straightforward: the reader is led directly from fundamentals to the applications of quantum mechanics to the properties of matter. The text is very readable and will be useful to specialists in other fields as well as to physics students. This book and the three volumes *Mechanics, Electromagnetism,* and *Introduction to Chemical Physics* (the first two co-authored with N. H. Frank) constitute a fairly complete treatment of theoretical physics (except for nuclear theory) on the intermediate level.

Tensor Mathematics

Tensor Analysis, Theory and Application by I. S. Sokolnikoff (John Wiley and Sons, 1951, pp. 335, $6.00) begins with a discussion of linear vector spaces and matrices which stresses geometrical and physical interpretations. It then presents a self-contained treatment of tensor algebra and calculus which is independent of special disciplines such as geometry or relativity. The remainder of the book deals with applications of tensors to geometry, analytical mechanics, relativistic mechanics, and mechanics of continuous media.

Maintenance of Standards

An interesting addition to the existing literature on standards of measurement is the volume of published proceedings of a symposium on recent developments and techniques held at the British National Physical Laboratory at Teddington in May 1951. A total of twelve papers were presented during the six sessions of the symposium, and the publication provides not only the texts of these, but also a summary of the informal discussions which followed each session. Bruce L. Wilson (National Bureau of Standards in Washington) and F. Aughtie (National Physical Laboratory) discuss matters concerning the primary load standards; the lightwave standard of length is reviewed by E. Engelhard (Physikalisch-Technische Bundesanstalt, Brunswick, Germany) and by H. Barrell (NPL); Standards of Radioactive Isotopes are considered by R. C. Hawkings, W. F. Merritt, and J. H. Craven (National Research Council of Canada) and by W. E. Perry (NPL); recent improvements in temperature measurement are discussed by H. van Dijk (Kamerlingh-Onnes Laboratory, University of Leiden, Holland) and C. R. Barber (NPL); the standard of light, in connection with the photometric scale and the coordination of the photometric units, is dealt with by J. W. T. Walsh (NPL) and J. Terrien (Bureau International des Poids et Mesures, Sevres, France); and standards of frequency are treated by Erik Bergstrand (Kartverket, Stockholm, Sweden), who spoke on the precision of optical methods for the determination of the velocity of light, and by L. Essen (NPL) who discussed the measurement of time, frequency, and velocity. (*Recent Developments and Techniques in the Maintenance of Standards;* 100 pp.; Her Majesty's Stationery Office; London; 1952; 4*s* 6*d.*)

Books Received

DESIGN FOR A BRAIN. By W. Ross Ashby. 260 pp. John Wiley and Sons, Inc., New York, 1952. $6.00.

CLOUD CHAMBER PHOTOGRAPHS OF THE COSMIC RADIATION. By G. D. Rochester and J. G. Wilson. 128 pp. (Pergamon Press Ltd., London) Academic Press Inc., New York, 1952. $10.80.

COMETS AND METEOR STREAMS. Volume II. By J. G. Porter. 123 pp. John Wiley and Sons, Inc., New York, 1952. $5.25.

FUNDAMENTAL PRINCIPLES OF POLYMERIZATION. By G. F. D'Alelio. 517 pp. (Chapman and Hall Ltd., London) John Wiley and Sons, Inc., New York, 1952. $10.00.

STARS IN THE MAKING. By Cecilia Payne-Gaposchkin. 160 pp., 67 plates. Harvard University Press, Cambridge, Massachusetts, 1952. $4.25.

INTERCHANGEABILITY OF OIL, GAS, AND NATURAL GAS. Interim Report. By D. L. Nicol, R. A. Brown, and H. R. Linden. 28 pp. Institute of Gas Technology, Chicago, Illinois, 1952. $2.50.

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