"An essential reference text in radiobiology . . ."

RADIATION BIOLOGY AND MEDICINE

Selected Reviews in the Life Sciences

Edited by WALTER D. CLAUS

"There are 33 articles by a total of 56 contributors to make this new book on radiobiology an excellent compendium of the most recent ideas and experimental findings in the field. In addition to being an important collection it is noteworthy for its price which is about half of what one would expect to pay. Only two of the many remarkable highlights can be mentioned here. First, is the unique section on Mathematical Biology comprising 3 chapters: Rashevsky, Yockey, and Sacher respectively survey the subject in three major directions. A second highlight is the section on Radiation Safety comprising 4 chapters, the first . . . a very timely discussion of 'The Concept and Philosophy of Permissible Dose.'

The material is well documented . . . the reading is easy and is facilitated by a detailed table of contents and an adequate index . . . so readable a book which is also an essential reference text in radiobiology."

Physics Today

"Serves a real function in bringing together an up-to-date account of the impact of atomic energy on such diverse fields as genetics, physiology, agriculture, and medicine, to name but a few, as well as on such varied but related problems as growth and aging, ecology, and bioeconomics . . . the coverage is excellent . . . the basic material presented in this book should go far in providing factual information for the intelligent reader concerned about radiation hazards."

Journal of the American Medical Assn.

944 pp, 195 illus, 1958—$12.50

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Reading, Massachusetts, U.S.A.

seemed as though a gulf might develop between the practitioners of statistics, with their ingenious and complicated algorisms, and the mathematicians investigating the significance of the concepts basic thereto. It is therefore gratifying to observe that this presentation by Prof. Brunk, which bids to become a standard introductory textbook, combines an extensive introduction to probability theory, with the more standard exposition of statistical techniques.

The section on probability theory includes a chapter on elementary and general probability spaces and on the notion of independence, which is followed by a discussion of random variables and their combinations and concluded by a description of the algebra of independence.

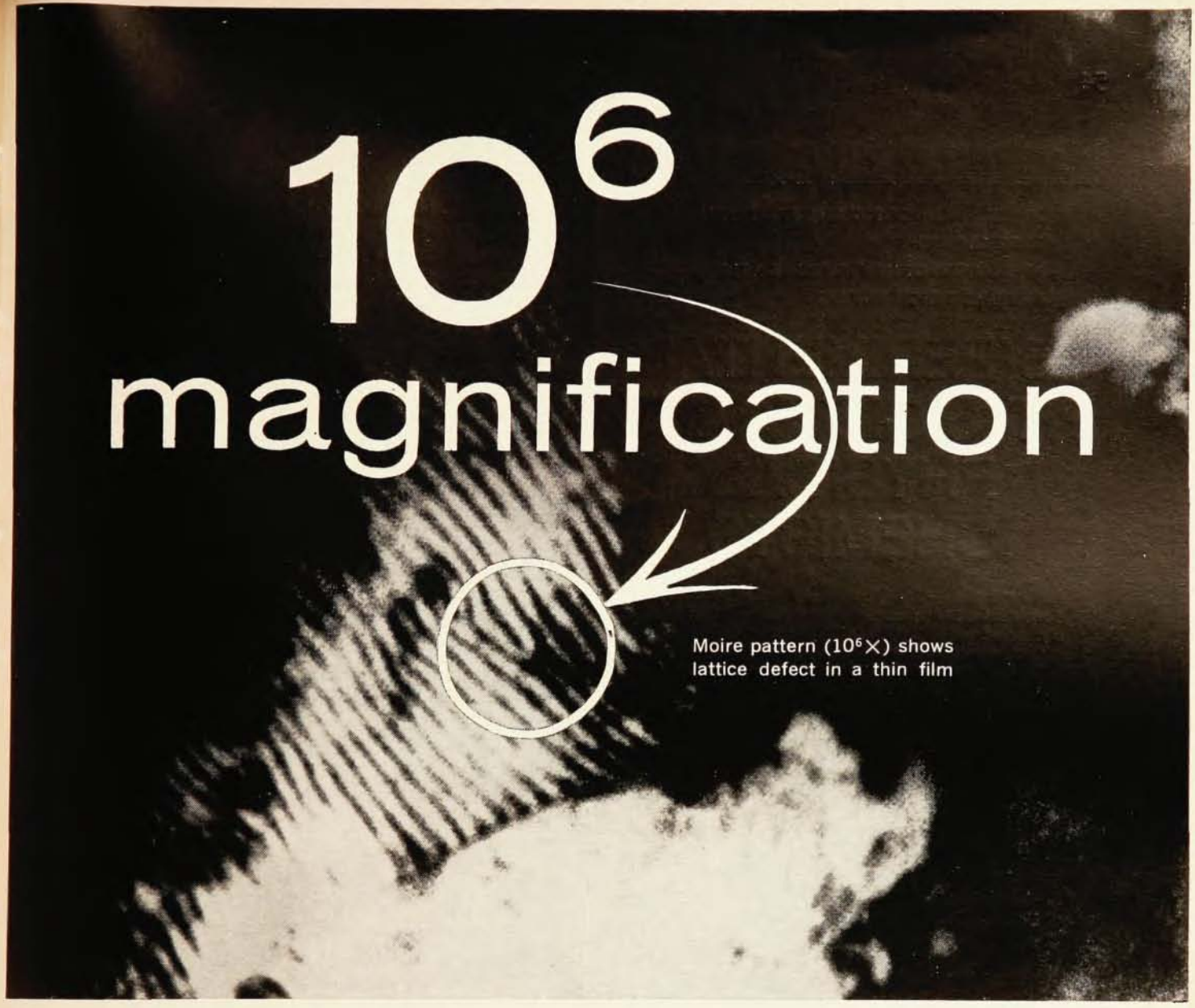
The statistics portion consists of two parts. The first of these comprises an elementary course in statistics, including such topics as random sampling, law of large numbers, estimation of parameters, central limit theorem, and confidence intervals and tests of hypotheses. The remaining portion, which is interspersed with the above, deals with more advanced questions, such as statistical decision theory, regression, sampling from a normal population, experimental design and analysis of variance, distribution free methods, and others. The presentation generally recognizes that statistics is an application of probability theory, not simply a collection of increasingly elaborate algorisms.

