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of the text was written by the Russian contributors. The text is written in a very logical manner, however, and the reader should have no problem following it.

On the critical side, the book draws heavily from the immediate spheres of influence of the authors, and experimental results are most frequently taken from their own laboratories. Although this is not too serious a criticism, it is important that the reader keep this in mind.

CURT WITTIG

*Departments of Physics  
and Electrical Engineering  
University of Southern California*

## book note

**Historical Studies in the Physical Sciences, Vol. 8.** R. McCormmach, L. Pyenson, eds. 300 pp. Johns Hopkins U.P., Baltimore, 1977. \$17.50

*Historical Studies* is a series of annual volumes that encourage "substantial studies in the history of the physical sciences from the eighteenth century to the present" and "studies that explore new problems and methods in the intellectual and social history of the physical sciences." In this eighth volume, six of the seven papers deal with the history of physics; half of these are devoted to nineteenth-century aspects, the other half to twentieth-century topics. Edward MacKinnon discusses "Heisenberg, Models, and the Rise of Matrix Mechanics," while Daniel Serwer writes on "Pauli, Heisenberg, and the Rejection of the Mechanical Atom, 1923-25." In his "Temple to Science: Cooperative Research and the Birth of the California Institute of Technology," Robert H. Kargon argues that the institution's early scientific excellence can best be understood by examining George Ellery Hale's perception of the scientific and institutional needs of astrophysics.—CBW

## new books

### Particles, Nuclei and High-Energy Physics

**Proceedings of the Seventh Hawaii Topical Conference in Particle Physics** (Honolulu, August 1977). R. J. Cence, P. N. Dobson Jr, S. Pakvasa, S. F. Tuan, eds. 481 pp. U. P. of Hawaii, Honolulu, 1978. \$15.00

### Atomic, Molecular and Chemical Physics

**Structures and Approximations for Electrons in Molecules.** D. B. Cook. 294 pp. Halsted (Wiley), New York, 1978. \$32.50

**Structure and Collision of Ions and Atoms**

(Topics in Current Physics, Vol. 5) I. A. Sellin, ed. 350 pp. Springer-Verlag, New York, 1978. \$33.20

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**Principles of Chemical Kinetics.** G. G. Hammes. 268 pp. Academic, New York, 1978. \$19.50

**Absorption Spectra in the Ultraviolet and Visible Region.** L. Láng, ed. 419 pp. Krieger, Huntington, N.Y. 1978. \$42.50

**Low-Energy Ion Beams, 1977** (Invited and contributed papers presented at the Inter. Conf., Univ. of Salford, UK, September 1977) (Conf. Series No. 38). K. G. Stephens, I. H. Wilson, J. L. Moruzzi, eds. 322 pp. Institute of Physics, Bristol, UK (US distributor: American Institute of Physics, New York), 1978. \$44.00

**Spectral Atlas of Nitrogen Dioxide 5530 to 6480 Å.** D. K. Hsu, D. L. Monts, R. N. Zare. 638 pp. Academic, New York, 1978. \$39.50

## Optics and Acoustics

**Wave Propagation and Underwater Acoustics** (Survey papers presented at a workshop, Mystic, Conn., November 1974) (Lecture Notes in Physics, Vol. 70). J. B. Keller, J. S. Papadakis, eds. 287 pp. Springer-Verlag, New York, 1977. \$11.50

**Vibrations and Waves in Physics.** I. G. Main. 336 pp. Cambridge U.P., New York, 1978. \$37.50 clothbound, \$8.95 paperbound

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**The Theory of Relativity Revisited.** H. W. Grayson. 261 pp. Dorrance, Ardmore, Pa., 1978. \$10.00

## Crystallography, Low-Temperature and Solid-State Physics

**Quantum Liquids** (Lectures presented at the Int. School of Low Temperature Physics, Erice, Italy, June 1977). J. Ruvalds, T. Regge, eds. 328 pp. North-Holland, New York, 1978. \$37.00 clothbound, \$21.75 paperbound

**Electrical Transport and Optical Properties of Inhomogeneous Media** (Proc. of a conf., Ohio State Univ., September 1977) (AIP Conf. Proc., No. 40). J. C. Garland, D. B. Tanner, eds. 416 pp. American Institute of Physics, New York, 1978. \$21.00

**Dynamical Scattering of X-Rays in Crystals** (Series in Solid-State Sciences, Vol. 3). Z. G. Pinsker. 511 pp. Springer-Verlag, New York, 1978. \$39.60

**Inelastic Electron Tunneling Spectroscopy** (Proc. of the Int. Conf. and Symp., Univ. of

Missouri-Columbia, May 1977) (Series in Solid-State Sciences, Vol. 4). T. Wolfram, ed. 242 pp. Springer-Verlag, New York 1978. \$29.00

**Induced Representations in Crystals and Molecules: Point, Space and Nonrigid Molecule Groups.** S. L. Altman. 369 pp. Academic, London, 1977. \$35.25

**Solid State Devices** (Proceedings of the 8th Int. Conference, Tokyo, September 1976). 564 pp. Japanese Journal of Applied Physics (Vol. 16, Supplement 16-1), Tokyo, 1977. ¥14 000

## Astronomy, Cosmology and Space Physics

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**A Handbook of Radio Sources.** A. G. Pacholczyk. 234 pp. Pachart, Tucson, Ariz., 1978. \$38.00

**The Restless Universe: An Introduction to Astronomy.** H. L. Shipman. 464 pp. Houghton Mifflin, Boston, 1978. \$15.95

## Geophysics and Planetary Science

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