tant contributions to all these topics are reflected in the papers cited in the various articles. Looking through the bibliography of Bethe's own publications one gets the impression of a gigantic but very delicate and perceptive tree-dozer moving through a forest of natural phenomena selecting the most interesting obstacles in its path and leveling them to the ground. Young physicists would be well advised not to look for choice problems overlooked by Bethe.

It is surely unfair, but perhaps useful, to single out a few of the papers in this volume. At the risk of offending some of my friends, I shall do so. In the opening paper, R. F. Bacher and V. F. Weisskopf review Bethe's career in a charming way, with many footnotes recounting personal anecdotes. Gregory Breit, another scientific contemporary, gives a thoughtful review of the nucleon-nucleon interaction, a subject close to Bethe's heart. Robert R. Wilson, now director of the National Accelerator Laboratory, recalls the development of accelerators at Cornell, revealing Bethe's not very widely known contributions to accelerator theory. Quantum electrodynamics is reviewed in two papers, the experimental aspects of atomic level shifts by Willis Lamb and the limits of current theory by Francis Low. Various aspects of astrophysics are discussed by William Fowler, R. E. Marshak, George Gamow, Edward Teller, E. E. Salpeter, and others. These contributions are particularly appropriate in view of Bethe's 1967 Nobel Prize award for his 1938 paper on the carbon cycle. There are several very interesting papers on solid state physics, one of Bethe's early interests.

A particularly fascinating paper, dramatically different from all the others, is that by Freeman J. Dyson. Dyson addresses the question of what might be accomplished by a truly advanced extraterrestrial technological society and what might be observed by us of projects carried out by that society. This is the one paper in the volume that Bethe probably could not have written himself.

Robert Marshak is to be commended for putting together this testimonial to the one whom Bacher and Weisskopf describe as "the great craftsman of our profession."

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Physics Taught Deductively

General Physics. Mechanics and Molecular Physics. L. D. LANDAU, A. I. AKHIEZER, and E. M. LIFSHITZ. Translated from the Russian edition (Moscow, 1965) by J. B. Sykes, A. D. Petford, and C. L. Petford. Pergamon, New York, 1967. x + 372 pp., illus. $8.

This is a book on a very elementary college level, and is not to be confused with the fabulous nine-volume Landau and Lifshitz *Course of Theoretical Physics*. The first hundred pages cover just enough classical mechanics to lay down the general principles and concepts used in the remainder of the book, which is devoted to elementary kinetic theory, thermodynamics, surface phenomena in liquids, viscosity, the theory of symmetry in crystals, and the kinetics of chemical reactions. In short, this is more of a physical chemistry text than the traditional physics course one might expect from the title *General Physics*.

The history of the book is rather unusual, since it was first written in 1937 but was not published until a few years ago. Rewritten and brought up to date by Akhiezer and Lifshitz, it retains some of the old-fashioned style and point of view of the '30's.

The presentation of the material is formal, cool, and graceful. The translators have maintained a high standard of English style not always found in technical books, and the translation is uniformly accurate. A considerable amount of authoritarianism is to be detected in the pedagogical approach of the book. Definitions are laid down, assumptions are made, Laws of Nature are invoked, and results are deduced. But nowhere is the student given a reason for believing in conservation of energy, except for the word of the authors that this is an important law of nature.

In at least one place, this deductive approach leads the authors into a type of logic that appears backward, to my way of thinking. Starting with the assumption that space is homogeneous (that is, that the properties of a closed system do not depend on its position in space), they show that the law of conservation of momentum follows. True enough *if* space is indeed homogeneous. But a psychologically more valid approach is to say that experimentally we observe momentum to be conserved and that this leads us to believe that space is homogeneous. In a similar vein, Le Chatelier's principle is invoked several times to predict the direction of a change of state, no motivation being given beyond a statement that it is a law of nature. This reliance on abstract principle is fine in an advanced course, but in an elementary course I would expect to spend more time building up from the concrete evidence to the abstract concepts.

However, the aim of the authors, as described in the preface, was simply to present the material in the most compact way, and in this they have succeeded very well. The chapter on symmetries in crystals is a small masterpiece, and the qualitative material on phase transitions is handled beautifully.

There is an index, but no problems, so this book may not be useful as a classroom text; but it can be highly recommended for supplementary reading or review purposes.

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The Special Theory

Précis of Special Relativity. O COSTA DE BEAUREGARD. Translated from the French edition by Banesh Hoffmann. Academic Press, New York, 1966. xvi + 123 pp., illus. $5.75.

The Logic of Special Relativity. S. J. PROKHOVNIK. Cambridge University Press, New York, 1967. xiv + 128 pp., illus. $5.95.

Special Relativity. A. SHADOWITZ. Saunders, Philadelphia, 1968. xiv + 203 pp., illus. $6.50. Studies in Physics and Chemistry, No. 6.

Each of these three books on special relativity has been designed with a different purpose in view. Together they complement one another ideally.

The first book under review, Olivier Costa de Beauregard's *Précis of Special Relativity*, is a translation of the author's *Précis de Relativité Restreinte*, published in 1963, which in turn is an extract from his treatise *La Théorie de la Relativité Restreinte*, originally published in 1949 in Paris. John A. Wheeler, in a preface to the English edition, points out its value: "I know of no book that is at the same time more precise, more accurate, and more succinct in presenting so complete a treatment of Special Relativity." As a rule, subsequent editions of basic treatises provide their authors with opportunities