A desirable characteristic of the book is the extensive use of examples as part of the text, generally worked out in detail and with full discussion. In addition, each chapter closes with a good selection of problems for the student.

The style is lively but puzzlingly inhomogeneous. One sentence may be formal and impersonal, the next informal, and the next discursive and addressed to the reader. Possibly this results from the extensive use of lecture notes as the basis for the book, and while it is sometimes a little irritating it does not detract in any essential way from the general readability and obvious utility of the work as a whole.

Annual Review of Nuclear Science, Volume 9. Edited by Emilio Segrè, Leonard I. Schiff, Gerhart Friedlander, Walter E. Meyerhof. 625 pp. Annual Reviews, Inc., Palo Alto, Calif., 1959. $7.00 in US; $7.50 elsewhere. *Reviewed by Jacques Romain, Brussels, Belgium.*

ANNUAL reviews are a most valuable reference when they are written with the two following needs in mind: to provide the specialist of the field reviewed with a consistent exposition of the recent progress and a complete survey of the literature, and to give the specialist of a neighboring field the opportunity to gain a good idea of the advances made during the year. Both of these requirements are undoubtedly satisfied by the present book. The surveys of literature are concluded at dates ranging from December 1958 to July 1959. Some of the articles are highly technical,



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others are easier to read, but of course none are intended for the layman.

The topics covered are as follows: nuclear photodisintegration (D. H. Wilkinson), a highly technical paper not meant to be self-contained; the pion-nucleon interaction and dispersion relations (G. F. Chew) and strange particles (L. Okun'), more self-contained; the experimental clarification of the laws of beta radioactivity (E. J. Konopinski); high-energy nuclear reactions (J. M. Miller and J. Hudis), experimental and descriptive rather than theoretical; technetium and astatine chemistry (E. Anders); solvent extraction in radiochemical separations (H. Freiser and G. H. Morrison); nuclear fission (I. Halpern), fairly detailed and easy to understand; electronics associated with nuclear research (H. W. Kendall); high-temperature plasma research and controlled fusion (R. F. Post), a general survey from both theoretical and experimental standpoints, with the emphasis on the importance of basic research; fast reactors (L. J. Koch and H. C. Paxton); economics of nuclear power (J. A. Lane); vertebrate radiobiology (R. Rugh), a survey of experimental results in embryology; biochemical effects of ionizing radiation (M. G. Ord and L. A. Stocken); and cellular radiobiology (K. C. Atwood).

The indexes of authors and of subjects are very carefully prepared, as is indeed the whole book. A nice volume, not expensive at all in comparison with the value of its contents.

The Search for Order: The Development of the Major Ideas in the Physical Sciences from the Earliest Times to the Present. By Cecil J. Schneer. 398 pp. Harper & Bros., New York, 1960. $6.00. *Reviewed by I. Fankuchen, Polytechnic Institute of Brooklyn.*

HENRY Margenau, professor of physics and natural philosophy at Yale University, has written a four-page foreword to this volume. The things he liked about the book are those which I like. I suppose it is not the province of a person writing a foreword to say what he doesn't like!

Dr. Schneer has given us a most interesting book, one in which he develops the major concepts of physical science and mathematics in a very personal and often stimulating way. Biology and the life sciences, important as they are, are mostly avoided; when touched upon, we are often told things which simply are not so: e.g., that "The individual protein molecules do not seem very far from the filterable viruses which are indubitably life" (p. 153).

The dust jacket informed the reviewer that the author is a fellow crystallographer, hence a sympathetic attitude was automatically established. But a reading of the book suggested that Dr. Schneer must also be, for example, a member of the antivivisectionist society: "The great leap from electrostatics to electricity in the form of a current of charge was an advance due to the humble frog. That Job of the animal kingdom, as he was styled by Claude Bernard, has been subjected to