run, including the tasks to be accomplished before, during, and after the run.

Although most of the information presented is available elsewhere in the literature, the author has done an outstanding job of compiling and organizing the knowledge available into a single volume.

J. E. LINDSAY

Standard Oil Company of California,

Introductory Textbook

Principles of Physics. Earnest S. Greene. Prentice-Hall, Englewood Cliffs, N.J., 1962. xxiv + 608 pp. Illus. $9.75.

This book successfully achieves its goal—that of being a text for an introductory liberal arts physics course—by combining modern physics with what has been conventionally taught of classical physics in an introductory course. The first few chapters also show that Greene has a sympathetic understanding of the average student's problems in learning physics, for these chapters constitute his advice and instructions to the student on study habits and, in particular, on how to study physics. It is debatable whether this advisory material should be a part of the text. The student should have such advice, but I am inclined to think verbal advice is more effective.

Most of the paragraphs and topics are very well handled, but there are a few rather standard poorly-done sections. By standard I mean that in most other textbooks they are also inadequately treated. Two sections which could be improved are those that treat electric potential and relativistic motion. In the case of the electric potential, too much is said about the analogy with water pressure and too little about the different character of energy associated with electron flow.

I wish that, along with his excellent psychological advice about study, the author had gradually increased the mathematical level of his approach to physics. An approach to physics, or to any science, in which a minimal amount of mathematics is used is comparable to a study of Germanic literature by a student who cannot read the German language.

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Nuclear Industry

Advances in Nuclear Science and Technology. vol. 1. Ernest J. Henley and Herbert Kouts, Eds. Academic Press, New York, 1962. 366 pp. Illus. $12.

This is the first volume of a new annual series that promises to cover every aspect of the nuclear industry except pure mathematics, theoretical physics, and radiation biology and medicine. The articles are reviews of rather specific engineering systems (proposed and actual) or of broader fields of technology. In all cases the authors treat their subjects by invoking both specific and general principles, as the case permits, in order to achieve maximum usefulness and clarity for the reader. Volume 1 contains seven comprehensive articles that average 50 pages each.

In the first article, "Thermodynamic analysis of nuclear power stations," S. Baron reviews the thermodynamics of various steam cycles and the overall plant factors that govern the efficiency and economics of operation. Particular emphasis is given to the importance of steam separators and the efficiency of the high pressure saturated steam cycle relative to the superheated steam cycle.

The GBSR concept is discussed in considerable detail in the second article, "The GBSR, a graphite moderated boiling water steam superheat reactor," by L. S. Mims and D. J. Stoker, and its competitive position with respect to fossil fuel plants is outlined.

"Radiation-induced graft polymerization," by G. Odian and H. W. Chandler, provides a comprehensive account of both the basic kinetics and the copolymer properties that result from grafting one polymer onto another by the use of ionizing radiation. Included in the presentation is a table that displays yields on a wide variety of grafted polymers synthesized by the technique of mutual irradiation.

The fourth article, "Diffusion in uranium, its alloys and compounds," by S. J. Rothman, is a most scholarly presentation, replete with tables, graphs and an extensive bibliography. A considerable portion of the article is devoted to the diffusion of rare gases in both uranium and uranium oxide.

In "Performance characteristics of large boiling water reactors," G. M. Roy and E. S. Beckjord give a very good account of the basic reactor dynamics of such plants, and they specifically illustrate the properties of these systems in terms of the Dresden performance and test.

J. E. Ullmann's paper, "Economics of nuclear power," is qualitative and brief, but clear and to the point. The expectation that a real growth in nuclear power will begin by about 1965 is defended by a broad analysis of all the factors involved.

"Chemonuclear reactors and chemical processing," by M. Steinberg, is the most extensive of the papers. Numerous tables and graphs are given which are basic to the design of such as yet unrealized systems. The properties of specific chemonuclear processes, such as nitrogen fixation, carbondioxide cracking, and the production of ethylene glycol, phenol, and hydrazine are given.

In conclusion, I am happy to agree with the editors that these articles meet the requirements of being authoritative, complete, coherent, and critical, although in principle I am only able to testify to the last two properties (note the introduction to the book).

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Russian Geotectonics

Basic Problems in Geotectonics. V. V. Beloussov. Translated by Paul T. Broneer for the American Geological Institute. John G. Maxwell, Ed. McGraw-Hill, New York, 1962. xvi + 816 pp. Illus. $14.

Something old, something new,
Something borrowed, something Red.

This ambitious volume demands the attention of all geologists interested in the problems of earth structure. Its scope is rather overwhelming—too much for a single volume—and the results are brilliance in some areas, mediocrity in others. Throughout, it is a fascinating insight into the Russian geologic viewpoint and attitude. The author is the dean of Russian structural geologists, and in recent years his name has become familiar among earth scientists throughout the Western world.

This volume, essentially a translation and revision of a Russian edition published in 1954, is divided into eight parts. In the first 50 pages Beloussov deals with the methods and historical development of geotectonics, and he