

Oxford



## Jean D'Alembert SCIENCE AND THE ENLIGHTENMENT

By THOMAS L. HANKINS, *University of Washington*. D'Alembert's career spanned the two worlds of the academies and society in eighteenth-century France, and he played a part in many of the scientific controversies of his time. Professor Hankins elucidates D'Alembert's scientific thought and places it in the context of the intellectual world of Enlightenment France. 10 text figures. \$11.25

## An Introduction to Liquid Helium

By J. WILKS, *Pembroke College, Oxford*. This volume, based on the author's larger book *THE PROPERTIES OF LIQUID AND SOLID HELIUM* presents an introductory account of liquid  $^3\text{He}$  and liquid  $^4\text{He}$ . (Oxford Library of Physical Sciences.) \$5.00

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## THE DEPARTMENT OF PHYSICS

**Carleton University, Ottawa,  
Canada.**

invites applications for the position of the Chairman of the department. Main areas of work in the department are: experimental and theoretical elementary particle physics, experimental and theoretical intermediate energy nuclear physics, and geochronology using techniques of mass spectrometry. Further information may be had by writing to Chairman, Selection Committee, Department of Physics, Carleton University, Ottawa, Canada.

organizer, E. J. Richards, was at that time director of the Institute of Sound and Vibration Research at the University of Southampton. He has since become vice-chancellor of Loughborough University.

The volume consists of 17 articles, divided into five groups that are all related to some aspects of industrial noise. Topics covered include deafness in industry, social effects of noise, noise and the law, noise control in factories and roadway noise. On the average, about equal attention is paid to the origins of noise and to possible methods for its suppression. The conference was international to the extent that although eleven of the papers are by British authors, three German and two Dutch contributions are included as well as one from the US. The bibliographical references are moderately extensive, and sufficient regard is paid to recent relevant American studies, particularly along physiological and psychological lines.

The presentations are in general clear and illustrated with well drawn graphs and diagrams. The volume could, of course, have been made more useful if it had included a few summarizing sections to tie together the individual contributions and an index. However, one hopes that this publication will serve to attract more attention to the vital problems of noise and its control.

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## Elements of Gasdynamics And the Classical Theory of Shock Waves

By Ya. B. Zel'dovich, Yu. P. Raizer  
115 pp. Academic, New York, 1969.  
\$3.95

This small paperback is identical to the first chapter of the two-volume work, *Physics of Shock Waves and High Temperature Hydrodynamic Phenomena* by the same authors. It was printed separately in order to reach a wider audience of students of gasdynamics and shock waves.

Consequently, as an introduction to a work devoted largely to shock waves, this book is entirely devoted to the simplest aspects of wave phenomena in gasdynamics. This includes an introduction to sound waves, the theory of characteristics, rarefaction

waves, simple shock waves, effects of viscosity and heat conduction and a few simple examples. The latter are mostly strong-point explosions and expansion of a gas into a vacuum.

By considering flows with one space coordinate and the time coordinate, the authors keep the mathematics as simple as possible while emphasizing the physical and intuitive aspects. This is the style of the complete two-volume work and anyone who reads this first chapter will no doubt be motivated to turn to the larger work for the fascinating study of shock waves in real gases at high temperatures where the effects of radiation and dissociation play a primary role. Specific references to later chapters in the two volumes facilitate this.

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and Astronautics  
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## Nuclear Structure, Vol. 1

By Aage Bohr, Ben R. Mottelson  
471 pp. Benjamin, New York, 1969.  
\$25.00

This is the first of three volumes that took ten years to write. The authors are the two foremost living exponents of the collective and unified models of atomic nuclei. Since, according to the preface, the second and third volumes are concerned with "consequences of nuclear deformations" and with "collective phenomena," respectively, this volume may be regarded as preparatory. The collective model gives in some cases remarkable agreement with experiment. A systematic presentation of its theoretical justification should therefore be welcomed. This first volume is devoted mainly to single-particle motion and to "a summary of the important symmetry features of nuclear systems," which are applicable to the other two volumes as well.

As set forth in the preface the approach is concerned with "the identification of the appropriate concepts and degrees of freedom that are suitable for describing phenomena" through a combination of "approaches based partly on clues provided by experimental data, partly on the theoretical study of model systems," and of general symmetry relations. The more customary procedure consists in starting with data and hypotheses regarding nucleon-nucleon (N-N) interactions