

paragraph.

For physicians who wish a clear, succinct, nonmathematical explanation of the principles of computed tomography, I recommend this book. It would be valuable for training technologists, and engineers and physicists will find it useful as an introduction to the subject matter, although their background and interest will likely carry them beyond the level of the material presented. Because of the clarity of the writing style and the well-organized presentation of ideas, the book may also be of interest to scientists and lay persons working outside the radiological sciences.

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**ATLAS OF TOPOGRAPHICAL ANATOMY OF THE BRAIN AND SURROUNDING STRUCTURES FOR NEUROSURGEONS, NEURORADIOLOGISTS, AND NEUROPATHOLOGISTS.** W. Seeger. Vienna, Springer-Verlag, 1978, 544 pp, \$164.00

This book represents a prodigious amount of work on the part of the author. Remarkably, not only did he write the text, but also drew the illustrations. In the atlas, he has integrated basic neuroanatomy, radiology, and microsurgical techniques. This approach is applied, in consecutive chapters, to the following areas of the brain: frontal lobe and upper brainstem, temporal lobe and upper brainstem, parietal lobe, occipital region and lamina quadrigemina, supratentorial structures near the ventricles, and cerebellum and lower brainstem.

The illustrations are high density, pen and ink, line drawings. Much of this artistic endeavor is of superb quality. Some of the more complex drawings, however, attempt to incorporate more detail than is easily possible with this particular technique, resulting in a loss of clarity. The book is so encyclopedic and detailed that it must be studied and digested in small pieces. It represents a valuable reference text that should be considered for every neurosurgery department library.

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**REEVALUATION OF DOSIMETRIC FACTORS: HIROSHIMA AND NAGASAKI.** V. P. Bond, J. W. Thiessen, Eds. DOE Symposium Series 55, CONF-810928, Washington, D.C., Technical Information Center, Department of Energy, 1982, 306 pp, \$15.75

This 300-page paperback is an intriguing synopsis of 30 yr of effort directed toward a dosimetric reconstruction of the events immediately following the bombing of Hiroshima and Nagasaki in 1945. This report is from the DOE symposium held in Germantown, Maryland, in September of 1981 and published in October of 1982. The purposes of the symposium were to (1) determine the current status of research efforts, and (2) assess the levels and directions of research efforts in the immediate future. The major concern of the group is to provide dosimetric support for the Radiation Effects Research Foundation (RERF) of Hiroshima and Nagasaki. Research in this area has been in a state of turmoil in the last few years because of the series of recalculations of the neutron and gamma dose rates at ground level in the two cities. In particular, new transport code calculations of the attenuation in the rather severely disturbed air around the explosion, and Monte Carlo calculations of the effects within the two very different devices have led to a reduction in the estimated neutron dose in the low-dose regions. This has brought all of the predictions about both neutron- and gamma-induced effects (e.g. leukemia, chromosomal aberrations, solid tumors, etc.) to an impasse while the dosimetry

question is settled, which may take several years. In the meantime, such questions as the RBE of low dose rate neutrons are left without much supportive data. One pressing issue, for example, is how to include body and structure shielding effects.

As with most symposia, the best part of the published proceedings comes in the discussion sessions. This is particularly true in this instance since most of the material presented in the formal presentations has appeared in *Science* or *Nuclear Engineering* over the past several years. There is also some good discussion of the principles of radiation biology and microdosimetry, but no conclusions are reached.

There are several legal and ethical questions raised, which stimulate the reader's mind beyond the confines of physics and dosimetry. For example, the reassessment of dose may greatly affect the government expenditures to survivors, which are based on those doses. In another discussion, it was mentioned that one 12 Kton explosion in the atmosphere, under the proper conditions, would answer a lot of the dosimetry questions at a fraction of the cost of ongoing studies. It was also mentioned that many of the parts (presumably spare parts) of the original "little boy" and "fat boy" bombs still exist.

I recommend this book on the basis of its discussion sessions and as a review for those who are not intimately involved in this work.

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**RADIATION: WAVES AND PARTICLES/BENEFITS AND RISKS.** L. Pringle. Hillside, New Jersey, Enslow Publishers, 1983, 62 pp, \$8.95

This is a nontechnical book about radiation directed toward a nonscientific audience. Its author is a wildlife biologist who, according to remarks on the dust jacket, has written "many outstanding science books for children," and, indeed, the level and style of the book seem to be about right for high school students.

The book comprises some 60 pages, divided into five chapters, plus a glossary of terms, an index, and recommendations for further reading. The five chapters are: "The Range of Radiation," discussing the nature of radiation and the place of x-rays in the electromagnetic spectrum; "It's Only Natural," describing environmental sources of ionizing radiation; "X-rays," describing different uses of x-rays, including TCT scanning, and containing representative examples of TCT scans and other x-ray images; "Radioactivity," discussing various sources of nuclear radiation, including nuclear power, nuclear weapons, and two pages on nuclear medicine imaging and therapy; and, finally, "Low Level Risks," discussing the various risks of radiation exposure with emphasis on cancer, genetic mutation, and teratogenic effects. Sources of risk-data, such as the Japanese A-bomb survivors, are mentioned, but the presentation generally is nonquantitative, with attention focussed on cataloging and describing risks and effects, rather than on quantitative discussion of the actual magnitudes or risks.

A book on radiation and its effects, directed toward a younger audience, could be a useful addition to school libraries, waiting rooms in doctors' offices, and perhaps even some home libraries. Because of the style and intended audience and because I thought the topic would be an interesting one, I decided as a first experiment to ask my teenage daughter to read the book and give her impressions of it. Alas, the experiment was unsuccessful, because she could not complete more than two pages at a sitting without dozing off, or recalling a more urgent priority, such as "fixing her hair." This, I fear, reflects more on the subject matter of the book than on its literary style, and, for the moment, I am resigned to the