state, including the relationship of slow-neutron experiments to those with x rays, the Raman effect and infrared spectroscopy. Crystal properties revealed by phonon and magnon interactions and experimentally determined dispersion relations are examined, but the scattering of neutrons by molecules, especially the significant advances made by H. L. McMurray, G. W. Griffing and others in recent years, deserves much more attention than this book provides.

Even though slow neutrons are of central importance for nuclear reactors the authors make no mention of this relationship. It is true that a separate treatise would be required to do this subject complete justice, but the present volume would be greatly enriched by some consideration of the extensive work on neutron cross sections and the relation of basic neutron physics to the properties of reactor moderators and fuels. Some discussion of neutron dynamics in chain reactors would have enlightened the whole treatment by indicating the relationship of neutron physics to related technology, for example, the mechanism employed in the TRIGA reactor. Up to a point the book gives an adequate and often detailed review of work in low-energy neutron physics.

However, no reference later than 1964 is mentioned and most of the references are to work done much earlier. It also emphasizes Russian research even more than is normally expected in books from that country. The coverage of low-energy neutron work in the US is by no means adequate with the exception of the work at Oak Ridge National Laboratory carried on for many years by E. O. Wollan and his associates. There is only scant mention of the work conducted at the Materials Testing Reactor in Idaho by R. M. Brugger and his coworkers and the most recent experiments carried on at the Brookhaven National Laboratory by R. E. Chrien and his associates.

The theoretical treatments are often not well correlated with the experimental results. A notable example is the Van Hove correlation functions that are formally discussed, yet no explicit example of their relationship to any experimental data is given.

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The "science of science"

PUBLIC KNOWLEDGE: AN ESSAY CONCERNING THE SOCIAL DIMENSION OF SCIENCE. By John M. Ziman. 154 pp. Cambridge U. Press, London, 1968. Cloth $3.95, paper $1.95

by DIANA CRANE

After many years as research scientist and teacher, John Ziman, a British physicist, has set down his ideas about the internal workings of science. He has been stimulated by recent publications on the "science of science," a relatively new field in which models are being developed to explain the growth of science and the social behavior of scientists.

Ziman's thesis is that the goal of science is not knowledge per se but public knowledge, a consensus about what has currently been discovered in any field. He argues that a number of the normative and competitive aspects of scientists' behavior, which have been stressed by sociologists, can only be understood in terms of this goal. This objective also explains other characteristics of the scientific community, such as the high standards of evaluation of scientific work, the refereeing of scientific manuscripts and the existence of review articles, all of which are designed to establish a consensus about scientific knowledge or to state it explicitly.

After a brief discussion of the nature of science and of scientific method, Ziman explores the theme of science as consensus in a number of contexts: the education of the young scientist, communication between colleagues and the scientist's organizational loyalties. His insights into the tensions that develop from the necessity to have certified knowledge and, at the same time, to develop new ideas are especially interesting.

He has chosen to write as an educated layman or amateur philosopher rather than as an expert in the science of science. Although specialists in that field will find interesting insights into the social organization of science, the book would have gained in value if he had elaborated the relationship between his ideas and previous work in the field. The general reader, seeking an introduction to an unfamiliar

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Diana Crane is an assistant professor of sociology at Johns Hopkins University. She is engaged in studies of scientific communication and "invisible colleges" of scientists.

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