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part must be prepared to encounter numerous and often lengthy quotations from the Greeks, with detailed comments on their significance. Great pains are taken to make clear that although Aristotle has the common reputation (which is correct in the strict sense) of being an antagonist of the atomic theory of Democritus, he did nevertheless believe in the finite divisibility of matter, i.e., the existence of *smallest* pieces of matter. The author feels that the significance of this has often been overlooked (e.g., by Lasswitz), particularly with reference to atomic theory in the later Middle Ages when the first traces of the modern point of view were beginning to appear.

The student of physics will not find anything particularly new in the second half of the book, devoted as it is to the atomic theory as we know it today, save perhaps for the final chapter on the relation between science and philosophy containing a justification for the existence of a genuine philosophy of nature (Naturphilosophie). The reviewer may have missed the point but he suspects the author is talking about metaphysics here and not what is now commonly accepted as the methodology of modern physical science.

The reviewer found this in general a stimulating book. However, even one who is not a professional historian of science could doubtless find some points to question. It seems that more could have been made of Parmenides in connection with the significance of invariance in modern physics. Moreover Plato's meaning for twentieth-century science is dismissed a bit too cavalierly. A physicist would naturally expect to find a rather lengthy discussion of the part played by the kinetic theory of gases in the development of the atomic theory, but the author dismisses this in a couple of pages and there is no mention at all of Daniel Bernoulli.

Looking at the Stars. By Michael Ovenden. 192 pp. Philosophical Library, Inc., New York, 1958. \$4.75. Reviewed by H. K. Kiess, Washington, D. C.

Looking at the Stars is one of a series of books on leisure-time activities. Especially written to interest young people, it has not only the personal touch emphasized by popular science writers, but also the professional authority which they lack; the author has himself made the observations he recommends.

In this little book he manages to cover most of the topics included in an introductory course in astronomy. The first six chapters are devoted to home territory, i.e., our solar system: the sun; the planets, and how they move; time, the seasons, and the calendar; the instruments by which this knowledge is gained. Before journeying into outer space the reader is advised to consult the main features of the celestial map; he is then ready to proceed.

As for the stars, the author considers their various types, distances, motions, sizes, temperatures, masses, and luminosities, evidence for all of which is presented with appropriate diagrams. He describes spectroscopic

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methods for determining composition as well as motion, and with clarity he unravels the clue to the shell star. After describing our galaxy and other stellar systems as far as telescopic methods can reach, he continues the spaceward journey, via radio methods, to penetrate beyond the optical limit.

The final chapter, "See for Yourself", suggests various observations for the reader to make and when to look for what. And we know he is Scottish when he discusses buying a telescope when "you are earning your own living". The conversational tone should appeal to youthful readers, as well as to older ones, who wish to be informed about matters astronomical without resorting to interpretations of technical publications by nonscientist writers. Because the author is an astronomer this book is genuine. Sky photographs are numerous and the illustrations by Mrs. Ovenden are excellent.

Books Received

SOME PROBLEMS IN CHEMICAL KINETICS AND REACTIVITY, Vol. 1 (2nd Revised Edition). By N. N. Semenov. Translated from Russian by Michel Boudart. 239 pp. Princeton U. Press, Princeton, N. J., 1958. Paperbound \$4.50.

ADVANCES IN GEOPHYSICS, Vol. 5. Edited by H. E. Landsberg and J. Van Mieghem. 325 pp. Academic Press Inc., New York, 1958. \$10.00.

INTRODUCTION TO FUNCTIONAL ANALYSIS. By Angus E. Taylor. 423 pp. John Wiley & Sons, Inc., New York, 1958. \$12.50.

MOMENTS OF DISCOVERY. Vol. 1, The Origins of Science; 497 pp. Vol. 2, The Development of Modern Science; 509 pp. Edited by George Schwartz and Philip W. Bishop. Basic Books, Inc., New York, 1958. 2-vol. set \$15.00.

PATTERNS OF DISCOVERY: An Inquiry into the Conceptual Foundations of Science. By Norwood Russell Hanson. 241 pp. Cambridge U. Press, New York, 1958. \$5.50.

READINGS IN LINEAR PROGRAMMING. By S. Vajda. 99 pp. John Wiley & Sons, Inc., New York, 1958. \$3.00.

PROCEEDINGS OF THE MIDWEST CONFERENCE ON THEORETICAL PHYSICS (Washington U., St. Louis, Mo., March 1958). 225 pp. Sponsored by Nat'l Science Foundation, 1958. Paperbound.

DER LICHTELEKTRISCHE EFFEKT UND SEINE ANWENDUNGEN (2nd Revised Edition). By H. Simon, R. Suhrmann, K. W. Böer, F. Eckart, W. Leo. 747 pp. Springer-Verlag, Berlin, Germany, 1958. DM 97.50.

