

and for the text to be supportive to the ideas to be communicated in a course, it is also bad pedagogically to fill the average student with anxiety over whether or not a deleted topic might in fact appear in an examination question.

In those colleges and universities where a greater flexibility in the choice of topics and their order is enjoyed by the lecturer, the text of Alonso and Finn may provide a welcome change from the above-mentioned list of textbooks. Grouping topics by the physical content of the ideas is commendable pedagogy. It is always satisfying as a subject is developed to extract from each new idea as many by-products as one can. In this way the student can sense the elegance and the economy of thought that the new idea makes possible.

The list of subjects treated by the authors is quite complete—encyclopedic in fact. The books mentioned above and published after Sears and Zemansky have followed this same trend of including more and more of the subject matter of all of physics. This trend is partly due to the publisher who hears, for example, that a certain professor has stated that he cannot teach a

course in electricity without including ac circuits. The author is then asked to insert a chapter on ac circuits to make the book more marketable, and the competition soon follows suit.

An important but frequently overlooked side effect of the trend toward encyclopedism is the weight of the book; the sheer physical weight makes a big book such as Alonso and Finn uncomfortable to hold while reading, and makes one think twice about carrying the book from place to place.

The trend toward larger and larger texts is also partly due to the growth of knowledge, and to the pride that physicists have because of the increase in their understanding of natural phenomena. A great deal of our technology rests on this understanding as well as the rapid growth of the technology. But just as we have reached and surpassed the age of overkill in weaponry, we must retreat to a more selective policy to avoid the age of overteach and overbore in spite of our enthusiasm to show how beautifully it all hangs together.

LEO LAVATELLI
University of Illinois
Urbana-Champaign

new books

CONFERENCE PROCEEDINGS

Atti Del Convegno Mendeleeviano: Periodicità e Simmetrie Nell'Struttura Elementare Della Materia (Conf. Proc. Torino-Roma, Italy, 15-21 Sept. 1969). M. Verde, ed. 460 pp. Accademia Dell' Scienze di Torino, Accademia Nazionale Del Lincei, Torino, Italy, 1971.

Hadronic Interactions of Electrons and Photons (Conf. proc. Eleventh Session of the Scottish Universities Summer School in Physics, 1970, NATO Advanced Study Institute). J. Cumming, H. Osborn, eds. 653 pp. Academic, New York, 1971. \$31.00

National Bureau of Standards Publication 353: The Menzel Symposium on Solar Physics, Atomic Spectra and Gaseous Nebulae (Conf. proc. Harvard College Observatory, Cambridge, Mass., 8, 9 April 1971). K. B. Gebbie, ed. 203 pp. US Government Printing Office, Washington, D.C., 1971. \$1.75.

Periodic Orbits, Stability and Resonance (Conf. proc. Univ. of São Paulo, The Technical Institute of Aeronautics of São José dos Campos and the National Observatory of Rio de Janeiro, Univ. of São Paulo, São Paulo, Brazil, 4-12 Sept. 1969). G. E. O. Giacaglia, ed. 503 pp. D. Reidel, Dordrecht, Holland, 1970.

Phenomena in Ionized Gases (Conf. proc. 10th International Conference on Phenomena in Ionized Gases, 13-18 Sept., Oxford, UK). Contributed papers. R. N. Franklin, ed. 447 pp. Richard S. Gothard Co Ltd, Oxford, UK, 1971. £ 12

ELEMENTARY PARTICLES

Elementary Particles: Science, Technology and Society. L. C. L. Yuan, ed. 314 pp. Academic, New York, 1971. \$15.00

NUCLEI

Experiments in Nuclear Science. 132 pp. Ortec, Oak Ridge, Tenn., 1971. \$10.00.

ATOMS, MOLECULES

Elementary Atomic Structure. By G. K. Woodgate. 225 pp. McGraw-Hill, New York, 1970. \$10.50

CHEMICAL PHYSICS

Techniques of Chemistry, Vol. III: Photochromism. G. H. Brown, ed. 853 pp. Interscience, New York, 1971. \$47.50

ACOUSTICS

Molecular Acoustics. By A. J. Matheson. 290 pp. Interscience, New York, 1971. \$16.50

OPTICS

Optics. By F. G. Smith, J. H. Thomson. 350 pp. Wiley, New York, 1971. \$10.00

Polarization Interferometers: Applications in Microscopy and Macroscopy. By M. Francon, S. Mallick. 159 pp. Interscience, New York, 1971. \$12.50

Vacuum Ultraviolet Spectroscopy. A. N. Zaidel, E. Ya. Shreider. Z. Lerman, trans. 395 pp. Ann Arbor-Humphrey Science Publishers, London, UK, 1971. \$22.50

HARPER & ROW

PHYSICS: The Behavior of Particles

PHILIP STEHLE
University of Pittsburgh

This noncalculus introductory physics text for students of biology, premedicine, architecture, and the liberal arts surveys classical and modern physics through the study of the behavior of particles both individual and in groups. Discussions are based on Newton's Laws of Motion, modified to include relativistic mechanics where needed, quantum ideas, and experimental observation. *Combined Answer Book and Instructor's Manual.* 1971. 434 pp.; \$10.95.

