Publications, 1986, 289 pp, \$20.00

THE NUCLEAR WASTE PRIMER—A HANDBOOK FOR CITIZENS.

I.P. Weber and S.D. Wiltshire, The League of Women Voters Education Fund. New York, Nick Lyons Books, 1985, 90 pp, \$11.95

Each year the NCRP Annual Meeting concentrates on a single topic; in 1985 that topic was radioactive waste. During the scientific session of the meeting a total of 15 papers were presented. The first paper, by M.W. Carter and D.C. Stone, is a superb cataloging of the "Quantities and Sources of Radioactive Waste" in the United States. The second paper, "Considerations of de minimis and Exempt Quantities", by C.B. Meinhold, is an excellent presentation on the topic of de minimis, but it had very little to say directly about radioactive waste. The remainder of the papers in the Scientific Session dealt with the problems posed by the various kinds of waste and with some of the political problems encountered in establishing radioactive waste sites.

John Harley gave the Lauriston S. Taylor Lecture, which dealt with the evolution of increased accuracy and precision in radiation measurements through the years. During the Scientific Briefing Session, a panel of regulatory agency representatives presented statements about how their agencies are approaching the disposal of hazardous wastes, both radioactive and nonradioactive. The Proceedings concludes with several reports of Committees and Task Groups who are nearing completion of future NCRP Reports.

The day after receiving the NCRP book for review, I was browsing through the new acquisitions shelves of my public library and stumbled onto the League of Women Voters book. I was pleasantly surprised to find a very well-written, balanced, objective presentation of the radioactive waste problem and suggestions by the League of Women Voters on how citizens can become involved in the process of influencing the siting of disposal facilities. The Primer is packed with facts about the sources and quantities of radioactive waste; it also provides

a brief definition of radioactivity and the effects of radiation on people. The writing level of the Primer is such that any intelligent layman should be able to come away from it with a good foundation for understanding the verbal fireworks that always seem to accompany public debate about radioactive waste.

The Primer should be read by every person who works in the field of nuclear medicine or who performs biological research. Radiation Safety Officers will want to have their hospital administrator read this book to give them a feel for the difficulties RSOs face in managing a radioactive waste disposal program. The NCRP Proceedings is a much more technical book that will be a valuable resource for those physicians, scientists, and technologists who are taking an active part nationally and regionally in the radioactive waste disposal debate. Every nuclear medicine clinic library should have copies of both books.

ANTHONY R. BENEDETTO
*University of Texas Medical Branch
Galveston, Texas*

IMMUNOSCINTIGRAPHY

L. Donato and K. Britton, Eds. New York and London, Gordon and Breach Science Publishers, 1985, \$49.00.

It has become a common practice to put together the papers presented in a symposium and publish them as a volume with minimal editorial efforts to integrate the papers and weed out those that do not deserve to be published. *Immunoscintigraphy* (Proceedings of the European Symposium on Immunoscintigraphy held at Saariselka, Finland, August 10–12, 1984) suffers from all the limitations of published proceedings of symposia (e.g., lack of continuity of themes, repetitions, lack of critical evaluation of the data presented and validity of the conclusions derived from such data, etc.). Furthermore, the papers presented in 1984 are already somewhat outdated and the volume is afflicted with more than the usual crop of printing errors.

Several papers discuss and summarize some of the basic aspects of immunoscintigraphy. Taylor-Papdimitriou and colleagues (page 1) discuss those characteristics of monoclonal antibodies (MABs) that make them ideal for tumor imaging.

The papers of Saccavini et al. (page 23), Sinn (page 37), Britton et al. (page 51), and Goedmans et al. (page 305) present some very useful information on the selection of radionuclides for tumor imaging, methods of linkage of radioiodines and other relevant radionuclides, and purification of labeled antibodies. The results obtained by Sinn with the use of N-bromo-succinimide (i.e., yields of up to 98% incorporation of ¹³¹I with very limited protein denaturation) are exciting and will be very useful if future investigations sustain these findings.

Callegaro et al. (page 101) have tried to provide an "experimental" protocol for processing MABs, optimizing the preparation and purification of IgG and F(ab)₂ fragments and radiolabeling with isotopes such as ¹³¹I, ¹²³I, ¹¹¹In, and ^{99m}Tc. Unfortunately, as observed in several laboratories including ours, each MAB (even of the same IgG subclass) appears to have different sensitivity to pepsin digestion and the method, therefore, has to vary for each MAB. The results from this