

Books

Radioisotope Therapy

A Manual of Artificial Radioisotope Therapy. Ed. by Paul F. Hahn. 310 pp. Academic Press, Inc., New York, 1951. \$6.80.

This book is directed on the one hand to physicists desirous of obtaining a quick review of the biophysical aspects of therapy using radioactive isotopes, and on the other hand to clinical radiologists who desire a briefing on present procedures. The table of contents includes chapters on terminology and standards for the use of radioactive isotopes, dosimetry, use of radio-phosphorus in the treatment of polycythemia vera and the leukemias, use of radioactive iodine in the diagnosis and treatment of hyperthyroidism and in the study and treatment of carcinoma of the thyroid, radioactive colloids in the treatment of lymphoid-macrophage diseases, tumor therapy by direct infiltration of colloidal gold, instrumentation for a therapy program, health physics, autoradiography, the availability of isotopes and means of procurement, and the planning of the radioisotope program in the hospital. The distinguished list of contributors includes: A. H. Dowdy, R. D. Evans, P. F. Hahn, E. H. Quimby, C. F. Stroebel, B. E. Hall, J. B. Hursh, J. W. Karr, R. W. Rawson, J. B. Trunnell, R. L. Weiland, K. C. Morgan, C. P. LeBlond, J. Gross, C. V. Brastrup, and P. C. Aebersold.

It can be seen that coverage in this field is adequate and that in this one book sufficient information should be available for most readers to make a good sampling of the field of radioisotope therapy. The general quality of the articles is good and the reliability of the material presented guaranteed by the reputations of the contributors.

In a rapidly developing field such as this one, it is inevitable that a manual of this type cannot hope to avoid obsolescence in a rather short time. However, prior to the publication of the present volume no book was available in which representative tested procedures were gathered together for examination as a whole.

A unique and useful feature is a chapter on the criteria for the use of radioactive isotopes. The writer, P. F. Hahn (who is also the editor), has not been timid about approaching his subject. Thus, on page 23: "with little risk of disagreement one might categorically state that had radium been discovered in the past five or ten years rather than thirty years ago it would never have been used in the treatment of a single tumor." Many conventional radiologists will rise in anger at this state-

ment. Nevertheless, Dr. Hahn continues on to make a strong case for this statement. This is a fair indication of the general style of the chapter and of the provocativeness of some of the material.

It is to be hoped that this book will accomplish the purpose of stirring up interest and excitement among the clinical radiologists, thereby provoking some of them to examine concepts with which they had been comfortable for so many years. The recent developments in radiation physics with their accompanying proliferation into the field of radiology require much more extensive training of radiologists than has been available in the past. It is quite evident that books such as this one are needed to help in indoctrination and education.

Quite probably a definitive volume or manual on radiotherapeutic procedures will not be possible for a long time. In the present state of development of the field, the present volume should be very useful for easing practitioners, both physical and medical, past the many initial hurdles which they may encounter.

Martin D. Kamen
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Cosmogonous

The Origin of the Earth. By W. M. Smart. 239 pp. Cambridge University Press, London, 1951. \$2.75.

Apparently it is one of the required functions of English astronomers to write popular accounts of their work. Eddington and Jeans come to mind immediately as perhaps the most notable examples of this predilection, and it would seem on the basis of this volume that Professor Smart is well qualified to follow them in this direction.

The title of the book is in a sense misleading, since only one chapter of the ten is specifically concerned with the origin of the earth and of the solar system. In the others, everything from paleontology to astrophysics which has any degree of relevance is discussed, not excluding the atomic bomb. The author has an extremely engaging style, intelligent and lucid, which, although no previous knowledge of the subject is assumed, nevertheless does not condescend to its intended audience. On the whole, the material is presented in an easily comprehensible manner, and comparatively little, no matter whether seemingly simple or abstruse, that is necessary for complete understanding to the layman is neglected or merely glossed over.

The first few chapters are concerned principally with a description of the solar system and its contents. The known characteristics of the sun, the earth itself, the various planets and satellites, comets, and meteors are covered, along with the methods employed in the determination of some of their less obvious features. One inexplicable omission here is the lack of any mention of Bode's law of planet distance, which was in the past one of the most influential empirical laws of the solar system and which has relevance today in connection with theories of the origin of the solar system.

