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The Theory of Functions of a Real Variable and the Theory of Fourier's Series

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and the theoretical interpretation of experiments is stressed. The fourth chapter considers nuclear structure from the independent particle point of view. This topic is amplified for the light nuclei ($A \leqslant 25$) in the next lecture, where the measured magnetic moments of the ground states are employed to deduce information on the shell structure. The degree of detail in this chapter is somewhat out of keeping with the spirit of the other lectures, and some of the conclusions reached are oversimplified. The sixth lecture discusses nonspherical heavier nuclei in terms of the Bohr-Mottelson model. The seventh and eighth chapters bring out the description of nuclear reactions in terms of the statistical (compound nucleus) and optical models. The latter is illustrated for the elastic scattering of high-energy neutrons; the deuteron stripping reaction is also discussed qualitatively. The last two lectures are concerned with π mesons; their properties, including behavior under parity, charge conjugation, and time reversal, are given first. This is followed by an examination of their interactions with nucleons and of the (multiple) production mechanism.

In summary, this series of articles on diversified topics in nuclear physics is very stimulating, even 4 years after the original lectures were given. The translation from the Russian is clear and fluid, and except for minor errors, is well done.

Science and the Creative Spirit: Essays on Humanistic Aspects of Science. By Karl W. Deutsch, F. E. L. Priestley, Harcourt Brown, David Hawkins. Edited by H. Brown for the American Council of Learned Societies. 165 pp. U. of Toronto Press, Toronto, Canada, 1958. $4.50. *Reviewed by Lawrence H. Bennett, National Bureau of Standards.*

The authors of the four essays which comprise this book are scholars in the humanities who, meeting together under the auspices of the American Council of Learned Societies, have explored the subject of the interactions between the sciences and the humanities. The essays represent the individual views of the authors, but each essay was critically reviewed by the entire Committee on the Humanistic Aspects of Science, which consisted of the authors and six other scholars. The editor is careful to stress that this volume is to be considered only as a progress report, not as a completed study. Criticism of the book should be seen in the light of this self-imposed limitation.

In discussing the interactions between the sciences and the humanities, the authors realize the difficulty of attempting to consider science as constituting one unit and the humanities as another unit. In fact, there are several attempts made in this volume to define the range of activities of the sciences and the humanities. That their classification is open to debate is seen, for example, in the use of modern advertising writing as a branch of science. The justification here is that advertising writers use the science of information theory in their work.

The editor asks to be excused for making no distinction between basic science and technology; this reviewer believes some distinction must be made if the study of the interactions between the sciences and the humanities is to be meaningful. The editor does make the important point, however, that many scientists attempt to justify increased support for basic research in terms of the improved technology resulting.

Except for an excellent discussion by one of the authors on the creative aspects of science, the book implies that the use of creative imagination is the characteristic most clearly separating the activities of the humanist from the search for facts of the scientist. This lack of appreciation of the essential nature of ideas and imagination in basic science portrays the need for more emphasis to be placed on the creative aspects of science in popular and semi-popular scientific publications.

In spite of the foregoing objections, this book has made a contribution in presenting a fresh approach to a difficult subject.

The Theory of Functions of a Real Variable and the Theory of Fourier's Series. (Reprint of latest edition.) By E. W. Hobson. Vol. 1, 736 pp. Vol. 2, 780 pp. Dover Publications, Inc., New York, 1958. Paperbound $3.00 each. *Reviewed by George Weiss, University of Maryland.*

These volumes are the classic account of the theory of real variables as it was known in the first quarter of the twentieth century. Although these books do not contain the modern function theory which deals with abstract spaces, both the mathematician and the physicist will find many valuable discussions which are not contained in modern treatises. For example there is a chapter on the representation of functions as limits of integrals that contains much of interest with regard to representations of the delta function. The range of topics is quite wide, and includes point set theory, the theory of Lebesgue integration with several extensions such as Denjoy and Hellinger integration, the theory of series in general and Fourier series in particular. This set is well worth owning, particularly at the price quoted.

Our Nuclear Future: Facts, Dangers and Opportunities. By Edward Teller and Albert L. Latter. 184 pp. Criterion Books, New York, 1958. $3.50. *Reviewed by Freeman J. Dyson, Institute for Advanced Study.*

When a book has been serialized in *Life* magazine and boosted with the heavy weapons of Henry Luce's publicity machine, readers of *Physics Today* probably do not need to be told what it is about. In these circumstances, a reviewer is expected not so much to describe the book as to give vent to his personal opinions on the subject of bomb testing. Previous reviewers have expressed their opinions with varying degrees of heat and eloquence; I shall follow their example.