

ences are given to original or summary papers. The theoretical development of most of the topics treated is reasonably complete, and pains have been taken not to omit difficult transition steps in the analysis.

The plan of this book follows that which has become virtually standard in both verbal and written presentations of theoretical nuclear physics. Part I, consisting of two chapters, describes the approach to the subject matter and the character of the information concerning nuclear structure and forces that can be obtained from the general properties of nuclei. Part II consists of five chapters, and is a good, adequately detailed discussion of the two-nucleon problem in all of its ramifications. Part III includes the remaining four chapters, and deals with the structure, electromagnetic interactions, and nuclear reactions of heavier nuclei, with one chapter on beta decay. There are also five short appendices on special problems.

The book seems admirably suited to a short course in nuclear theory, preceded or accompanied, as the author suggests in the preface, by a second semester course in quantum mechanics. The modest size of the book (less than 400 pages) makes itself felt partly in the omission of several specialized topics such as fission and angular correlations, and partly in the relative lack of detail in Part III. While these qualities will detract somewhat from its value as a reference work, they should if anything enhance its value as a text book, where formidable size and price are often a disadvantage.

In addition to being clear, the treatment is authoritative throughout, as would be expected from an author who not only has a high scientific reputation but has also contributed much to the clarification of this field.

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**The Revolution in Physics.** By Louis de Broglie (translated by R. W. Niemeyer). 310 pp. The Noonday Press, New York, 1953. \$4.50.

The jacket of this book calls it "a survey of quanta for the layman", but it doesn't say what kind of "layman". The book can be recommended to graduate students in physics preparing for general oral doctor's examinations and to bright undergraduates specializing in physics; it can be suggested as stimulating fare for the serious reader who is already somewhat familiar with the vocabulary of physics and who is willing to work; but it is not for the general reader with little scientific background. It is not the equivalent of the popular books of Eddington or of Banesh Hoffman (*The Strange Story of the Quantum*) or of Gamow (whether this is a compliment or a criticism will be left to the reader).

But these comments are really only a criticism of the book's jacket. The book itself is a readable, usually lucid review of the fundamental developments which have taken place in physical theory in the last century. The first third of the book gives the background of classical physics, ending with relativity; the

middle third on the developments from Planck to Sommerfeld and the last third to a discussion of the "standard" or "classical" quantum mechanics. Much of the book was written more than ten years ago, but sections have been inserted on nuclear physics, second quantization and other recent developments. In the main it discusses, clearly and logically, those developments of the past fifty years which can now be considered to be "noncontroversial".

In company with Einstein and others, de Broglie is not too satisfied with the probabilistic interpretation of wave mechanics. He discusses some of the recent suggestions of Bohm, together with some earlier ideas of his own, in this connection, though it is rather doubtful whether a "layman" could make much out of the whole argument.

The book, in fact, illustrates the dilemma involved in making modern physics understandable to the non-physicist; either the wording is so vague that the real concepts are not got across or else so many specialized words and parenthetical definitions are thrown at the reader that he becomes confused before he gets to the concepts. This reviewer feels de Broglie's book errs somewhat in the latter direction, but it is a worthy and readable effort. More thought and hard work should be spent by more physicists on the job of persuading people that there is more to physics than making H-bombs.

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**An Introduction to Symbolic Logic** (Second Revised Edition). By Susanne K. Langer. 368 pp. Dover Publications, Inc., New York, 1953. Clothbound \$3.50, paperbound \$1.60.

The preface to this edition explains that the only changes from the first (1937) edition are a few corrections, some bibliographic additions, and an appendix on truth tables. The author believes that her book is still alone in its class; and in the following respect, at least, that is true. Mrs. Langer is eager to impart to her readers her enthusiasm for symbolic methods; to accomplish this, she at each stage tries to win the reader over with persuasive words before she starts operating with the symbols. If you are a layman unused to symbols, you may find this discursive treatment helpful. If you are a physicist, you will sometimes wish that the lecture would end and the demonstration begin.

For example: "Yet nothing we have stated is *abstract*; a house, no matter how little we say about it, or how generally we say it, is still something perfectly concrete". At this linguistic level, a debate can continue for some time before the participants find out that they are talking about different things: that such words as *abstract* have different connotations to different persons. I think it would be better to introduce the symbols first. In algebra and in physics, we do not try to develop each law in words and then translate it into symbols; we try to develop it in symbols and then, perhaps, interpret it in words. After a tentative symbolic