

A checklist of new Interscience books in physics

Techniques of High Energy Physics

edited by DAVID M. RITSON, *Department of Physics, Massachusetts Institute of Technology*

1960 544 pages \$16.75

Physics of the Solar Chromosphere

by RICHARD N. THOMAS, *Boulder Laboratories, National Bureau of Standards*, and GRANT ATHAY, *High Altitude Observatory, University of Colorado*

1961 416 pages \$15.50

Fast Neutron Physics

Part 2: Experiments and Theory

edited by J. B. MARION, *Convair*, and J. L. FOWLER, *Oak Ridge National Laboratory*

1961 In press

Part 1: Techniques

1960 1007 pages \$29.00

Introduction to the Theory of Ionized Gases

by J. L. DELCROIX, *University of Paris*, translated by Melville Clark and D. J. BenDaniel

1960 162 pages paper: \$2.50/cloth: \$4.50

An Introduction to Celestial Mechanics

by T. E. STERNE, *Smithsonian Astrophysical Observatory, Cambridge, Mass.*

1960 218 pages paper: \$2.50/cloth: \$4.50

General Relativity and Gravitational Waves

by J. WEBER, *University of Maryland*

1961 Approx. 208 pages paper: \$2.50/cloth: \$4.50

Introduction to Elementary Particle Physics

by R. E. MARSHAK and E. C. G. SUDARSHAN, *University of Rochester*

1961 212 pages paper: \$2.50/cloth: \$4.50

Physics and Archaeology

by M. J. AITKEN

1961 194 pages \$6.00

Atomic Energy Waste

Its Nature, Use and Disposal

edited by E. GLUECKAUF, *Atomic Energy Research Establishment, Harwell*

1961 432 pages \$14.00

Basic Principles of Fission Reactors

by W. R. HARPER

1961 300 pages \$7.50

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mathematician. For example, there is a discussion on pp. 264-5 of the validity of an argument which is crucial to the calculation of the virial expansion for an imperfect gas. The problem raised is a real one, but the answer given does not solve it. The difficulty is not how to calculate the coefficients, given that the expansion (15.7) exists. That is a purely formal question and one can assume $|z|$ to be as small as we please. The question is whether the expansion (15.7) exists at all, and the answer to that is assumed in the mathematical justification. No actual harm is done, and the expansion is certainly correct. But it is an example of the difficulties which must beset any author in the narrows between Scylla and Charybdis.

The introduction to Mayer's cluster diagrams is beautiful and simple. Although the actual estimation of the integrals is beyond the scope of the book, we are given an idea of the basic idea behind the approximation. There is a misprint in diagram (15-37) which might confuse students encountering the idea for the first time.

This is an excellent and beautifully produced book, probably the best of its kind so far. It is very strongly recommended to chemists who are prepared to invest enough work to be able to understand what they are doing, and to physicists who seek a wider picture of the problems of statistical mechanics.

Le Bruit. No. 855 of "Que sais-je" Series. By René Chocholle. 128 pp. Presses Universitaires de France, Paris, 1960. Paperbound 3.70 NF. *Reviewed by R. Bruce Lindsay, Brown University.*

ALL thoughtful persons agree that one of the great hazards of modern civilization is the increasing noise to which advancing technology is exposing the human race. Someone has said that during a large part of our waking hours most of us are immersed in a sea of unwanted sound. The problem has not gone without attention by acousticians and an increasing literature is available on the subject of noise and its prevention. The little book under review is a popular French survey of the principal aspects of the subject which any educated person ought to know for his ultimate good. It is one of the latest in a very large series of short, popular paperbacks with the general title "Que sais-je?". If they are all as well written as this, they can be highly recommended.

In the short space of a little more than 100 small pages, the author has compressed an admirable little treatise containing a clear account of sound and the ear, the general characteristics of noise, the measurement of noise levels, the effects of noise on living organisms, the supportable limits of noise, methods of noise prevention, the protection of the ear against noise and possible cure of auditory injury due to noise, and finally the necessity for legislation against unnecessary noise in all phases of life.

The book does not pretend to be a scientific treatise, but the presentation is clear and accurate and illustrated



Original painting by Olli Sihvonen, Taos, N. M.

