

still more reconditely learned folk presented their ideas on the general subject of climatic change. The papers given at that meeting have now been collected into a fascinating volume, edited and with an introduction by Harlow Shapley. The pertinent material ranges from fossil pollen found in bogs to the orbit of Pluto, and much of it is written with the nonspecialist (and how many of us are paleodendrologists?) in mind. While there is some agreement on the nature of the major climatic changes of the past, the various suggestions offered here for their origin are sometimes fanciful, often contradictory, and always interesting.

Atomic Physics

Atomphysik, by Herbert Graewe (340 pp. Ferd. Dümmlers Verlag, Bonn, Germany, 1954; DM 19.80), is a compact German text at an intermediate level replete with boxed formulas and tables, carefully worked numerical examples, attractive diagrams and illustrations, quantitative graphs, many references to original papers and more advanced treatments, and a good 19-page subject index. The book's fourteen chapters are grouped in three main parts. The first, on basic principles of atomic physics, contains about a hundred pages on the molecular structure of matter, molecular forces and distances, the periodic system of the elements, elementary particles, mass-energy equivalence, wave-particle duality, and the creation and annihilation of matter. The second part, of fifty-odd pages, treats atomic structure, optical and x-ray line spectra, and the electron shell structure of atoms. The remaining half of the book comprises the third part, devoted to the atomic nucleus: methods of detecting and accelerating charged particles, natural and artificial radioactivity, nuclear structure, reactions and transformations, and atomic energy. There are no problems or exercises for the student such as one would probably find in an American text at this level. Nevertheless, the author has ably fulfilled his aim of providing a clear concise exposition of atomic physics for students, for secondary school teachers, and for interested workers in neighboring fields: chemists, medical men and engineers.

Radio Noise Report

In the eight years that have passed since the discovery of discrete extraterrestrial sources of radio frequency noise a quite considerable amount of work has been done in this field. The first source to be identified lay in the constellation Cygnus; since then over one hundred sources have been distinguished. In an effort to summarize the present state of our knowledge about extraterrestrial rf radiation, a committee composed of J. G. Bolton, F. G. Smith, R. Hanbury-Brown, and B. Y. Mills was chosen by the International Scientific Radio Union (URSI) to prepare a report, Special Report N° 3, on *Discrete Sources of Extra-Terrestrial Radio Noise*. This report has now been published with the aid of Unesco and is available from the General Secretariat of URSI, 42 rue des Minimes, Brussels, Belgium, for \$1.50.

Books Received

INTRODUCTION TO OPTICS. GEOMETRICAL AND PHYSICAL (Fourth edition). By John K. Robertson. 416 pp. D. Van Nostrand Company, Inc., New York, 1954. \$6.00.

BIBLIOGRAPHY OF BOOKS AND PUBLISHED REPORTS ON GAS TURBINES, JET PROPULSION, AND ROCKET POWER PLANTS JANUARY 1950 THROUGH DECEMBER 1953. Supplement to NBS Circular 509. By Ernest F. Fiock and Carl Halpern. U. S. Government Printing Office, Washington, D. C., 1954. Paperbound \$0.50.

MASTER'S THESIS IN SCIENCE, 1952. Edited by Barton Bledsoe. 252 pp. Biblio Press, Washington, D. C., 1954. \$7.00.

GAS DYNAMICS OF THIN BODIES. By F. I. Frankl and E. A. Karpovich. Translated from Russian by M. D. Friedman. 175 pp. Interscience Publishers, Inc., New York, 1954. \$5.75.

BIBLIOGRAPHY ON RESEARCH ADMINISTRATION, ANNOTATED. By George P. Bush. 146 pp. The University Press of Washington, D. C., 1954. \$4.00.

EINFÜHRUNG IN DIE THEORETISCHE PHYSIK. Part I Mechanik. By Werner Döring. 119 pp. Walter de Gruyter & Co., Berlin, Germany, 1954. Paperbound DM 2.40.

INTRODUCTION TO ATOMIC PHYSICS (Second revised edition). By Otto Oldenberg. 421 pp. McGraw-Hill Book Company, Inc., New York, 1954. \$6.00.

DER ULTRASCHALL UND SEINE ANWENDUNG IN WISSENSCHAFT UND TECHNIK (Sixth revised edition). By Ludwig Bergmann. 1114 pp. S. Hirzel Verlag, Stuttgart, Germany, 1954. DM 72.—.

SELECTED PAPERS ON NOISE AND STOCHASTIC PROCESSES. Edited by Nelson Wax. 337 pp. Dover Publications, Inc., New York, 1954. Paperbound \$2.00; clothbound \$3.50.

THE GEOMETRY OF RENÉ DESCARTES (With a Facsimile of the First Edition 1637). Translated by David Eugene Smith and Marcia L. Latham. 243 pp. Dover Publications, Inc., New York, 1954. Paperbound \$1.50; clothbound \$2.95.

ON THE SENSATIONS OF TONE AS A PHYSIOLOGICAL BASIS FOR THE THEORY OF MUSIC (Second English edition, revised). By Hermann L. F. Helmholtz. 576 pp. Dover Publications, Inc., New York, 1954. \$4.95.

ELECTROACOUSTICS. THE ANALYSIS OF TRANSDUCTION, AND ITS HISTORICAL BACKGROUND. By Frederick V. Hunt. 260 pp. Harvard University Press, Cambridge, Massachusetts and John Wiley & Sons, Inc., New York, 1954. \$6.00.

LE MAGNÉTISME DES CORPS CÉLESTES. By A. Dauvillier. Book I, Magnétisme Solaire et Stellaire Couronne Solaire et Lumière Zodiacale, 171 pp.; Book II, Variations et Origine du Géomagnétisme, 161 pp. Hermann & C^o, Paris, France, 1954. Paperbound 1600 francs and 1500 francs.

NUCLEAR REACTORS FOR INDUSTRY AND UNIVERSITIES. Edited by Ernest H. Wakefield. 93 pp. Instruments Publishing Co., Pittsburgh, Pennsylvania, 1954. \$2.00.

TELEVISION. THE ELECTRONICS OF IMAGE TRANSMISSION IN COLOR AND MONOCHROME (Second revised edition). By V. K. Zworykin and G. A. Morton. 1037 pp. John Wiley & Sons, Inc., New York, 1954. \$17.50.

PERCEPTUALISTIC THEORY OF KNOWLEDGE. By Peter Fireman. 50 pp. Philosophical Library, Inc., New York, 1954. \$2.75.

GOVERNMENT AND SCIENCE: THEIR DYNAMIC RELATION IN AMERICAN DEMOCRACY. By Don K. Price. 203 pp. New York University Press, New York, 1954. \$3.75.