The next section of the book deals with the ages of the earth and a number of astronomical bodies, and with the various means of estimating them. The geological and physical evidence is summarized, and the usefulness of procedures involving natural radioactive substances is discussed very clearly; in this latter connection a brief but comprehensive exposition of atomic and nuclear structure is given. Finally, astronomical and astrophysical data are considered in relation to the history of the sun and the planets.

The many different hypotheses of the origin of the solar system come in for a critical review at this point, mention being made of the significant trends in cosmogonical thought from Kant and Laplace to von Weizsäcker, Alfvén, and Hoyle in the present day. A short epilogue serves to conclude the book, summarizing the previous material and introducing recent developments in cosmic rays and astrophysics.

This extremely abbreviated account of the contents of *The Origin of the Earth* is hardly adequate to describe the work of correlation and integration of the many aspects of scientific endeavor that make up its substance. Much of the material may already be familiar to persons with some degree of technical sophistication, but for those with no such pretention a better introduction to the many facets of modern astronomy could not be imagined. There is a quotation from Barrie on one of the last pages to the effect that "the man of science appears to be the only man who has anything to say just now, and is the only man who does not know how to say it." At least the latter part of this observation must admit of a number of exceptions, among whom the author of this volume deserves a place.

Arthur Beiser
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Briefly Noted

Engineering Research Review

Published by the Engineering College Research Council of the American Society for Engineering Education, the *Review of Current Research and Directory of Member Institutions* outlines the policies and activities of engineering research in the 91 colleges and universities holding membership in the ECRC. Data are furnished for each school on complete research project titles, the names of responsible research administrative officers, policies governing research projects and contracts, the number of personnel engaged in research activities, the annual expenditures, and special conferences and short courses of interest to research workers. Orders for the *Review* (PB 103 947, \$2.25) should be addressed to the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

The AEC's Semiannual Reports

Covering the unclassified progress and activities of the Atomic Energy Commission from its establishment in January 1947 to January 1951, a 40-page index of the AEC's first nine semiannual reports to Congress,

submitted in January and July of each year in compliance with the requirements of the Atomic Energy Act of 1946, is now available at 20 cents a copy through the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The last six semiannual reports, beginning with July 1948, have included detailed accounts of the following specific fields of AEC operations: the isotopes production and distribution program; the production of fissionable material; research in the life sciences; physical science research; control of radiation hazards in AEC operations; and the Commission's contract policies.

The ninth semiannual report to the Congress summarizes the AEC's program operations for 1950 and also provides a review of the methods which the Commission follows in setting up contracts with industries, research institutions, universities, and colleges. The report (158 pp.) may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. for 40 cents per copy.

Physics of Lubrication

The edited progress report on a symposium on the physics of lubrication held jointly by the British Rheologists' Club and the Manchester and District Branch of The Institute of Physics in Manchester from June 29 to July 1, 1950, has been issued as Supplement No. 1 to the *British Journal of Applied Physics*. The report contains a total of eighteen papers and is divided into two sections, the first of which deals with hydrodynamic lubrication and the rheology of lubricants, and the second with boundary layer and extreme pressure lubrication. The Manchester and District Branch of The Institute of Physics has held a symposium each year on some branch of applied physics, with the object of bringing together specialists from industrial, government, and university laboratories. It is expected that reports of future symposia of this nature will continue to appear as supplements to the *British Journal of Applied Physics*. (96 pp. The Institute of Physics. Unwin Brothers Ltd., London, January 1951. 15 shillings).

Nuclear Data

A collection of experimental values of half-lives, radiation energies, relative isotopic abundances, nuclear moments, and cross sections was compiled last year by the National Bureau of Standards Nuclear Group with assistance from groups at Brookhaven National Laboratory, University of California Radiation Laboratory, Massachusetts Institute of Technology, and Oak Ridge National Laboratory. It is intended to fill the need for a periodic "census", as NBS director E. U. Condon remarks in the Foreword, to keep track of the newly identified members of the nuclear population. *Nuclear Data*, NBS Circular 499, can be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. for \$4.25. This price also includes three supplements which include data reported during the three six-month periods ending July 1, 1950, January 1, 1951, and July 1, 1951.