

signing low-noise amplifiers. The article by Livingston is aimed at providing practical information for people interested in using image tubes. On the basis of actual use the author considers the advantages and disadvantages for astronomical purposes of the following types of tubes: Lallemand, cascade, transmission secondary emission and image orthicon.

One thing that struck me about this volume was that in four of the six articles some aspect of superconductivity is discussed. Does this mean that the technology of superconductivity is finally coming of age?

For those directly involved with the areas discussed this volume should be very attractive because of its summary of a great amount of theoretical and experimental information. It should also prove worthwhile to the more casual reader who, by reading the first few pages of each article, will be introduced to the important developments and the problems that remain.

* * *

The reviewer is an associate professor at Stevens Institute of Technology.

Scientist as decision maker

THE POLITICS OF SCIENCE: READINGS IN SCIENCE, TECHNOLOGY AND GOVERNMENT. William R. Nelson, ed. 495 pp. Oxford U. Press, London, 1968. Paper \$3.95

by Craig Hosmer

The scientist searching for clues regarding his role in the political decision-making process affecting his profession will no doubt glean interesting tidbits from William R. Nelson's new book, *The Politics of Science*. The chances are, however, that he will learn more about the subject than he really cares to know.

Lt. Col. Nelson, a multidegreed assistant professor of political science at the Air Force Academy, has combed books, periodicals, government and "think-tank" publications and congressional committee hearings to gather a group of essays assessing the roles of science and scientists in modern American society.

The fact that these roles still remain somewhat undefined is less a reflection on Nelson's diligence as an editor than proof that they are still evolving along with technology.

The readings first trace the post-

World-War-II development of atomic, space and computer sciences, and the government's organization for major involvement in the management and financing of research and development. The subject matter then turns to the scientists' past and present influence as decision makers vis-à-vis domestic and foreign policies and includes some hints regarding the future interplay between science and politics.

Nelson, mercifully spares the reader the chore of burrowing through all 495 pages by grouping the essays into six chapters. The final three chapters ("The Scientist as a Decision-Maker," "Science and Foreign Policy," and "Government and the Future of American Science") will be of considerable interest and enlightenment to the professional. The first three chapters are of historical nature and will be of interest primarily to the student.

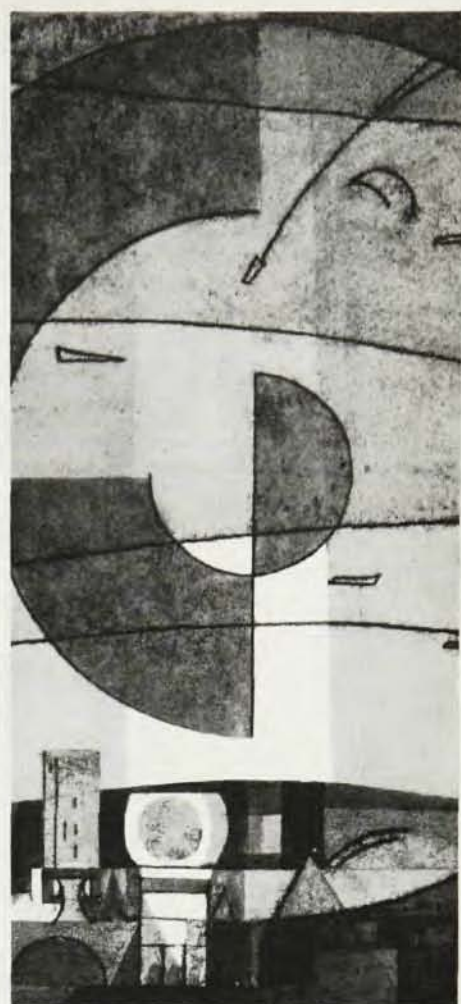
Unfortunately some of the chapter titles and introductions are terse and unrevealing, a condition which also applies to the specific readings. Notably missing are abstracts of the individual readings and biographies to establish the credentials of their authors. Some men, such as Vannevar Bush ("Science: The Endless Frontier") come from an earlier generation. Others, such as Burton H. Klein ("Policy Issues Involved in the Conduct of Military Development Programs") work obscurely behind the RAND curtain. It may even be that younger readers will be receiving their first introduction to such venerables as Albert Wohlstetter ("Scientists, Seers and Strategy").

Possibly the book's most useful chapter deals with the scientist as a decision maker. Its essays on the H-bomb decision, the intrascientific conflict over a nuclear test ban and the problems of big, expensive science are timeless readings.

