

distribution function is probably the most important piece of qualitative insight into the form of the frequency distribution since the introduction of the Debye model, and I am pleased to see it presented so lucidly here. A large fraction of chapter 4, entitled "Co-operative phenomena in solids," consists of a discussion of the Ising model and its application to a variety of solid state, cooperative phenomena and constitutes a brief but excellent review of this subject. The subsequent chapters deal mainly with the electronic properties of crystals, including energy band theory, transport theory, and electronic bonding.

Naturally, in a book of this nature many important details can only be hinted at, and many topics must be omitted altogether. Each reader will be able to choose some favorites from among the latter. However, the book can be recommended almost without reservation to anyone who has a good foundation in quantum mechanics as an excellent survey of the important ideas of modern solid state theory.

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New Books

Advances in Astronautical Sciences. vol. 4. Plenum Press, New York; Chapman and Hall, London, 1959. 460 pp. \$8. This volume is a record of both special lectures and technical papers presented at the American Astronautical Society's fifth annual meeting, which was held in conjunction with the 125th meeting of the AAAS. The contents of the volume are "Space exploration and human welfare" (H. L. Dryden); pt. 1, "Upper atmosphere research and re-entry mechanics"; pt. 2, "Space vehicle design"; pt. 3, "Guidance and instrumentation"; pt. 4, "Satellite mechanics and space exploration"; pt. 5, "Rockets and satellites"; pt. 6, "Man's environment in space"; "The flight of the monkey in the joint Army-Navy biological experiment" (N. Barr); "Survival of terrestrial micro-organisms under simulated martian conditions" (J. D. Fulton); "On the relation of oxygen consumption to oxygen tension" (D. E. Beischer); "Atmosphere contaminants and their control" (G. J. Duffner).

Advances in Electronics and Electron Physics. vol. 11. L. Marton, Ed. Academic Press, New York, 1959. 534 pp. \$15. Contents: "Recent advances in photoemission," P. Gorlich; "Parity nonconservation in weak interactions," R. M. Sternheimer; "Quantum efficiency of detectors for visible and infrared radiation," R. C. Jones; "Automatic data processing in the physical sciences," G. E. Barlow, J. A.

Ovenstone, F. F. Thonemann; "Operational amplifiers," R. L. Konigsberg; "Radio telemetering," H. B. Riblet; "Electron diffraction structure analysis and the investigation of semiconducting materials," Z. G. Pinsker; "Secondary electron emission from solids," O. Hachenberg and W. Brauer.

Anatomy and Physiology. vol. 2. Edwin B. Steen and Ashley Montagu. Barnes and Noble, New York, 1959. 334 pp. Paper, \$2.50.

Applications of the Theory of Matrices. F. R. Gantmacher. Translated and revised by J. L. Brenner, D. W. Bushaw, S. Evanusa. Interscience, New York, 1959. 326 pp. \$9.

Atomic Energy in the Communist Bloc. George A. Modelski. Melbourne Univ. Press, Melbourne, Australia; Cambridge Univ. Press, New York, 1959. 226 pp. \$5.50.

Canadian Cancer Conference. vol. 3. R. W. Begg, Ed. Academic Press, New York, 1959. 475 pp. \$12. Contents: "Nucleic acids," "Genetics," "Viruses and tumors," and "Biology of cancer."

The Chemistry of Heredity. Stephen Zamenhof. Thomas, Springfield, Ill., 1959. 117 pp. \$4.25.

Engineering Mechanics. Dwight F. Gunder and Derald A. Stuart. Wiley, New York; Chapman and Hall, London, 1959. 402 pp. \$7.75.

Fundamentals of Electronics. F. H. Mitchell. Addison-Wesley, Reading, Mass., ed. 2, 1959. 271 pp. \$6.50.

General Meteorology. Horace Robert Byers. McGraw-Hill, New York, ed. 3, 1959. 550 pp. \$9.50.