GMELINS HANDBOOK OF INORGANIC CHEMISTRY (8th Revised Edition). *Zirkonium*, System No. 42; 448 pp.; clothbound \$63.84, paperbound \$62.64. *Hafnium*, Supplement, System No. 43; 23 pp.; clothbound \$5.28, paperbound \$4.08. *Germanium*, Supplement, System No. 45; 576 pp.; clothbound \$80.88, paperbound \$79.68. *Sauerstoff*, Part 3, System No. 3; 818 pp.; paperbound DM 283.00. Verlag Chemie, GmbH, Weinheim, Germany, 1958.

VOCATIONAL AND PROFESSIONAL MONOGRAPHS. No. 98, *The Scientific Instrument Industry*; by James R. Irving; 60 pp. No. 97, *Instrument and Control Engineering*; by Lloyd Slater; 46 pp. Bellman Publishing Co., Cambridge, Mass., 1958. Paperbound \$1.00 each.

PLANNING OF EXPERIMENTS. By D. R. Cox. 308 pp. John Wiley & Sons, Inc., New York, 1958. \$7.50.

PROGRESS IN SEMICONDUCTORS, Vol. 3. Edited by Alan F. Gibson, R. E. Burgess, P. Aigrain. 210 pp. John Wiley & Sons, Inc., New York, 1958. \$8.50.

ATOMS FOR PEACE SET. Prepared for US Atomic Energy Comm. by Addison-Wesley Publishing Co., Inc., Reading, Mass., 1958. *Project Sherwood: The US Program in Controlled Fusion*, by Amasa S. Bishop, 216 pp., \$5.75. *Radiation Biology and Medicine: Selected Reviews in the Life Sciences*, edited by Walter D. Claus, 944 pp., \$11.50. *The Transuranium Elements*, by Glenn T. Seaborg, 331 pp., (Yale U. Press), \$7.00. *Uranium Ore Processing*, edited by John W. Clegg and Dennis D. Foley, 436 pp., \$7.50. *Physical Metallurgy of Uranium*, by A. N. Holden, 262 pp., \$5.75. *Thorium Production Technology*, by F. L. Cuthbert, 303 pp., \$6.50. *US Research Reactor Operation and Use*, edited by Joel W. Chastain, Jr., 366 pp., \$7.50. *Solid Fuel Reactors*, edited by Joseph R. Dietrich and Walter H. Zinn, 844 pp., \$10.75. *Boiling Water Reactors*, by Andrew W. Kramer, 563 pp., \$8.50. *Fluid Fuel Reactors*, edited by James A. Lane, H. G. MacPherson, Frank Maslan, 979 pp., \$11.50. *Sodium Graphite Reactors*, by Chauncey Starr and Robert W. Dickinson, 288 pp., \$6.50. *The Ship-pingport Pressurized Water Reactor*, by personnel of Naval Reactors Branch, Div. of Reactor Development, USAEC, Westinghouse Bettis Plant, Duquesne Light Co., 588 pp., \$9.50.

AN INTRODUCTION TO FLUID DYNAMICS. By F. J. Bayley. 215 pp. Interscience Publishers, Inc., New York, 1958. \$4.50.

SYMPOSIUM ON INFORMATION THEORY IN BIOLOGY (Gatlinburg, Tenn., Oct. 1956). Edited by Hubert P. Yockey, Robert L. Platzman, Henry Quastler. 418 pp. Pergamon Press, London & New York, 1958. \$12.00.

THE CHEMICAL KINETICS OF ENZYME ACTION. By Keith J. Laidler. 419 pp. Oxford U. Press, New York, 1958. \$9.60.

THE GREEN FLASH AND OTHER LOW SUN PHENOMENA. By D. J. K. O'Connell, S. J. 192 pp. (Vatican Observatory, 1958) Interscience Publishers, Inc., New York, 1958. \$6.00.

PRODUCTIVE USES OF NUCLEAR ENERGY: Report on Nuclear Process Heat in Industry. By George Perazich. 44 pp. Nat'l Planning Assoc., Washington, D. C., 1958. Paperbound \$1.25.

HOAXES (2nd Edition). By Curtis D. MacDougall. 338 pp. Dover Publications, Inc., New York, 1958. Paperbound \$1.75.

MAN'S WORLD OF SOUND. By John R. Pierce and Edward E. David, Jr. 287 pp. Doubleday & Co., Inc., Garden City, New York, 1958. \$5.00.

BASIC SCIENCE SERIES. *Light*, by Alexander Efron, 127 pp., paperbound \$2.25. *Liquids and Gases*, by Alexander Efron, 117 pp., paperbound \$2.10. John F. Rider Publisher, Inc., New York, 1958.

GAS TUBES. Edited by Alexander Schure. 72 pp. John F. Rider Publisher, Inc., New York, 1958. Paperbound \$1.50.

BASIC PULSES. By Irving Gottlieb. 175 pp. John F. Rider Publisher, Inc., New York, 1958. Paperbound \$3.50.

FUNDAMENTALS OF TRANSISTORS (2nd Revised Edition). By Leonard M. Krugman. 168 pp. John F. Rider Publisher, Inc., New York, 1958. Paperbound \$3.50.

PROCESS DYNAMICS: Dynamic Behavior of the Production Process. By Donald P. Campbell. 316 pp. John Wiley & Sons, Inc., New York, 1958. \$10.50.