One article of particular interest this election year is the recounting of how science and engineering were mobilized by the "Scientists and Engineers for Johnson-Humphrey" committee during the 1964 presidential campaign.

Although the volume intends coverage only of the US science-political scene, it is enhanced by a reading on Soviet science by John Turkevich.

Somewhat disappointingly the various authors pay due attention to the evolving role of the scientist in the political process but ignore the changing role of the politician in the scientific process. Although Nelson cannot



PHYSICISTS Engineers

BS, MS, or PhD in Physics, Electrical, Mechanical or Aeronautical Engineering with all levels of experience to conduct systems analysis and analytical studies in the field of target signature research. Experience in the field of radar data analysis is desirable.

Research involves the determination of target characteristics useful to anti-ICBM systems. Included are investigations into the relevant aspects of reentry physics and the definition of electromagnetic backscattering properties both before and during reentry, leading to discrimination between real and apparent threats.

Analyses of the impact of these factors on defense system decision-making logic also will be conducted.

Write to Mr. S.T. Rentschler
Professional Placement
Cornell Aeronautical Laboratory, Inc.
Box 235, Buffalo, N.Y. 14221



**CORNELL AERONAUTICAL
LABORATORY, INC.**
OF CORNELL UNIVERSITY

An Equal Opportunity Employer

BEGINNING 1969 . . .

2 NEW RESEARCH JOURNALS FROM

plenum
PUBLISHING CORPORATION

JOURNAL OF STATISTICAL PHYSICS

Editor: **Howard Reiss**

Department of Chemistry, UCLA, Los Angeles, California 90007

BOARD OF EDITORS:

BERNI J. ALDER, Lawrence Radiation Laboratory. THOR BAK, University of Copenhagen. A. V. BALAKRISHNAN, UCLA. A. BELLEMANS, University of Brussels. E. RICHARD COHEN, North American Rockwell Science Center. JOHN S. DAHLER, University of Minnesota. ROBERT P. FUTRELLE, North American Rockwell Science Center. HAROLD GRAD, New York University. TERRELL L. HILL, University of California/Santa Cruz. THOMAS KAILATH, Stanford Electronics Laboratories. RUDOLF E. KALMAN, Stanford University. JAMES C. KECK, MIT. RYGO KUBO, University of Tokyo. SHNEIOR LIFSON, Weizmann Institute of Science. WILLIAM C. MEECHAM, UCLA. RONALD PROBSTEN, MIT. KURT SHULER, University of California/San Diego. FRANK H. STILLINGER, JR., Bell Telephone Laboratories. DIRK TER HAAR, University of Oxford. JACOB WOLFOWITZ, Cornell University. LOTFI ZADEH, University of California/Berkeley. JACK M. ZIMMERMAN, North American Rockwell Science Center. J. M. HAMMERSLEY, University of Oxford.

The application of statistical physics to such diverse fields as statistical mechanics, kinetic theory, stochastics, information and communications theory, macroeconomics, investigation of life processes, and mathematical methods study has created the need for an interdisciplinary forum to encourage communications between specialists in these areas. The *Journal of Statistical Physics* will provide this forum by emphasizing the collective interests underlying diverse approaches to statistical problems. It is devoted to the formation of an informed "statistical physics community" by the rapid publication of new ideas and review articles, expositions on the progress of special groups, their themes and insights, sponsorship of a question and answer department, and reports of events of special interest.

JOURNAL OF LOW TEMPERATURE PHYSICS

Editor: **John G. Daunt**

Stevens Institute of Technology, Cryogenics Center, Castle Point Station, Hoboken, New Jersey 07030

Board of Editors and Statement of Policy will soon be announced.

Contributions to either journal should be sent directly to the appropriate Editor.

For sample copies, subscription information, and additional details, please write to the publishers.

consultants bureau/plenum press

Divisions of Plenum Publishing Corporation
227 W. 17th ST., NEW YORK, NEW YORK 10011

A lot depends on Point of View



Ours happens to be Long Wave Length Infrared Systems

We're 800 Specialists strong, the largest Infrared research and development staff at a single facility in the United States.

We particularly need help in the following areas:

- Satellite Instrument Systems Analysis
- Optical Design
- Sensor Development
- Electronic and Mechanical Design with IR applications

We think we have both the programs and the technical atmosphere to satisfy even the most discriminating.

