pictures. There is a viewer in a pocket with each book to be used with the numerous stereo pictures throughout the text.

The presentation is cursory: Carbon as a hydrogen-bond donor is described in less than two pages, and there is no discussion of the validity of the carbon hydrogen bond concept. Likewise the structure of liquid water is described in three pages, which may leave the specialist on water with raised eyebrows. Fortunately there are adequate references so that the student can look up and find that carbon as a hydrogen bonder is not fully understood and accepted, and that water is not as well defined as the text would indicate. It is, however, a commendable book because for the first time it has assembled data on the carbon hydrogen donor as well as other intriguing bonds such as, for example, the metal–hydrogen–metal bond. The thorough documentation, author index, subject index and appendix on neutron-diffraction data make this a valuable addition to the few books on hydrogen bonding.

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A sound approach

PHYSICAL ACOUSTICS, PRINCIPLES AND METHODS, VOL. 4, PARTS A AND B: APPLICATIONS TO QUANTUM AND SOLID STATE PHYSICS. Warren P. Mason, ed. 490 pp. and 489 pp. Academic, New York, Part A, 1966; Part B, 1968. $15.50 and $19.50

by WALTER G. MAYER

About five years ago the first volume of this series was received very warmly as a modern approach to physical acoustics. Originally intended as a four-volume collection of articles on acoustics in solid-state physics, the series has grown far beyond these confines.

Most of the material contained in the seventh and eighth books (that is volumes 4A and 4B) is related to the topics indicated by the subtitle. The editor has included chapters that one might consider a must, like the fine papers on ultrasonics, Fermi surfaces and on nuclear spin–phonon interactions. But one also finds, in part B, an article on plasma waves in ionized gases. It is this order of arrangement that is somewhat disturbing. Another example is that although volume 4A contains two papers discussing dislocation damping and volume 3B a chapter on the effect of impurities, the entire volume 3A is entitled "The Effect of Imperfections."

The 16 individual chapters in volume 4 are very well written and self-consistently organized. The emphasis is on the treatment of specialized or advanced topics; therefore the reader should not be discouraged if he does not find certain discussions in this volume that he might expect. The topic may have been treated in one of the previous six volumes or, perhaps, will appear in a future volume, which one might hope will include an index covering all the chapters in the entire series.

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The reviewer is associate professor at Georgetown University and is teaching graduate courses in physical acoustics and in solid-state physics.

NEW BOOKS

CONFERENCE PROCEEDINGS

Magnetic Resonance and Radiofrequency Spectroscopy. P. Averbuch, ed. (Grenoble, September 1968) 537 pp. North-Holland, Amsterdam, 1969. $22.50

Space Research IX. K. S. W. Champion, P. A. Smith and R. L. Smith-Rose, eds. (Tokyo 1968) 770 pp. North-Holland, Amsterdam, 1969.

Annals of the IQSY, Vol. 5: Solar-Terrestrial Physics. A. C. Stickland, ed. 460 pp. MIT Press, Cambridge, Mass., 1969. $22.50

The Application of Modern Physics to the Earth and Planetary Interiors. By S. K. Runcorn. 692 pp. Wiley (Interscience), New York, 1969. $35.00

Abundant Nuclear Energy (Conf. Proc. Gatlinburg, Tenn., 26–29 Aug. 1968). By W. W. Grigorieff. 352 pp. US Atomic Energy Commission, Washington, D.C. 1969. Paper $3.00

Light Scattering Spectra of Solids (Conf. Proc. New York University, 3–6 Sept. 1968). George B. Wright, ed. 763 pp. Springer-Verlag, New York, 1969. $44.00

Low-luminosity Stars (Conf. Proc. Symposium on Low-luminosity Stars, U. of Virginia, 1968). Siv S. Kumar, ed. 542 pp. Gordon and Breach, New York, 1969. Reference $42.00; Professional $22.50

Reactivity of Solids. (Conf. Proc. 6th International Symposium on the Reactivity of Solids, Schenectady, N.Y., 25–30 Aug., 1968). J. W. Mitchell, R. C. DeVries, R. W. Roberts, P. Cannon, eds. Wiley-Interscience, New York, 1969. $24.95

Research in Physics and Chemistry (Conf. Proc. International Academy of Astronautics, Third Lunar International Laboratory Symposium, at the XVIII International Astronautical Congress, Belgrade, 28 Sept. 1967). Frank J. Malina, ed. 145 pp. Pergamon Press, Oxford, 1969. $13.50

ATOMS, MOLECULES, CHEMICAL PHYSICS

Introduction a la Cinetique Heterogene. By Bernard Delmon. 695 pp. Editions Technip, Paris, 1969. 130F

Advanced Physical Chemistry: A Survey of Modern Theoretical Principles. By S. M. Binder. 554 pp. Macmillan, London, 1969. $13.95

