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similar nature might be chosen: "In order to hold a complex of neutrons and protons together to form a tightly packed nucleus there must exist strong attractive forces between the particles. Hence, a nucleus contains a large quantity of potential energy of binding . . ." (p. 28); "Now a neutron or proton in a nucleus has a binding energy of about 8 Mev and it will therefore have a kinetic energy of about this magnitude" (p. 31). The attentive American reader will not be insensitive to such blemishes, but he will still be interested to evaluate this collection of lectures in relation to scope and intention, for the problem of "refresher courses" for school science teachers is his problem equally as it was, and is, the problem of Professor Messel and his colleagues in Sydney.

Low Temperature Physics. Conf. Proc. (U. of Toronto, Aug.-Sept. 1960). G. M. Graham and A. C. Hollis Hallett, eds. 725 pp. U. of Toronto Press, Toronto, 1961, \$15. Reviewed by Eugene Guth, Oak Ridge National Laboratory.

THIS was one of those periodic, large international conferences where the proceedings get successively more voluminous. It consisted of about twenty invited papers whose authors acted as rapporteurs of a number of selected contributed papers. In the book these invited papers each open a chapter devoted to the field concerned. They are followed by the selected contributed papers in the order in which they were discussed by the reviewer. The non-reviewed contributed papers are grouped into other chapters. Such a procedure has been followed recently in many of the large conferences. They differ in that the published proceedings sometimes contain only the selected contributed papers and abstracts of the other unreviewed contributions; sometimes (as in the present case) they contain all contributions and some discussion to boot.

In general, no striking progress has been reported in the two main fields of low-temperature physics—viz., liquid helium and superconductivity. However, a lot of interesting detailed progress has been discussed. Perhaps an enumeration of the (abbreviated) titles of the invited papers will help to show the scope of the conference: Mössbauer effect, magnetic relaxation, liquid and gaseous hydrogen, magnetism below 1°K, nuclear orientation, Fermi surface, ultrasonic attenuation, resistance minima, superconductivity, specific heat of alloys, liquid and solid He³ and He⁴, thermodynamic properties of solids.

It seems to this reviewer that twenty invited papers are perhaps too many. At the last Union of German Physical Societies (UGP) reported in *Physics Today*, January 1962, p. 98, by Wigner there were only about ten invited review papers for the whole field of physics. The reviews at UGP are usually published separately in a slender volume, while the contributed papers are probably published in more or less specialized national or international journals. Such a procedure seems preferable to the one adopted in this confer-

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

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