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qualifying or further explanation, and I would find in the next sentence or paragraph that in fact the needed details were supplied. The book is in paperback form with unusually wide margins, which are useful for making notes.

There are places where I disagree with his pedagogical style, and other places where I find myself in most warm agreement. I do not care for his treatment of kinetic theory of gases, but I like his fluid dynamics. Two of the areas to which I am most sensitive as to how they are treated are rotational dynamics and the Bohr atom. Aitchison unfortunately handles both of these in the conventional manner. I am convinced that it is quite possible to treat these subjects correctly and still not get beyond the students. Some of his historical treatments are not correct, whereas in other places he has proper history on subjects often incorrectly handled in general texts. There are a few places where I feel that there are erroneous statements made or, at best, they must be considered misleading. However, these last few remarks are in the nature of nit-picking, which appears to be a disease of reviewers. The book really is better than many I have seen.

In summary, then, I feel that this book on the whole is quite good as a supplement for general introductory courses in the US. However, I can not imagine many places where it could fit into the standard system as a text.

JOHN I. SHONLE University of Colorado, Denver

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Concepts in Hadron Physics. P. Urban, ed. 424 pp. Springer-Verlag, New York, 1971.

Economic Integration of Nuclear Power Stations in Electric Power Systems (Conf. proc. International Atomic Energy Agency, Economic Commission for Europe of the United Nations, Vienna, Austria, 5-9 Oct. 1970). \$20.00

Instrumentation for Neutron Inelastic Scattering Research (Conf. proc. Vienna, Austria, 1-5 Dec. 1969). 290 pp. Unipub, New York, 1970. \$7.00

The Magellanic Clouds: A European Presentation: Southern Observatory Principles, Prospects, Current Observational and Theoretical Approaches, and Prospects for Future Research (Conf. proc. Santiago, Chile, March 1969). A. B. Muller, ed. 189 pp. Springer-Verlag, New York,

The Physics of Semimetals and Narrow-Gap Semiconductors (Conf. proc. Dallas, Tex., 20, 21 March 1970). D. L. Carter,



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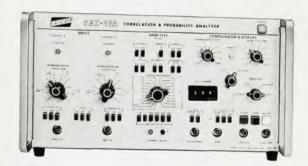
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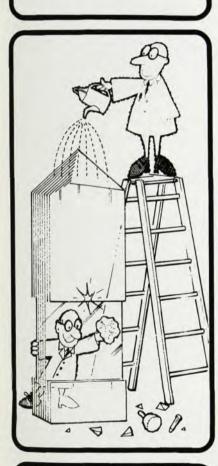
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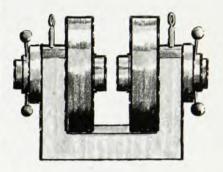
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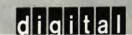
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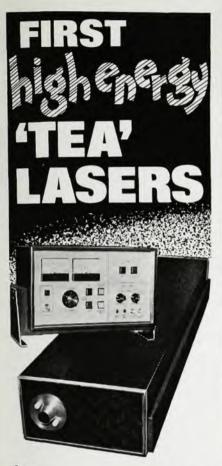
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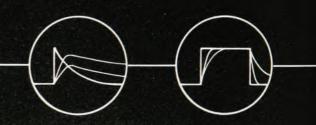


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Physics of High Energy Density (Conf. proc. Proceedings of the International School of Physics "Enrico Fermi," 14–26 July 1969, Varenna on Lake Como, Italy, Italian Physical Society). P. Caldirola, ed. 418 pp. Academic, New York, 1971. \$23.00

The Physics of Opto-Electronic Materials (Conf. proc. General Motors Research Laboratories, 4-6, Oct. 1970, Warren, Michigan). W. A. Albers Jr, ed. Plenum, New York, 1971. \$16.50

Proceedings of the Second Lunar Science Conference (Conf. proc. Second Lunar Science Conference, Houston, Texas, 11-14 Jan. 1971), Vol. 1: Mineralogy and Petrology; Vol. 2: Chemical and Isotope Analyses; Vol. 3: Physical Properties/Surveyor III. A. A. Levinson, ed. 2818 pp. MIT Press, Cambridge, Mass., 1971. \$70.00

Proceedings of the Twelfth International Conference on Low Temperature Physics (Conf. proc. Kyoto, Japan, 4-10 Sept. 1970). E. Kanda, ed. 895 pp. Academic Press of Japan, Tokyo, Japan, 1971.

Science as Metaphor: The Historical Role of Scientific Theories in Forming Western Culture. R. Olson, ed. 321 pp. Wadsworth Publishing Co, Belmont, Calif., 1971.

### PHYSICS AND SOCIETY

A Special Interest: The Atomic Energy Commission, Argonne National Laboratory, Midwestern Universities. By L. Greenbaum. 222 pp. University of Michigan Press, Ann Arbor, Mich., 1971. \$10.00

The Uses of Talent. By D. Wolfle. 204 pp. Princeton U. P., Princeton, N. J., 1971. \$6.50



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