

## Book Reviews

**Pile Neutron Research in Physics.** Proceedings of a Symposium, Vienna, 17-21 October 1960. IAEA. 654 pp. \$12.00.

Close scrutiny of the book, *Pile Neutron Research in Physics*, dispels a first impression that it is merely another compilation of reports presented by specialists of the overall reactor oriented programs of large government laboratories. Nevertheless, a question immediately arises with the reader, at least in a college professor's mind. It is, "What is the value of such a book to me?" Many of the reports are concerned with the assemblage of large and expensive experimental apparatus for use in neutron diffraction and capture gamma-ray measurements, which could not possibly be purchased by the average university. For this reason, perhaps, the book would not be too useful to persons initiating reactor oriented nuclear research in a university; unless, of course, an unusually large research budget was available. The exception in possible usefulness of the material might be in some of the rather ingenious experiments reported by the FRM group at Munich, which certainly are informationally intriguing. One fact which does, however, become quite apparent upon perusal of the book is the advanced status of nuclear physics research utilizing nuclear reactors. It is certainly true that this collection of papers can well serve to inform the reader of the current research areas being pursued, and the present state of knowledge at the frontiers in these areas.

The book is conveniently divided into eight descriptive sections, with Section A being a commemorative address presented by Dr. H. Palevsky, eulogizing Dr. Donald J. Hughes, representing an excellent tribute to a former great scientist. However, there is considerable overlap of the material of the succeeding sections. The first two of these (Sections B and C) constitute a series of reviews of pile neutron physics research at the various laboratories represented at the conference. Section D covers pile neutron nuclear physics experiments. Then Section E is concerned with selected problems of research in nuclear physics, and describes several new techniques that have been developed to carry out specific experiments.

Sections F and G contain further reviews of neutron research in liquid and solids, again using, for the most part, neutron diffraction techniques. In Section H there are several valuable papers describing experimental facilities and newly designed apparatus. This section could be of considerable value to research groups planning to build or modify neutron diffraction facilities for use with a relatively high powered research reactor.

In conclusion, I believe the book is worthy of purchase by persons actively engaged in reactor oriented research around a big reactor, and also by persons who want to keep up with the frontiers of knowledge in certain areas of pile neutron research.

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*About the Reviewer: Dr. R. G. Cochran received his AB and MS degrees from Indiana University and his Ph.D. from The Pennsylvania State University. From 1950 to September, 1954 he was employed as a physicist in the Physics Division of the Oak Ridge National Laboratory. In 1954 Dr. Cochran joined the faculty of Penn State University, later becoming Director of the Research Reactor Facility. Since 1959 Dr. Cochran has been Head of the Department of Nuclear Engineering and the Nuclear Science Center at Texas A&M University.*

**Radiation Hazards and Protection.** 2nd Edition. By D. E. Barnes and Denis Taylor. Pitman, New York, (1963). 221 pp., 63 figs., \$8.50.

This book, originally published in 1958 and revised in 1963, is an elementary treatise on radiation protection and the measurements involved. Though it should prove useful to technicians in the field, it will be of limited value to most readers of *Nucl. Sci. Eng.*

The authors provide a brief introduction to the nature of the particulate and electromagnetic radiation with which they are concerned and dis-