

what he means by the "conquest" of energy. Harrison is a distinguished optical physicist, former Dean of Science at MIT and former chairman of the governing board of the American Institute of Physics.

As was to be expected, Harrison has written a very readable and illuminating volume. The wealth of facts and figures is somewhat overwhelming, but the brilliant expository style makes it easy for the intelligent reader to absorb the overall picture.

He begins with a brief account of the development of energy technology as man's endeavor to transfer the burden of work to ingenious mechanical devices. The discussion continues with the many ways energy transformations are used in industry, transportation and the economy of the home. A complete chapter is devoted to the role of energy in assuring an adequate water supply. Practical sources of energy are discussed at length, including fossil fuels, falling water and nuclear fuels.

The physicist will be glad to see a clear exposition of the essential physical meaning of energy in terms of conservation or invariance in the midst of change. The loss of energy availability associated with every transformation, as exemplified by the second law of thermodynamics, is also adequately presented. Other chapters contain material on devices for the storage and transfer of energy, solar energy and atomic and nuclear energy. Both fission and fusion processes are well described, and there is a thorough presentation of plasma physics.

Harrison's book should make a decided appeal to many readers.

R. BRUCE LINDSAY
Hazard Professor of Physics
Brown University

Basic Concepts of Measurement

By Brian Ellis

219 pp. Cambridge Univ. Press, New York, 1968. \$2.45

This is a paperback edition of Brian Ellis's book of 1966. In it he discusses the basic principles of measurement from a mainly logical point of view. He has some searching criticism to make on scales, quantities, units, dimensions, number and probability, but it is not easy reading for the ordinary scientist. On dimensions, the author does not appear to be

very well informed. He says, for instance, that "... dimensions are thought to be some sort of intrinsic characteristic of quantities." This mystical outlook was dismissed as long ago as 1941, (see G. B. Brown, "A New Treatment of the Theory of Dimensions," *Proc. Phys. Soc.* 53, 418, 1941) where some clear definitions were substituted, but this is not mentioned in the bibliography.

With the help of M. J. Scott-Taggart, the author provides, as an appendix, a welcome translation of the important critique of the temperature concept by Mach in his *Die Principien der Wärmelehre*.

Ellis's book is a useful stimulant to discussion of a difficult subject.

G. BURNISTON BROWN
London, England

Photoemissive Materials: Preparation, Properties, and Uses

By A. H. Sommer

256 pp. Wiley, New York, 1968. \$12.95

A. H. Sommer is well known as one of the most knowledgeable persons on photoemissive materials. A book by him on this subject was long overdue and I, for one, am extremely pleased to see it appear.

After a relatively brief treatment of the fundamentals of photoelectric emission, additional space is devoted to the emission of photoelectrons from metals and to the technology of the preparation of suitable metal surfaces. The three chapters on metals are followed by seven chapters on semiconductor emitters. Their properties, chemical, electrical, optical and crystallographic, are discussed quite extensively, together with the technology of their preparation. The many diagrams, illustrating their spectral response and quantum yield, should help anyone in adapting an existing commercial product to his own requirements.

The next two chapters deal with ultraviolet-sensitive and with miscellaneous semiconductor photoemitters. My inclination would have been to reverse the order of these two chapters and to join chapter 13 (semiconductors) to the other semiconductor materials. However, chapter 12 on ultraviolet photoemitters can be very useful to the practitioners of vacuum-ultraviolet spectroscopy.

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475 PAGES JANUARY 1970 \$22.50

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