

starting in the subject. The discussions are brief, to the point, and with very little expansion or further analysis of the presented statements. The magnetic resonance imaging (MRI) scans are acceptable, but below current published standards. The chapter on "Basic Principles of MRI" is simple and to the point. It would be good for the beginner. The chapter "Disease of the Hip and Pelvis" emphasizes the hip almost exclusively with very little on pelvis. Discussion and presentation on "Avascular Necrosis (AVN)" is excellent. The chapter on "The Extremities" is acceptable, but it concentrates on knees and with little on the other extremities. The chapter on "Evaluation of the Soft Tissues" has many brief generalities with no meat. The chapter on "The Spine" has little in-depth discussion of the problems. It does have some interesting cases but the MRI scans are generally of poor quality.

In summary, this book is valuable only to the very basic learner. It promises MRI of musculoskeletal, but delivers a narrow approach. There is case illustration with a good section on AVN, but other areas are not as complete as the title implies.

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#### RADIOLOGICAL PHYSICISTS.

*J.A. Del Regato. New York, American Institute of Physics, 1985, 188 pp*

Today, educators place increasing emphasis on attainment of attitudinal objectives as well as knowledge objectives to facilitate the learning process. For learning or reviewing modern physics, this volume would be a perfect supplementary text to develop insight into the human side of scientific endeavor. Juan del Regato, in providing an in-depth look at the personalities and lives of Roentgen, M. Curie, Planck, Rutherford, Bragg, Duane, Bohr, Joliot, Compton, and Fermi has also charted the scientific development just prior to and during the first half of the century in what is the foundation to radiological physics. Practicing or aspiring chemists, physicists, and physicians in radiology and nuclear medicine as well as general readers will be inspired by this look into the lives of these scientists.

In addition to the biographies that are an expansion of ten earlier articles in the *Intl J Radiat Oncol, Biol and Phys*, del Regato has included biographical paragraphs on 69 scientists who collaborated extensively with the principle subjects. A notable omission from this list (as indeed from the list of biographies) is the name of Einstein. The biographies, however, include numerous accounts of Einstein's involvement in the lives and work of these scientists. Perhaps most interesting to professionals in nuclear medicine is the biography of Jean

Frederic Joliot—as well as that of his wife Irene Curie—who jointly won the Nobel Prize for Chemistry for the discovery of the synthesis of radioactive isotopes.

This book is well-written and is easy to read. Its general appearance suggests that it might be purchased as a gift. The occasional expositions of science are easy to understand, and photographs and interesting sketches and diagrams add a special flavor. Repetition of some events or encounters is noticeable, but this is perhaps to be expected considering that often these scientists were close in time, locale, and goal. An index and additional cross referencing through the subject notes would be helpful to the reader who wants to retrieve an interesting account from another point in the book. An adequate number of references are included. This book is a pleasure to read. I would recommend that you read and then share it.

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#### Books Received

**1986 Year Book of Diagnostic Radiology.** *D.G. Bragg, Ed. Chicago, Year Book Medical Publishers, 1986, 599 pp, \$44.95*

**Basic Imaging in Congenital Heart Disease, 3rd Ed.** *L.E. Swischeck, D.W. Sapire. Baltimore, Williams and Wilkins, 1986, 312 pp, \$58.95*

**Computed Tomography.** *J. Alexander, W. Kalender, G. Linke. Berlin, Siemens, 1986, 175 pp, \$45.00*

**NMR in Biology and Medicine.** *S. Chien, C. Ho. New York, Raven Press, 1986, 275 pp, \$56.00*

**1986 Year Book of Nuclear Medicine.** *P.B. Hoffer, J.C. Gore, A. Gottschalk, Eds. Chicago, Year Book Medical Publishers, 1986, 411 pp, \$44.95*

**Nuclear Medicine in Urology and Nephrology, 2nd Ed.** *P.H. O'Reilly, R.A. Shields, H.J. Testa, Eds. London, Butterworth & Co., 1986, 291 pp, \$135.00*

**Diagnostic Nuclear Medicine: Patient Studies.** *H.N. Wagner, J.W. Buchanan, D. Espinola-Vassallo. Chicago, Year Book Medical Publishers, 1986, 430 pp, \$54.95*

**Nuclear Magnetic Resonance Imaging in Medicine and Biology.** *P.G. Morris. New York, Oxford University Press, 1986, 388 pp, \$59.00*

NMRI or MRI ? Magnetic resonance imaging (MRI) is an imaging technique used primarily in medical settings to produce high quality images of the inside of the human body. MRI is based on the principles of nuclear magnetic resonance (NMR), a spectroscopic technique used by scientists to obtain microscopic chemical and physical information about molecules. The technique was called magnetic resonance imaging rather than nuclear magnetic resonance imaging (NMRI) because of the negative connotations associated with the word nuclear in the late 1970's. This package presents a comprehensive picture of the basic principles of MRI. Before beginning a study of the science of MRI, it will be helpful to reflect on the brief history of MRI. Magnetic Resonance Imaging (MRI) is a non-invasive imaging technology that produces three dimensional detailed anatomical images. It is often used for disease detection, diagnosis, and treatment monitoring. It is based on sophisticated technology that excites and detects the change in the direction of the rotational axis of protons found in the water that makes up living tissues. How does MRI work? MRI of a knee. MRIs employ powerful magnets which produce a strong magnetic field that forces protons in the body to align with that field. When a radiofrequency current is then pulsed through the p