

Other noteworthy items are the generous use of cross referencing between the chapters to cut down duplication (which indicates good editing), the use of rationalized MKS units, and placement of the chapter on thermodynamics after a chapter on atomic theory of heat.

The editor's stated objective was an attempt to treat all subjects on the same level. Although several of the chapters are too superficial, or lacking in cohesiveness, this objective has been largely achieved.

Some may question the extensive inclusion in an elementary undergraduate textbook of topics in modern physics on the grounds that their treatment must of necessity be more fragmentary, and descriptive, and less rational, and quantitative. Others may feel that the tremendous advances primarily in quantum physics justify the student's introduction to it as soon as possible. This book should find favor in either camp because of the over-all excellence of the writing, particularly of the classical topics. The chapter on thermodynamics by J. de Boer should be singled out, in the reviewer's opinion, as the finest presentation of this topic at this level presently available in the English language.

Neutron Optics. By D. J. Hughes. 136 pp. Interscience Publishers, Inc., New York, 1954. \$2.50. *Reviewed by C. G. Shull, Oak Ridge National Laboratory.*

This little volume appears to be a pocket-sized edition of the author's more complete *Pile Neutron Physics*. It is attractive in offering a very readable and easily followed description of the many interesting experiments which have been performed with beams of slow neutrons. The various refractive, reflective and diffractive experiments all share in the treatment and their applications in determining important physical data such as the neutron-proton coherent scattering amplitude are discussed. The more serious-minded reader will, of course, want to refer to the research papers or reviews which are bountifully referred to.

The easy reading which characterizes this tract, labelled Number 1 in a series on physics and astronomy, is occasionally bought at the expense of rigor but these lapses appear as genuine attempts on the part of the author to achieve simplicity. This reviewer for one is anything but critical of such an effort in a volume like this.

Seismology

The science of seismology, aside from its importance in the study of earthquake phenomena, yields information in other fields as well. An example is the behavior of materials at pressures higher than attainable in the laboratory yet lower than those for which theoretical predictions exist. For such pressure, between 10^5 and 10^7 atmospheres, the interior of the earth is the sole source of data, with the seismograph as probe. In a brief but thorough book, *Seismology* (John Wiley and

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COLLEGE PHYSICS

By ROBERT L. WEBER, MARSH W. WHITE, and KENNETH V. MANNING, Pennsylvania State University. Second edition. 820 pages, \$6.50

This outstanding college text presents the basic ideas of physics for students of science and engineering. Simple, direct, and concise explanations and solved numerical examples help students acquire exact knowledge of physical principles. Facility in the application of physical principles is encouraged by discussion questions, careful treatment of units, proper use of significant figures, and pairing of problems. Emphasis is upon the vitality of physics. The historical development of our modern ideas is stressed by introducing significant experimental and theoretical contributions and endeavoring to relate them systematically in the progress of the development of physical thought. Changes have been made throughout to clarify statements, and the problems are completely revised.

EXPERIMENTAL COLLEGE PHYSICS

By MARSH W. WHITE, and KENNETH V. MANNING, The Pennsylvania State College. Third edition. 347 pages, \$5.00

This book is basically a laboratory manual for experiments in various courses in general physics. The 45 chapters include the background theory, procedure, review questions, and thought-provoking questions and problems for 76 experiments. The topics covered include all of those usually included in laboratory courses in general college physics. More than a set of directions for performing experiments, this book gives a concise, but complete, treatment of the pertinent basic theory. The book has been completely revised, many chapters rewritten and improved experiments included. All of the illustrations have been redone to produce improved readability and more problems have been included.

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