AN INTRODUCTION TO THE MEANING AND STRUCTURE OF PHYSICS

LEON N COOPER
Brown University

The Original Edition: Especially written for nonscience majors, this text does not require calculus. All the classical topics (mechanics, heat, light, electricity, magnetism) are examined before modern physics is introduced. Generalizations and abstractions of more advanced concepts follow. This approach integrates fundamental ideas of physics within the setting of their historical development. "Clearly an excellent text."—*Physics Today*. 1968. 746 pp.; \$13.95.

The Short Edition: Abridged and slightly revised, the Short Edition covers nearly all the same topics but excludes some of the more technical illustrations and simplifies more difficult parts of the exposition. 1970. 535 pp.; \$12.95.

COLLEGE PHYSICAL SCIENCE, Second Edition

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G. RAY SHERWOOD
WILLARD H. PARSONS
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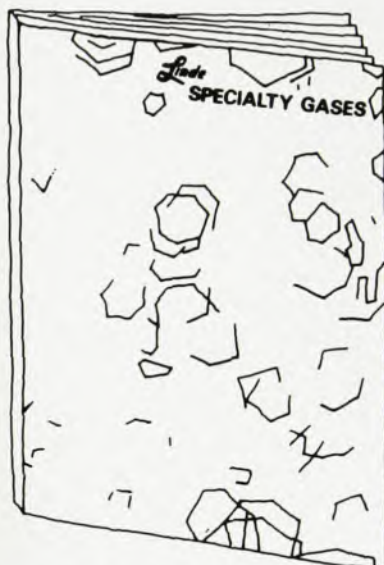
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This laboratory manual for either a one-semester or a one-year physical science survey course for the nonscience major covers experiments in physics, chemistry, astronomy, and geology. Includes detailed introductions to each experiment, historical background material, tear-out data recording sheets, and many review exercises. 1971. Paper. 269 pp.; \$4.95.



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Modern Metallographic Techniques and Their Applications. By V. A. Phillips. 538 pp. Wiley, New York, 1971. \$27.50

Optische Eigenschaften von Metallen und Legierungen: Mit einer Einführung in die Elektronentheorie der Metalle. By R. E. Hummel. 222 pp. Springer-Verlag, New York, 1971.

CRYSTALS

Color and Symmetry. By A. L. Loeb. 179 pp. Interscience, New York, 1971. \$14.95

Interpretation of Electron Diffraction Patterns. By K. W. Andrews, D. J. Dyson, S. R. Keown. 2nd ed. 239 pp. Plenum, New York, 1971. \$25.00

Solid State Physics Supplement 3: Theory of Lattice Dynamics in the Harmonic Approximation. By A. A. Marududin, E. W. Montroll, G. H. Weiss, I. P. Ipatova. 2nd ed. 708 pp. Academic, New York, 1971. \$28.50

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Basic Physics of Stellar Atmospheres. By T. L. Swihart. 86 pp. Pachart, Tucson, Arizona, 1971. \$7.95

THEORY AND MATHEMATICAL PHYSICS

Dyadic Green's Functions in Electromagnetic Theory. By C. T. Tao. 246 pp. Intext Educational Publishers, Scranton, Pa., 1971. \$14.50

Group Theory and its Applications, Vol. 2. E. M. Loebl, ed. 312 pp. Academic, New York, 1971. \$18.50

Guide to the Applications of the Laplace and Z-Transforms. By G. Doetsch. 240 pp. Van Nostrand Reinhold, New York, 1971. \$15.95

On the Volterra and Other Nonlinear Models of Interacting Populations. By N. S. Goel, S. C. Maitra, E. W. Montroll. 145 pp. Academic, New York, 1971. \$5.50

Time and Space-Traveller. By L. Marder. 210 pp. George Allen and Unwin, London, UK, 1971. £3.25

INSTRUMENTATION AND TECHNIQUES

Advances in Electronics and Electron Physics, Vol. 30. L. Marton, ed. 343 pp. Academic, New York, 1971. \$19.50

Critical Assemblies and Reactor Research. By L. C. Schmid. 381 pp. Interscience, New York, 1971. \$21.95

Dating Techniques for the Archaeologist. H. N. Michael, E. K. Ralph, eds. 226 pp. MIT Press, Cambridge, Mass., 1971. \$12.50

Engineering Design by Geometric Programming. By C. Zener. 98 pp. Wiley, New York, 1971. \$8.95

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Hall Generators and Magnetoresistors. By H. H. Wieder. 164 pp. Pion, London, UK, 1971.

Theories des Groupes en Physique Classique et Quantique, Tome 2: Applications en Physique Classique. By T. Kahan. 352 pp. Dunod, Paris, 1971. 108 f

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MISCELLANEOUS

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Landolt Börnstein, Group III, Vol. 6: Structure Data of Elements and Intermetallic Phases. K. H. A. M. Hellwege, eds. 1019 pp. Springer-Verlag, New York, 1971. \$179.10

Publications of the National Bureau of Standards, 1970, No. 305, Supplement 2: A Compilation of Abstracts and Key Word and Author Indexes. By B. L. Oberhotzer. 364 pp. National Bureau of Standards, Washington, D.C., 1971. \$3.25

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