That's our point of view . . . what's yours?

Please submit resume, including salary requirements to:

Mr. D. L. Rowe

Manager, Professional Placement

P. O. Box 303-K

Azusa, Calif. 91702



ELECTRONICS DIVISION

A subsidiary of
The General Tire & Rubber Co.

an equal opportunity employer

be faulted for the oversight of his authors, it would appear appropriate for him to have mentioned that the circa-1968 politician is a different breed of animal from the stereotyped ward heeler of a bygone era. Some politicians of today are surprisingly astute on scientific matters and willing and eager to learn more.

Worth noting is the outstanding indexing job performed on this volume. It could be nothing less than a joint effort of one of Nelson's best classes of senior students. It reveals that the Presidents and their science advisors are the most widely quoted authorities on and in *The Politics of Science*; that the two most colorful, opinionated and quotable scientists of our times are Edward Teller and Hans Bethe; and that many, many writers on the relationship of the scientist with the outside world cannot proceed far into their subjects without a kind or unkind reference to C. P. Snow.

* * *

Craig Hosmer is the ranking house minority member of The Joint Committee on Atomic Energy.

Light reading for experimentalists

ADVANCED OPTICAL TECHNIQUES.
A. C. S. Van Heel, ed. 678 pp.
North-Holland, Amsterdam (Interscience, New York), 1967. \$35.00

by Joseph G. Hoffman

The editor, A. C. S. Van Heel, writes in the forward: "The respective chapters can be considered as introductions to the pertinent literature." His intent was to have a volume equivalent to a *Progress in Optics*, except that the chapters would be fully developed rather than cursory reviews. The intent is achieved and the result is a contribution useful to both student and expert. The 18 chapters by 24 contributors serve as a massive reference text on selected aspects of current optics.

The list of chosen subjects is not what one might expect. The words hologram, holography and space-filter are not in the index. Seven of the chapters are about very practical subjects such as optical glass and the production of optical parts (a fascinating chapter, telling with numerous photographs how lenses, for example, are made). The other 12 chapters deal with thin films, fibers, coherence, interferometry and spectrometry.

Van Heel died before the volume was assembled, and this misfortune may account for the book's editorial problems. For example: There are numerous redundant statements; the index shows that "triple-slit interferometer" can be found on page 232, but it is on page 236; chapter 12, about a new kind of interferometer, will remain a puzzle for most readers because the two key figures referred to in the text as numbers 11 and 12, were left out.

The format is excellent. Heavy, glossy paper with many figures and photographs support the text. Each chapter has an adequate list of references and aside from its editorial deficiencies this volume is a commendable book for experimentalists.

* * *

Joseph G. Hoffman is professor of physics, specializing in biophysics, at State University of New York at Buffalo.

What holds the world together

STATISTICAL PHYSICS. (Berkeley Physics Course, Vol. 5) By Frederick Reif. 396 pp. McGraw-Hill, New York, 1967. \$5.50

by Eugenie V. Mielczarek

Statistical Physics by Frederick Reif is the last volume of the Berkeley Physics Course. The text is intended for the last eight weeks of sophomore level. It is an introduction to the study of macroscopic systems and includes those topics that are usually presented as "Heat" on the freshman level. The delayed teaching of these topics in the Berkeley course enables the student to study properties of macroscopic systems with a foundation of classical physics and introduction to quantum physics (volumes 1 through 4). The order of presentation of the material differs from the usual. The usual freshman introduction to macroscopic systems comes after classical mechanics and starts with the kinetic theory of gases. This text starts with a three-chapter introduction to statistical theory and concepts of probability. Chapters 4, 5 and 6 discuss the basic concepts of statistical mechanics and thermodynamics. The last two chapters consider thermodynamic interactions and transport processes.

In no other published volume of the Berkeley Physics Course has the standard presentation of a topic been so

For REALLY DIFFICULT APPLICATIONS



Vidicon



Image intensifier



9536



9594



9578



9603

Specify



Photosensitive Devices

EMI offers photomultipliers with various photocathodes, and all dynode configurations in sizes from 1/2" to 12", many with fused silica windows.

Now available: four stage image intensifier and 1/2" vidicon.

Write for catalog, or call for specific information.

Whittaker
CORPORATION
GENCOM DIVISION

80 Express St., Plainview, L.I., N.Y.
516-433-5900 TWX 516-433-8790
*EMI ELECTRONICS, LTD.