L. W. Nordheim joined the General Atomic Division of General Dynamics in 1956 where he is a Senior Research Advisor and Chairman of the Theoretical Physics Department. He obtained his PhD in Goettingen, Germany, in 1923. He was Professor of Physics at Duke University, 1937-56. He joined the Manhattan Project in 1943 and remained at ORNL till 1947. He also was resident consultant at Los Alamos, 1950-52. His work covers a wide area in quantum mechanics and statistics, cosmic rays, and nuclear and reactor physics. He received honorary degrees from Karlsruhe, Germany, and from Purdue University. He is a fellow of the ANS and of the APS and a member of the Advisory Committee for Reactor Physics of the AEC. He met Fermi for the first time at Goettingen in 1925 and later on numerous occasions.

MORE THAN THE CLASSIC DISCUSSIONS

Title Physics of Nuclear Reactors

Author D. Jakeman

Publisher American Elsevier Publishing Co., Inc., 1966

Pages xii + 356

Price $10.00

Reviewer Noel Corngold

According to the flyleaf and to the prefatory paragraphs, Dr. Jakeman's book is intended for graduate engineers and physicists who wish to become acquainted with the "*Physics of Nuclear Reactors*." "But," the American reader will say, "what about 'Glasstone and Edlund'?" A proper review should keep Glasstone and Edlund's classic text in mind.

Both books contain a little nuclear physics, and straightforward discussions of elementary diffusion theory and neutron slowing down. Glasstone and Edlund's book is longer, because the style is leisurely and the authors are attentive to detail. Dr. Jakeman often refers the reader to Glasstone and Edlund for the proof of a particular formula. He cannot maintain a leisurely pace because he has so much more material to discuss. Here, I think we have the distinction between the two books. Dr. Jakeman believes that his book, which appears 15 years later than Glasstone and Edlund, should contain more than the classic discussions of neutron diffusion. He writes a chapter on Fast Reactors, another on Neutron Thermalization, and one on Nuclear Fuels. He presents enlightening graphs of the variation of η with neutron energy, and of the behavior of energy eigenfunctions in thermalization. There is, no doubt, more "physics" in Jakeman's book than in Glasstone and Edlund's. Details in the treatment of classic problems in neutron diffusion are sacrificed to achieve timeliness.

As one might guess, from the listing of subject matter, the technical level of Jakeman's book varies considerably from chapter to chapter. And, though the treatment is generally acceptable, experts can carp at the accuracy of the treatment of their subjects. For example, the apparent conflict between the "American formula" $a + b\,(S/M)$ and the "Russian formula" $c + d \times \sqrt{S/M}$ in the theory of resonance capture, was resolved, at least seven years ago, through the research of J. Chernick and his collaborators. In the chapter on thermalization, several of the equations appear to be muddled, and J. E. Wilkins is denied the credit of first constructing the heavy-gas equation.

In spite of these errors in scholarship, and the variation in difficulty from chapter to chapter, *Physics of Nuclear Reactors* is well-written and interesting. Doubtless, it will convey to many outsiders a feeling for "modern" reactor physics.

Noel Corngold is Group Leader in Theoretical Reactor Physics at Brookhaven National Laboratory. He received training in physics at Columbia and Harvard (PhD 1954), and is particularly interested in the theory of neutron transport.

SHORT BOOK - SHORT REVIEW

Title Advances in Insect Population Control by the Sterile-Male Technique

Publisher International Atomic Energy Agency, 1965

Pages 79

Price $2.00

Reviewer David Pimentel

The book, *Advances in Insect Population Control,* is a summary of various aspects of field and laboratory experiments employing the sterile-male technique as reviewed by scientists from many countries at the International Atomic Energy Agency Conference held in Vienna in 1965. This report contains information of a general nature on the subject. Scientists interested in initiating research will not find details in techniques of sterilizing flies, nor methods of evaluating results.

Of special concern to scientists working in this program should be the section on "Integration of the Sterile-Insect-Release method with other means of Control."

Although the report includes a reference list of 52 papers presented at the Conference, the inclusion of a more extensive bibliography would have enhanced the usefulness of this report.

David Pimentel is Professor of Ecology and Head of the Department of Entomology and Limnology at Cornell University, a post he assumed in 1963. He is the coauthor of a book, Systems Analysis in Ecology (in press). His BS (1948) is from the University of Massachusetts, and his PhD (1951) is from Cornell.