

the accompanying text is merely a commentary." But, in fact, Leonardo's anatomical drawings of the heart show clearly and in detail a series of passages through the septum of the heart which do not exist, but which had been hypothesized by Galen in order to explain how blood may trickle from the left ventricle to the right ventricle through an apparently solid septum. And the female "situs" figure (or "transparent torso of a woman") reproduced in Ziman's text, far from illustrating his

thesis about careful observation, is described by Saunders and O'Malley in their authoritative work on Leonardo's anatomical researchers as "a unique attempt to represent in graphic form both anatomical detail and certain of the principles of the Galenical physiological system." Furthermore, "the anatomical details" themselves are not drawn from human bodies but, "for the most part from dissections made on animals." In the final section Ziman turns from "the world of science" to

"social knowledge." Here an evaluation is made of the "scientific status" of "intellectual disciplines such as *social psychology, sociology, anthropology, and economics*." Ziman finds that these disciplines are not like physics and convinces himself that they never will or can be. But he does not even consider the possibility that a future science of behavior of society may be like a physics of the future (as different from today's physics as today's is different from the physics of the past); nor does he believe that there may be valid science which is not like physics.

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An Introduction to Radiation Dosimetry

S. Lovell

125 pp. Cambridge U., New York, 1979.
\$18.50 clothbound, \$5.50 paperbound

The health sciences rely heavily upon developments in the allied physics and biophysical fields to attain their goals—the unraveling of the mechanisms of life and its degradation through disease, and lengthening of human lives through diagnostic and therapeutic intervention. The importance of ionizing particulate and electromagnetic radiations in medical research and clinical medicine exemplifies this fact, while the recent Nobel awards for radioimmunoassay and computed tomography dignify it. In this context, disappointing, non-mathematical textbooks on the physical principles underlying radiation dosimetry such as S. Lovell's *An Introduction to Radiation Dosimetry* cannot be expected to provide the insight to this field required by radiation technologists, junior scientists and physicians.

The author, who is at the Medical College of St. Bartholomew's Hospital, London, introduces general topics well; the interactions of ionizing radiation with atoms, the use of special radiation dosimetric quantities and units (for instance, absorbed dose and exposure) and measurement techniques such as cavity ionization, thermoluminescent and photographic dosimetry are reasonably summarized. Unfortunately, Lovell's introductory contribution is primarily a preface to the dosimetry problems associated with radiation protection and other health physics aspects of the utilization of radiation in medicine. The author should have drawn from real-life applications of ionizing radiation in the areas of diagnostic radiation, nuclear medicine and radiation oncology to clarify his topics. For example, could have illustrated radiation-matter interaction with examples of the utilization of electrons, negative pi mesons, fast neu-

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trons and protons to fight tumors. Computed tomography would have served as an excellent example of the application of radiation attenuation principles to both diagnostic and radiation oncology capabilities. Instead, virtually no examples are presented, let alone these. Neither is there a discussion of the dosimetry problems related to internally ingested radionuclides. The advent of emission tomography and the growth of clinical radioisotope procedures make this a glaring omission.

The reader will find the book singularly unique in its adherence to the new system of SI units for radiation dosimetry. Nevertheless, the reader who wishes to find an introductory presentation of radiation dosimetric principles and techniques in the medical field would be ill-advised to select Lovell's book over more comprehensive, albeit more difficult texts such as H. E. John's and J. R. Cunningham's *The Physics of Radiology*.

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book notes

Experiment, Theory, Practice: Articles and Addresses. P. L. Kapitza. 449 pp. Reidel, Hingham, Mass. (second Russian ed., 1977). \$47.35 hardbound, \$14.75 paperback.

This collection of writings by Nobel laureate physicist, Peter Leonidovich Kapitza, reveals his diverse interests. The book is divided into seven parts and concludes with a complete bibliography of Kapitza's publications. Part one includes an article on strong magnetic fields, a description of his original helium liquefaction plant, an account of his famous experiments with superfluid helium and a discussion of some problems associated with the production and use of oxygen. The second section describes the early days of the Institute of Physical Problems in Moscow, which he helped found in 1934. The following two parts are concerned with Kapitza's beliefs about the organization and planning of science and his ideas on education. Five articles on Kapitza's teacher, Lord Rutherford, comprise the fifth division of the book. Part six contains a number of articles on various scientists, such as Benjamin Franklin, Paul Langevin and L. D. Landau, while philosophical discussions of peace, disarmament and the energy crisis make up the final section.

Physical Principles of Audiology. P. M. Houghton. 216 pp. Hilger, Bristol, UK, 1980 (US dist.: Heyden, Philadelphia, Pa.) \$28.00

Volume 3 of Adam Hilger's "Medical Physics Handbook" series, *Physical Principles of Audiology*, provides a concise introduction to the field for medical physicists and graduate students. The book covers the fundamentals of acoustics, the anatomy and physiology of the human ear, the nature of hearing and its measurement, hearing disorders and hearing aids. In addition, the volume includes tables of audiometric

data and a list of international standards relating to audiology.

Handbook of Refractory Compounds. G. V. Samsonov, I. M. Vinitskii, eds. 567 pp. IFI/Plenum, New York, 1980 (first Russian ed., 1976). \$75.00

The compilers of this handbook, Grigori V. Samsonov and Igor M. Vinitskii, state that "the term refractory can

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