

ence and in most international conferences—viz., publication of all contributions in one bulky volume. If, however, people insist on publication of all conference papers, it would be preferable to publish separately a (small) volume of review papers and a (big) volume of contributed papers. This way nonspecialists could profit from the review papers, while the specialists could study the contributed papers of interest to them.

The book was published comparatively soon after the conference and the printing is attractive. The price is certainly reasonable for a volume of this size.

**Licht und Farbe. Ordnung und Funktion der Farbwelt.** By Eckart Heimendahl. 284 pp. Walter De Gruyter & Co., Berlin, 1961. DM 38.00. *Reviewed by Robert L. Weber, Pennsylvania State University.*

THE universal appeal of color suggests that this subject is one that the artist, scientist, and layman might enjoy exploring together. The physics teacher seeking to present an example of a scientific method might find that the problem of how to quantify color was of interest to the art, psychology, and engineering students in his class.

One looks then with expectation at a new book announced as being a study of the phenomena of color and light in their entirety. Based on a dissertation for the University of Hamburg, this book treats chiefly psychological aspects of color classification. Of some 125 references, only three are to material in English, these being papers in the *American Journal of Psychology*.

Several forms of color solids are suggested and illustrated with color plates. The special problem of purples is handled in Heimendahl's classification by arranging all hues along a double arc, somewhat like a sine curve, with yellow at the + maximum, blue at the - maximum, and with green and purple both on the horizontal axis. The book is beautifully printed and is illustrated with some ten color plates. It contains much material of special interest in psychology and philosophy, beginning with contrasts in the treatment of color by Newton and Goethe. But for the general reader as well as for the student of physics, the most informative books on the phenomena of color are still *The Science of Color* by the Committee on Colorimetry of the Optical Society of America and the superbly illustrated monographs on color published in 1935 by the International Printing Ink Company: *Color Chemistry*, *Color as Light*, and *Color in Use*.

**Plastic Flow and Fracture in Solids.** By Tracy Y. Thomas. Vol. 2 of Mathematics in Science and Engineering, edited by Richard Bellman. 267 pp. Academic Press Inc., New York, 1961. \$8.50. *Reviewed by Ellis H. Dill, University of Washington.*

ONE of the most important recent developments in rational mechanics is the successful inclusion of certain problems in fracture of solids within the principles of mechanics of continuous media. Predic-

# Research

Schlumberger Well Surveying Corporation maintains a program of long-range industrial research projects at its Research Laboratory in Ridgefield, Connecticut.

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In order to implement our diversified program we have openings for two professional staff members with the following qualifications:

## *physicist for acoustics*

This position requires a Physicist with an advanced degree and experience in acoustics. The research program is concerned with the fundamental theory and experiments with sound propagation in fluid-filled rocks as well as signal processing. Theoretical and experimental experience in elastic wave propagation in liquid and solid material would be valuable.

## *research analyst*

This position requires a background in Mathematics to analyze the performance of systems and equipment by using computers. Applicant should have at least three years' experience in operations analysis and programming, including analysis of the results of geophysical measurements.

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tion of fracture is based on the idea that a fracture surface is a surface of instability over which an initial slip of the material particles will not be damped out. T. Y. Thomas has contributed several important original papers in this field.

The present volume is devoted to a general study of the growth and decay of discontinuities in solids. In particular, the theory predicts the orientation of Luder's bands in flat plates in tension and the orientation of the fracture surfaces for flat plates and round bars in tension, for round bars in torsion, and for circular cylinders subjected to combined tension and internal pressure. These predictions are in excellent agreement with observation.

Beginning with a statement of the basic equations of continuum mechanics and of the geometry of

singular surfaces, the author then discusses waves in elastic media and the constitutive equations for perfectly plastic solids as a background for the study of characteristic surfaces and wave propagation and the applications to fracture. The unique treatment of constitutive equations for a perfectly plastic solid is especially interesting; the yield conditions and the flow rule both follow from a consistent set of assumptions defining plastic deformations. The general treatment of wave propagation and characteristic surfaces in elastic-plastic solids will also be of interest to those people who are concerned with applications other than the question of fracture.

The book is suitable for a text in a graduate course, and this reviewer enthusiastically recommends it for all persons interested in the mechanics of solids.

## BOOKS RECEIVED

**Microwave Tubes.** Conf. Proc. (Munich, June 1960). J. Wosnik, ed. 608 pp. Academic Press Inc., New York, 1961. \$50.00.

