Medical Effects of Ionizing Radiation 1995. F.A. Mettler, ed., WB Saunders, Philadelphia, PA, 440 pages, 1995, $125.00.

Relative risk has found a place at the coffee tables of the 1990s. Educated people are astonished to find the risks of "dangerous" pastimes dwarfed by the cumulative hazards of more trivial pursuits. This dichotomy is nowhere more apparent than in the public fear of ionizing radiation. Recently, both the League of Women Voters and a group of college students ranked nuclear power as the most hazardous product or activity out of a list of thirty, even though its true ranking was twentieth, behind contraceptives and commercial aviation. Businessmen came closer to the mark, ranking it eighth. In this second edition of their text, the authors include a chapter discussing "Perception and Acceptance of Risk," and show how ionizing radiation tangles the web of media-inspired fears.

Mettler and Upton's book includes twelve chapters detailing radiation physics and biology, carcinogenesis, physiologic and medical effects of radiation, in-utero effects, estimation of the probability of causation and hormesis. The chapters covering the standard material are well-researched, inclusive and up-to-date. The chapter on hormesis, while necessarily short, provides a useful introduction to a controversial area. The concept of hormesis, or the beneficial effect of radiation, sounds almost as strange as Caesar's practice of drinking a little poison every day. Scientifically valid or not, however, the discussion of hormesis emphasizes the inclusiveness of this text.

Each organ system is fully covered and each type of radiation is catalogued by its effects at varying levels of exposure. The types of exposure discussed range from radon in basements to enhanced cosmic ray exposure during plane flights. From another perspective, the effects of exposure are discussed at whole organism down to the subcellular levels. In addressing issues of probability of causation, the authors describe an approach by which one can estimate the likelihood that radiation exposure contributed materially to an untoward medical event. They include several scenarios that might occur in clinical practice and show how the estimates are obtained. Throughout the book, abundant tables, charts and photographs document and clarify an organized exposition of the biological consequences of radiation exposure. The book concludes with a glossary, unit conversion tables and several useful charts documenting exposures from medical diagnostic studies.

This is a clearly written and well-referenced book. It is an up-to-date reference on a topic that worries many patients. The availability of information to alleviate such fears is well worth the price of the book.

James A. Scott
Massachusetts General Hospital
Boston, Massachusetts

Atoms, Radiation and Radiation Protection, 2nd ed. James E. Turner, ed. John Wiley & Sons, New York, NY, 555 pages, $69.95, 1995.

This book is an excellent text for graduate students in health physics, as it contains an appropriately detailed discussion about atomic and nuclear physics for such students. The detail, however, is likely to be more than most nuclear medicine or radiology residents would need. Major strengths of the book are that it contains rigorous discussions about radioactive decay, interaction of radiation with matter, statistics of counting and methods for shielding calculations. There are separate chapters on the interactions with matter for charged particles, electrons, photons and neutrons. Each chapter covers the subject in depth with detailed discussion of many points that are not discussed well in other commonly used textbooks in nuclear medicine. The chapters on radiation detection, dosimetry and biologic effects of radiation are somewhat more superficial. This too, may well be appropriate since this book is not intended to cover all aspects of radiation.

The main disappointment of the book, from the point of view of someone in nuclear medicine, is that there is minimal discussion about the dose calibrator or photomultiplier tubes. Dosimetry from external sources is explained in depth. Internal dosimetry is also approached from first principles and with reference to several ICRP publications. The MIRD publications are not referenced. A useful feature of the book is that there are numerous questions presented at the end of each chapter, many of which are very challenging. Answers are provided for about half of the questions. The book is likely to be useful to medical physicists and to others who are concerned with learning or teaching the details of the interaction of radiation with biologic matter and with shielding materials.

Michael M. Graham
University of Washington
Seattle, Washington

Clinical Nuclear Cardiology. George A. Beller, Saunders, Philadelphia, PA, 402 pages, $95.00, 1995.

This inclusive and up-to-date textbook of nuclear cardiology is composed of twelve chapters discussing the entire range of nuclear radiopharmaceuticals, imaging techniques and clinical applications. It is extensively referenced, well-organized and clearly written.

Among the twelve chapters are one each on radiopharmaceuticals and instrumentation in nuclear cardiology, five on various aspects of detecting and evaluating patients with coronary artery disease and individual chapters on pharmacological stress imaging, assessment of myocardial viability, evaluation of CABG/PTCA patients, extracoronary and congenital heart disease and gated imaging. PET and newer radiopharmaceuticals are integrated into a clinically-oriented radionuclide approach to cardiac disease.

Throughout the book, published clinical studies are inclusively presented and discussed, their conclusions integrated and summarized. Adequate detail is presented for the book to serve as a general reference. The author is careful to evaluate research in competing imaging methods, including ultrasound and MRI. The strengths and weaknesses of all of these are put into a reasonably impartial perspective. Image quality is generally good, with few color images thankfully, (like politicians, color images can appear to support almost any desired conclusion). An exception to this is the linear monochromatic "green scale" developed by Watson, a scale for which the author makes a convincing argument.

I devised an arbitrary test of inclusiveness by selecting two topics of clinical importance and at least locally partisan debate—radionuclide evaluation of adriamycin toxicity and the significance of pulmonary uptake on dipyridamole studies. There were two full pages devoted to each topic, six references for the former and eight