Theory and Interpretation of Fluorescence and Phosphorescence. By Ralph S. Becker. 283 pp. Wiley (Interscience), New York, 1969. $14.95

OPTICS

Lasers and Holography: An Introduction to Coherent Optics. By Winston E. Kock. 103 pp. Doubleday, New York, 1969. Cloth $4.50, paper $1.25

The Scattering of Light: And Other Electromagnetic Radiation. By Milton Kerker. 666 pp. Academic, New York, 1969. $33.50

Applied Spectroscopy Reviews, Vol. 2. Edward G. Brame, Jr, ed. 376 pp. Marcel Dekker, New York, 1969. $17.50

L'Infrarouge Lointain. By Armand Hadni. 260 pp. Presses Universitaires de France, Paris. 1969

Thin-Film Optical Filters. By H. A. Macleod. 332 pp. American Elsevier, New York, 1969. $22.00

ELECTRICITY AND MAGNETISM

Effects of Ionospheric Scattering on Very-Long Distance Radio Communication. By H. A. Whale. 179 pp. Plenum, New York, 1969. $10.00

Basic Electricity. By W. M. Gibson. 192 pp. Penguin Book, Baltimore, Md., 1969. $2.95

Propagation of Waves. By P. David and J. Voge. 334 pp. Pergamon, New York, 1969. $11.00

Quantum Electronics, Vol. 1: Basic Theory; Vol. 2: Amplifiers and Oscillators. By V. M. Fain and Ya. I. Khanin. 314 pp. Pergamon, New York, 1969. $15.50

Fundamentals of Quantum Electronics. By R. H. Pantell and H. E. Puthoff. 361 pp. Wiley, New York, 1969. $15.95

FLUIDS, PLASMAS

The Virial Coefficients of Gases: A Critical Compilation. By J. H. Dymond and E. B. Smith. 231 pp. Oxford Univ. Press, New York, 1969. $7.20

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1: Solid-Liquid Equilibrium, Topic 13: Mixtures, Solutions, Chemical and Phase Equilibria. By R. Haase and H. Schonert. 260 pp. Pergamon, New York, 1969. $16.00

Heat and Mass Transfer in Recirculating Flows. By A. D. Gosman, W. M. Pun, A. K. Runchal, D. B. Spalding and M. Wolfshtein. 338 pp. Academic, New York, 1969. $9.50

Transport Phenomena in Fluids. Howard J. M. Hanley, ed. 509 pp. Marcel Dekker, New York, 1969. $25.50

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Design of Resonant Piezoelectric Devices. By Richard Holland and E. P. EerNisse. 258 pp. MIT Press, Cambridge, 1969. $12.50

The Physics of Metals: Electrons. J. M. Ziman, ed. 433 pp. Cambridge Univ. Press, New York, 1969. $14.50

Ultrasonic Testing of Materials. By J. Krautkrämer and H. Krautkrämer. 521 pp. Springer-Verlag, New York, 1969. $18.00

Solid State Physics. Ryogo Kubo and Takeo Nagamiya, eds. 840 pp. McGraw-Hill, New York, 1969. $19.50

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Molecular Processes on Solid Surfaces. Edmund Drauglis, Ronald D. Gretz and Robert I. Jaffee, eds. 651 pp. McGraw-Hill, New York, 1969. $37.50

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Advances in Geophysics. H. E. Landsberg, J. Van Mieghem, eds. 267 pp. Academic Press, New York, 1969. $14.50

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Digital Magnetic Logic. By David R. Bennion, Hewitt D. Crane, David Nitzan. 367 pp. McGraw-Hill, New York, 1969. $15.00

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Solenoid Magnet Design: The Magnetic and Mechanical Aspects of Resistive and Superconducting Systems. By D. Bruce Montgomery. 312 pp. Wiley-Interscience, New York, 1969. $13.95

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Understanding Thermodynamics. By H. C. VanNess. 103 pp. McGraw-Hill, New York, 1969. Cloth $4.95, paper $2.95

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Introduction to College Physics. By Harvey E. White. 791 pp. Van Nostrand, New York, 1969. $12.95

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Knowing and Guessing: A Quantitative Study of Inference and Information. By Satosi Watanabe. 592 pp. Wiley, New York, 1969. $22.50

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Aristotle's Physics. Translated by Hippocrates G. Apostle. 386 pp. Indiana Univ. Press, Bloomington, Ind., 1969. Cloth $12.50, paper $3.95

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Universe, Earth, and Atom: The Story of Physics. By Alan E. Nourse, 688 pp. Harper & Row, New York, 1969. $10.00

MISCELLANY

World Who's Who in Science: From Antiquity to the Present. Allen G. Debus, ed. 1855 pp. Marquis—Who's Who, Inc., Chicago, 1969. $60.00 □