Through the use of tissue equivalent dose rate meters carried on various high altitude research rockets, Los Alamos scientists are learning much about radiation in space, including its possible effect on humans. The instruments simulate human tissue, observe the effects of radiation and telemeter the data back to earth.

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New McGraw-Hill Literature in Science

SPACE ASTROPHYSICS

By William Liller, Harvard College Observatory. Ready this month.

This book is the product of a lecture series given at the University of Michigan Department of Astronomy during the 1959-60 academic year on the aspects of astronomy and astrophysics which are concerned with or can be studied from outer space. Many of these lectures by leading space scientists are made available to students and scientists here for the first time.

THE PHYSICAL UNIVERSE

By Konrad B. Krauskopf, Stanford University, and Arthur Beiser, New York University. 576 pages, \$6.50. (Text Edition.)

A simple, clear, and concise presentation of the fundamental ideas of physical science. Aimed at the abbreviated courses in physical science, and the courses for students with little or no background in science, the text emphasizes basic concepts without undue attention to their technological applications. Outstandingly well ordered and prepared format and text.

THE WORLD OF PHYSICS

By Arthur Beiser, New York University. 288 pages, \$4.25, cloth bound; \$2.75, paper bound.

A broad collection of 15 relatively non-technical readings from world famous physicists of yesterday and today designed to communicate to the reader the excitement and adventure in the World of Physics. Various aspects of physics which are generally not included in textbooks are presented: historical, biographical, philosophical, its promise for the future. The physicists' view of physics as written by the leaders and innovators from Galileo to the Moderns.

PLASMA PHYSICS

By James E. Drummond, Boeing Scientific Research Laboratories. 400 pages, \$12.50.

Based on the recent conference in Plasma Physics conducted at the Stanford Research Institute, this text provides an extensive review of some of the important special areas in plasma physics such as quantum plasma physics, detailed statistical mechanics of plasmas and aerodynamic aspects of magnetohydrodynamics. Emphasis throughout is on the unsolved problems in plasma physics.

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by well-chosen diagrams. The short bibliography at the end contains references as late as 1959 and includes German, French, and American works on noise and its control.

Mechanics and Properties of Matter (2nd ed.). By Reginald J. Stephenson. 367 pp. John Wiley & Sons, Inc., New York, 1960. \$7.50. Reviewed by T. Teichmann, General Atomic, Division of General Dynamics Corporation.

NEWTONIAN mechanics forms the basis for a large portion of classical physics, and engineering, and this book presents and develops the connection at the undergraduate level. The contents are not quite as ambitious as the title might lead one to think; some aspects of the mechanical behavior of solids, liquids, and gases are discussed, but not the "properties" of materials as they are usually understood these days.

All the standard topics are clearly discussed, including Newton's laws, gravitational attraction, relative motion, and elliptic orbits for particle motion; rigid mechanics; oscillations of systems of particles and elastic substances; and statics and elementary hydrodynamics. There are a number of examples in the text and the general treatment encourages the reader to work out the numerous examples at the end of the various chapters.

Special attention is given to a variety of problems not usually encountered in such detail in such a text. These include the transformations of special relativity, the scattering of nuclear particles, a detailed discussion of the rotation of rigid bodies, including Euler's equations and their application to the spinning top, and dimensional analysis.

The presentation is carried out in such a way that more advanced study of classical mechanics will not require a complete reorientation of the student, and the book should prove useful to both science and engineering undergraduates.

Graphite and Its Crystal Compounds. By A. R. Ubbelohde and F. A. Lewis. 217 pp. Oxford U. Press, New York, 1960. \$5.60. Reviewed by Stuart A. Rice, Institute for the Study of Metals, The University of Chicago.

IN many courses in elementary (and even advanced) chemistry the student is led to believe that graphite is an inert form of carbon, somewhat related in electronic structure to aromatic molecules, but of little chemical interest in its own right. This very clearly written book should do much to rectify the situation. I have read it not as an expert on graphite (which I am not), but as a chemist interested in the properties of condensed matter. Not only have I learned many surprising facts, but also have had many ideas for research problems suggested by the material presented.

The text is divided into nine chapters, four devoted to pure graphite and the remaining five to compounds of graphite and their properties. In all instances, the