Grass Productivity. André Voisin. Translated from the French by Catherine T. M. Herriot. Philosophical Library, New York, 1959. 367 pp. \$15.

Inside the U.S. Patent Office. The story of the men, the laws, and the procedures of the American patent system. Harry Kursch. Norton, New York, 1959. 189 pp. \$3.95.

An Introduction to Economic Reasoning. Marshall A. Robinson, Herbert C. Morton, James D. Calderwood. Brookings Institution, Washington, D.C., ed. 2, 1959. 346 pp. \$3.

An Introduction to Medical Genetics. J. A. Fraser Roberts. Oxford Univ. Press, New York, ed. 2, 1959. 275 pp. \$7.

Inventions, Patents, and Their Management. Alf K. Berle and L. Sprague de Camp. Van Nostrand, Princeton, N.J., 1959. 611 pp. \$12.50.

Lectures in Theoretical Physics. vol. 1. Lectures delivered at the summer institute for theoretical physics, University of Colorado, Boulder, 1958. Wesley E. Brittin and Lita G. Dunham, Eds. Interscience, New York, 1959. 421 pp. \$6.

Lehrbuch der Organischen Chemie. Paul Karrer. Thieme, Stuttgart, Germany, 1959 (order from Intercontinental Medical Book Corp., New York 16). 1077 pp. \$14.30.

The Location of the Synthetic-Fiber Industry. A case study in regional analysis. Joseph Airov. Technology Press of Massachusetts Inst. of Technology; Wiley, New York; Chapman and Hall, London, 1959. 215 pp. \$9.75.

The Magnetodynamics of Conducting Fluids. Daniel Bershadner. Stanford Univ. Press, Stanford, Calif., 1959. 153 pp. \$4.50.

Methods of Experimental Physics. vol. 6, *Solid State Physics*. pt. A, *Preparation, Structure, Mechanical and Thermal Properties*, 482 pp., \$11.80; pt. B, *Electrical, Magnetic, and Optical Properties*, 430 pp., \$11. K. Lark-Horovitz and Vivian A. Johnson, Eds. Academic Press, New York, 1959.

Modern Adventures under the Sea. Patrick Pringle. Watts, New York, 1959. 240 pp. \$3.95.

Men and Atoms. The discovery, the uses, and the future of atomic energy. William L. Laurence. Simon and Schuster, New York, 1959. 315 pp. \$4.50.

Our Mineral Resources. Charles M. Riley. Wiley, New York; Chapman and Hall, London, 1959. 348 pp. \$6.95.

The Nature of Reading Disability. Donald E. P. Smith and Patricia M. Carrigan. Harcourt, Brace, New York, 1959. 157 pp. \$6.

Notes on the Quantum Theory of Angular Momentum. Eugene Feenberg and George Edward Pake. Stanford Univ. Press, Stanford, Calif., 1959. 56 pp. Paper, \$1.25.

Pediatric Pathology. Daniel Stowens. Williams & Wilkins, Baltimore, 1959. 689 pp. \$20.

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Progress in Cryogenics. vol. 1. K. Mendelssohn, Ed. Academic Press, New York, 1959. 267 pp. \$11.

Progress in Drug Research. vol. 1. Ernst Jucker, Ed. Birkhäuser, Basel, Switzerland, 1959. 607 pp. Fr. 68.

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Quantum Chemistry Integrals and Tables. James Miller, John M. Gerhauser, F. A. Matsen. Univ. of Texas Press, Austin, 1959. 1125 pp. \$15.

Readings in Urban Geography. Harold M. Mayer, and Clyde F. Kohn, Eds. Univ. of Chicago Press, Chicago, Ill., 1959. 632 pp. \$8.50.

Relativity for the Layman. A simplified account of the history, theory, and proofs of relativity. James A. Coleman. Macmillan, New York, 1959. 137 pp. \$3.50.

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Virus Hunters. Greer Williams. Alfred A. Knopf, New York, 1959. 516 pp. \$5.95.