**Developments in Mechanics, Volume 1.** Conf. Proc. (Michigan State U., Sept. 1961). J. E. Lay and L. E. Malvern, eds. 622 pp. Plenum Press, Inc., New York, 1961. \$19.50.

**Industrial Applications of Nuclear Energy.** Symp. Proc. (Rio de Janeiro, July 1960). 369 pp. Pan American Union, Washington, D. C., 1961. Paperbound \$2.50.

**Intuition and Science.** By Mario Bunge. 142 pp. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1962. Paperbound \$1.95.

**Ionization Phenomena in Gases, Volume 1.** Conf. Proc. (Munich, Aug. 1961). H. Maecker, ed. 1139 pp. North-Holland Publishing Co., Amsterdam, 1962. \$43.00.

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**Electromagnetic Waves.** Symp. Proc. (U. of Wisc., April 1961). Rudolph E. Langer, ed. 396 pp. U. of Wisconsin Press, Madison, Wisc., 1962. \$6.00.

**Computer Handbook.** Harry D. Huskey and Granino A. Korn, eds. 1248 pp. McGraw-Hill Book Co., Inc., New York, 1962. \$25.00.

**Les Isotopes radioactifs en Médecine.** By Michel De Visscher and Christian Beckers. Vol. 3 of Applications des Sciences nucléaires, edited by Marc Lefort. 160 pp. Albert De Visscher, Brussels, 1961. Paperbound FB 100.00.

**La Libération de l'Energie nucléaire.** By Marc Lefort. Vol. 1 of Applications des Sciences nucléaires, edited by Marc Lefort. 118 pp. Albert De Visscher, Brussels, 1961. Paperbound FB 140.00.

**Dangers des Radiations atomiques.** Eléments de Protection. By Raymond Devoret. Vol. 2 of Applications des Sciences nucléaires, edited by Marc Lefort. 146 pp. Albert De Visscher, Brussels, 1961. Paperbound FB 120.00.

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**The Inspiration of Science.** By Sir George Thomson. 150 pp. Oxford U. Press, New York, 1962. \$4.00.

**Determination of Organic Structures by Physical Methods, Volume 2.** F. C. Nachod and W. D. Phillips, eds. 771 pp. Academic Press Inc., New York, 1962. \$16.00.

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**Molecular Physics.** Dudley Williams, ed. Vol. 3 of Methods of Experimental Physics, edited by L. and C. Marton. 760 pp. Academic Press Inc., New York, 1962. \$19.00.

**The Plasma Dispersion Function.** The Hilbert Transform of the Gaussian. By Burton D. Fried and Samuel D. Conte. 419 pp. Academic Press Inc., New York, 1961. \$12.00.

**The Fabric of the Heavens.** The Development of Astronomy and Dynamics. By Stephen Toulmin and June Goodfield. 285 pp. Harper & Bros., New York, 1961. \$5.00.

**Quantum Mechanics for Mathematicians and Physicists.** By Ernest Ikenberry. 269 pp. Oxford U. Press, New York, 1962. \$8.00.

**Power Reactor Experiments.** Symp. Proc. (Vienna, Oct. 1961). Vol. 1, 402 pp. \$6.00; Vol. 2, 285 pp. \$4.00. International Atomic Energy Agency, Vienna, 1962. Paperbound. Distributed by Intn'l Distributors, Inc., New York.

**Nonlinear Differential Equations.** By Raimond A. Struble. 267 pp. McGraw-Hill Book Co., Inc., New York, 1962. \$7.50.

**Scientific Foundations of Vacuum Technique** (2nd ed.). By Saul Dushman. Edited by J. M. Lafferty. 806 pp. John Wiley & Sons, Inc., New York, 1962. \$19.50.

**Vistas in Astronomy, Volume 4.** Arthur Beer, ed. 194 pp. Pergamon Press Inc., New York, 1961. \$12.00.

**Fundamental Data Obtained from Shock-Tube Experiments.** A. Ferri, ed. 415 pp. Pergamon Press Inc., New York, 1961. \$12.00.

**Nuclear Magnetic Relaxation** (Reprint of 1948 ed.). By N. Bloembergen. 178 pp. W. A. Benjamin, Inc., New York, 1961. Paperbound \$3.95.

**The Many-Body Problem.** (Lecture notes and reprints.) By David Pines et al. 456 pp. W. A. Benjamin, Inc., New York, 1961. Paperbound \$3.95.