A.P.S.–A.A.P.T. MEETING

HOTEL NEW YORKER

January 30–February 2, 1957

The joint Winter Meeting of the American Physical Society and American Association of Physics Teachers will feature an interesting exhibit of scientific instruments, laboratory apparatus, and the latest technical books. The exhibit will be located on the mezzanine of the Hotel New Yorker, adjacent to the registration desk, and all are cordially invited to visit. The following companies will exhibit their newest products:

Academic Press, Inc.
Addison-Wesley Publishing Company
Beckman & Whitley, Inc.
Cambridge University Press
Central Scientific Company
The Ealing Corporation
The Gaertner Scientific Corporation
General Electric Research Laboratory
General Radio Company
Keithley Instruments, Inc.
J. Klinger
McGraw-Hill Book Company
Nuclear Magnetics Corp.
Prentice-Hall, Inc.
Springer Publishing Company
Tracerlab, Inc.
Vacuum Electronic Engineering Corp.
D. Van Nostrand Company, Inc.
W. M. Welch Manufacturing Company
John Wiley & Sons, Inc.

dents familiar with vector analysis as well as Maxwell's equations and who have had an introductory course in theoretical physics. Although the text is highly technical, it is developed with such a readable style and includes such absorbing examples that one feels compelled to study through the entire book carefully. Thus, not only does this book provide an introduction to the physics of fully ionized gases but it will certainly stimulate many readers into actively pursuing this general field.

Physics and Mathematics. Vol. 1. Series 1 of Progress in Nuclear Energy. Edited by R. A. Charpie, J. Horowitz, D. J. Hughes, D. J. Littler. 398 pp. (Pergamon Press, England) McGraw-Hill Book Co., Inc., New York, 1956. $12.00. *Reviewed by E. Richard Cohen, Atomics International.*

The United Nations Conference on the Peaceful Uses of Atomic Energy held in Geneva last August ended fifteen years of secrecy in the field of atomic energy. Although there was not a complete release of information in all fields, a vast amount of data was presented in the course of the two-week meeting.

The wide scope of the material presented at the Geneva Conference may be indicated by the fact that Pergamon Press and McGraw-Hill Book Co. have developed the information into eight volumes: *Physics and Mathematics, Reactors, Process Chemistry, Technology and Engineering, Metallurgy and Fuels, Biological Sciences, Medical Sciences,* and *Economics.* Each volume serves as the first of a continuing series which will present an annual review of the field. The papers which make up the present volume are more than reedited versions of the originals; in most cases the results of several papers have been combined into a single unified presentation. Data and experimental techniques from laboratories in different countries have been critically compared and coordinated—a task which was not possible in the original papers due both to the haste with which they were prepared and to the lack of opportunity for comparison prior to the conference itself. The more important contributions in physics and mathematics are collected here into eleven review articles. The first three are concerned with the neutron cross sections and neutron yields of the principal fissionable isotopes; the first paper by Harvey and Sanders compares the British, US, and Russian data in the range of neutron energies below one electron volt; in the second paper Egelstaff and Hughes discuss the experimental data in the resonance region (1 to 1000 electron volts). In the kilovolt region, where the doppler broadening and instrumental resolution make measurements on individual resonances impossible, Hans Bethe has attempted to correlate the existing data with the available statistical models of nuclear structure. The next group of three papers treats the cross-section data of the nonfissionable elements. The neutron capture cross section of Xe^{135}, which exceeds 3×10^6 barns, warrants a chapter of its own; this giant cross section is probably

responsible for the development of the shell theory of nuclear structure. The measurements of resonance capture integrals, the determination of delayed neutron yields and lifetimes, studies of homogeneous critical assemblies, experimental and theoretical studies of intermediate spectrum reactors, and fast reactor physics are each treated in comprehensive reviews. One of the most interesting papers, because it represents an approach to the problem which was only superficially used in the West, is the paper by S. M. Feinberg on the Russian methods for the evaluation of heterogeneous thermal reactors. The paper is a résumé of work which is original and imaginative, and indicates that the West does not have any monopoly in reactor theory. In almost all of the other chapters however (and in fact, in almost all of the Geneva papers) the similarity in approach between West and East was striking, serving to reiterate the universality and political independence of physics.

Low Temperature Physics I. Vol. 14 of Handbuch der Physik. Edited by S. Flügge. 349 pp. Springer-Verlag, Berlin, Germany, 1956. DM 72.00 (if part of series DM 57.60). *Reviewed by Abraham S. Friedman, US Atomic Energy Commission.*

Low Temperature Physics I maintains the high standards of quality and thoroughness set by the editors and publishers of the monumental *Handbuch der Physik* in the previous volumes issued in this series. The title of this volume (Low Temperature Physics) may be misleading, since much of it, in reality, is concerned with Cryogenic Engineering and the book might better have been so called.

The first chapter is a very up-to-date and detailed description of the production of low temperatures down to liquid hydrogen temperatures. J. G. Daunt, the author of this chapter, discusses both the theory and design of the various types of gas liquifiers. S. C. Collins, in a chapter on helium liquifiers and carriers is no less thorough in his discussion of the principles and the apparatus involved in helium liquefaction. In both of these chapters, various liquifiers and their component parts are described in great detail with many illustrations and diagrams.

Electrical and thermal conduction at low temperatures are discussed by D. K. C. MacDonald and P. G. Klemens, respectively. MacDonald introduces his chapter with a short, lucid account of the historical development of the theory of electrical conductivity of metals and alloys and then describes the experimental methods and techniques used in the measurement of electrical properties at low temperatures. Klemens' chapter contains a very thorough theoretical treatment of the conductivity of dielectric solids, metals and alloys, and superconductors. He also includes pertinent experimental results.

The final chapter, by P. H. Keesom and N. Pearlman, reviews the theory, experimental techniques, and results