

One of the main reasons why the narrative manages to hold our attention is that it proceeds with many a refreshing change of pace—now an exciting biographical account, now a leisurely philosophic discourse.

In addition to being a connoisseur of the arts (the chapter on Painting and Perspective, which is the only one illustrated by plates, is among the most convincing), Morris Kline is obviously a well-read man. His penchant for eighteenth-century poetry serves him particularly well: the section that discusses the effect of Newton's work on literature and aesthetics is at once witty and erudite.

The material is presented in chronological sequence. As we reach the more recent developments, such as the contributions of Cantor, Lobachevski, Bolyai, Riemann, and Einstein, we find that we are concentrating more and more on the description of the new theories and less on their implications. When he comes to quantum mechanics, the author wisely declines even to explain the subject itself (much less its influence), and regretfully passes on—to a brilliant final chapter in which mathematics is discussed for its own sake, as an important part of our culture.

*Mathematics in Western Culture* represents an important addition to the book shelf of any scientist who has been touched by the growing awareness of the impact that his work is having on the modern world.

**Physics Literature. A Reference Manual.** By Robert H. Whitford. 228 pp. The Scarecrow Press, Washington, D. C., 1954. \$5.00. *Reviewed by R. A. Beth, Western Reserve University.*

From the preface: "This is a survey of physics literature at the college level. It describes the many types and forms available, selects a representative working collection, and outlines efficient library methods. . . . Background materials have been interspersed for greater interest and information." The arrangement of this guide, by the technology-physics-chemistry librarian of The City College in New York, is novel; it is based on the "approach" (bibliographical, historical, biographical, experimental, mathematical, educational, terminological, or topical) that an information seeker may have in mind. While useful to the research worker, the book should be of particular value to the teacher and student of physics, the graduate student and his advisers, and those who do not have access to expert library guidance.

**Climatic Change. Evidence, Causes, and Effects.** Edited by Harlow Shapley. 318 pp. Harvard University Press, Cambridge, Massachusetts, 1953. \$6.00. *Reviewed by Arthur Beiser, New York University.*

In an effort to elucidate the powerful but unknown forces responsible for the great ice ages, the American Academy of Arts and Sciences held a conference in 1952 at which a number of astronomers, geologists, meteorologists, paleontologists, paleoanthropologists, and

## FOUR NEW TEXTS!

### ELECTRICITY AND MAGNETISM

By RALPH P. WINCH, *Williams College*

Here is a new approach for all undergraduate courses in Electricity and Magnetism at the sophomore level and above. The book assumes only elementary college physics and a previous or concurrent course in calculus. Departing from the conventional, this clear, simply-presented text introduces DC & AC circuit analysis in the first 8 chapters.

756 pages • 6" x 9" • Published January 1955

### FUNDAMENTAL FORMULAS OF PHYSICS

Edited by DONALD H. MENZEL, *Harvard University*

This is a handbook and primary reference for all science majors using either methods or applications of mathematical physics. A comprehensive work, each of the 31 sections has been prepared by an expert in his field. Many of the formulas have never before been collected or published, and emphasis has been placed on including many intermediate steps previously unavailable.

696 pages • 5½" x 8½" • Published January 1955

### INTRODUCTION TO ASTRONOMY

By CECILIA PAYNE-GAPOSCHKIN, *Harvard University*

Assuming only a knowledge of elementary algebra, this new basic text deals with the solar system and with the stars and galaxies. Simply written, yet comprehensive, the book is the only text to include recent important changes in our knowledge of size of galaxies and of the observable universe as presented at the Rome IAU meetings. Profusely illustrated.

508 pages • 6" x 9" • Published June 1954

### ELEMENTARY METEOROLOGY

By GEORGE F. TAYLOR, *Colonel, U. S. Air Force Reserve*

Assuming only high-school math. and physics, this text is basic for courses in Meteorology, Weather Elements, Forecasting; departments of Physics, Geography, Meteorology. Includes discussion of present theories of Earth's origin, weather components, air masses, tropical meteorology, 3-dimensional storm structure. With maps, tables, questions-and-problems.

364 pages • 6" x 9" • Published August 1954

Send For Your Copies Today

**Prentice-Hall** INC.  
70 FIFTH AVENUE  
NEW YORK 11, N. Y.

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<sup>ie</sup>, 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.