ν and $\pi \rightarrow e + \nu$). Surely the author does not mean that there is no experimental information, and as for theory, what was the paper of Marvin Goldberger and San Treiman (*Phys. Rev.* **110**, 1178 (1958)) about? I am told that this paper was not much believed at first—maybe that is why the author ignores it. Also, because of the date of publication, many recent theoretical developments (covered in Lee's book, such as N. Cabibbo's revision of the idea of "universality") are absent.

This book deals with more subjects than Lee's book, for example mesomolecular phenomena. To repeat what I said in the beginning, it is incomparably more detailed than Lee's book—with the exception noted—in the description of the experiments, especially the early experiments. But as an up-to-date scientific treatise, it is *not* comparable to Lee's book.

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Ubiquity and utility of statistics

STATISTICAL CONTINUUM THEORIES. By Mark J. Beran. 424 pp. Interscience, New York, 1968. $17.50

by STUART A. RICE

With the continued evolution of science there is a growing understanding of the ubiquity of statistical concepts and of the wide utility of statistical method in the description of systems with many degrees of freedom. For example there now exist, in addition to the classical statistical mechanics of particles, statistical-mechanical theories of ecology, of control mechanisms and of neuronal behavior.

In Beran's book, four problems are used to demonstrate the utility of statistical methods in studies of systems with many degrees of freedom, the differences and similarities among disparate systems, how these differences may be used to provide essential simplifications and approximations and so on. The four problems studied are: the theory of partial coherence, the theory of heterogeneous matter, flow through porous media and turbulence. The book begins with a very good mathematics introduction that describes functional and probabilistic concepts and related material. This review is followed by a description of the general formulation of the statistical method, in which the derivation of functional equations is particularly clear and thorough because the derivation is physically motivated and not mathematically rigorous. The author then discusses a variety of interesting truncation procedures including their limitations. The book concludes with four chapters that deal with the application of statistical methods to the four problems mentioned above. The treatment of each application is up to date and clean.

It appears to me that *Statistical Continuum Theories* is an extremely useful addition to the literature. A study of this book will reward those who seek greater insight into the relationship between macroscopic variables and microscopic dynamics in a variety of systems.

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Radiology and nuclear war

RADIOLOGICAL PROTECTION OF THE PUBLIC IN A NUCLEAR MASS DISASTER. (Symp. Proc., Interlaken, Switzerland 26 May–1 June 1968). 688 pp. Fachverband für Strahlenschutz.

by NORMAN A. BAILY

These symposium proceedings cover a wide variety of topics connected with the contingency of a nuclear accident or bombing. The problems connected with either a nuclear accident or nuclear war are serious ones, and the topic deserves considerable attention. Unfortunately, although the growth of nuclear power plants is very rapid and seems certain to grow at an even more rapid rate in the future, the papers deal mainly with nuclear war.

Although many well known people contributed to the symposium, very little new material was presented. In

fact, most of the material is available in other publications. What new considerations are presented are directed at the expert or the administrator, as might be expected in this type of meeting. More than one-third of the papers are printed in either German or French with 18 out of 62 in German. The main value of this volume to a reader who did not attend this symposium is the large number of detailed references covering all phases of the problem.

The papers cover such diverse fields as: planning; fall-out patterns; nonnuclear accidents involving nuclear materials; fall-out assessment and measurement; the hazards associated with charged-particle emission; biological and clinical manifestations; measurement requirements; dosimetry; food contamination and systems analyses. These proceedings are useful to persons directly concerned with civil defense and disaster planning, as the volume does represent the latest thinking of experts.

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Acoustics for engineers

SIMPLE AND COMPLEX VIBRATORY SYSTEMS. By Eugen Skudrzyk. 514 pp. Pennsylvania State Univ. Press, University Park, 1968. $24.50

by GEORGE WEISS

It is well at the outset to state the scope of this book, as the title is not too suggestive. The author deals with the acoustics of linear systems, with emphasis on the vibration of plates, beams and more complicated configurations. In the introduction the author gives a short exposition of modern circuit theory, and throughout the book he exploits those results fully by the use of electrical analogies to mechanical circuit problems.

The book itself is obviously intended for the engineer rather than for the physicist. Indeed, the explanation and derivation of underlying physical laws is sketchy in the extreme and will not satisfy any scientist who wants insight into the physics of vibratory phenomena. Particularly disturbing is the lack of any mention of nonlinear effects in vibration. Although variational methods for dealing with acoustic problems are mentioned, and there have been substantial recent advances in the subject, nothing is done with the methods. An entire chapter is devoted to statistical force fields. The discussion, however, is presented in a very heavy-handed manner and is principally devoted to the calculation of second-order correlations and spectral densities. There is little insight, for the reader who is unfamiliar with the topic, into such important topics as the generation of sound by turbulence. On the other hand, a chapter devoted to the sound radiation by complex structures is quite good and reflects the author's own research.

To summarize, this book would be quite unsatisfactory as an introduction to acoustical phenomena, but it does give a good presentation of some aspects of an engineering interest.

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NEW BOOKS

CONFERENCE PROCEEDINGS

Annals of the New York Academy of Sciences, Vol 157, Art. 1: Data Extraction and Processing of Optical Images in the Medical and Biological Sciences. Peter D. Albertson, Marc Krauss and Karen Sussell, eds. 530 pp. New York Academy of Sciences, 1969. $21.50

Proceedings of the Conference on the Electron Capture and Higher Order Processed in Nuclear Decays, Vols. 1–3. D. Berényi, ed. (Debrecen, Hungary, 15–18 July 1968) 122 pp., 268 pp., 495 pp. Eötvös Lóránd Physical Society, Budapest, 1968.

Support and Testing of Large Astronomical Mirrors. D. L. Crawford, A. B. Meinel and Martha W. Stockton, eds. (Tucson, Ariz., 4–6 Dec. 1966) 252 pp. Kitt Peak National Observatory and Univ. of Arizona, 1968.

Nobel Symposium, Vol. 8: Elementary Particle Theory: Relativistic Groups and Analyticity. Nils Svartholm, ed. (Aspenäsgården, Lerum, Sweden, 19–25 May 1968) Wiley (Interscience), New York, 1969. $31.75

Eleventh International Conference on Low Temperature Physics, Vols. 1 and 2. J. F. Allen, D. M. Finlayson and D. M. McCall, eds. (St. Andrews, Scotland, 21–28 Aug. 1968) 699 pp. and 1394 pp. Univ. St. Andrews, Scotland, 1969.

Proceedings of the International Conference on Statistical Mechanics. S. Ono, R. Abe, T. Izuyama and M. Suzuki, eds. (Kyoto, Japan, 9–14 Sept. 1968) $16.00