Brief Mention

Mécanique générale. By J. Pérès. Paris, Masson, 1953. 8+408 pp. 2,545 fr.

This book is written as a text for an intermediate course in mechanics. Its purposes are on the one hand to develop "the qualities of order, precision, and initiative"; on the other, "to bring into evidence the insufficiency and the limitations of classical mechanics" arising from the fact that the principles themselves furnish only an underdetermined system and have to be supplemented by constitutive equations "whose origin is empirical, which are sometimes very crude, and which fail to recognize the complexity of real bodies and the interdependence of phenomena relegated to the different domains of our science."

Although there is much material on mass-point dynamics and some on continuum mechanics, the author's principal interest is in rigid bodies. He emphasizes general theorems, clearly stated and succinctly derived, often in generalized forms due to the French mathematicians of the last century. Applications of these theorems, usually interesting ones, are given in nearly every case. On the other hand, in keeping with the expressed purpose of the book, there is no attempt at a systematic exposition of the entire field. Elastic and inelastic impact, friction, stability, holonomic and non-holonomic constraints are discussed in detail with many worked out examples.

The book follows the French tradition of good writing and is typical of the better French textbooks; it reflects also the recent tendency to discuss the range of application of particular results to physical experience. Students of mechanics will profit from this thoughtful presentation by a connoisseur who gives evidence of detailed knowledge and sincere love for the subject.

C. Truesdell

Die Laplace-Transformation und ihre Anwendung. By P. Funk, H. Sagan, and F. Selig. Vienna, Deuticke, 1953. 8+106 pp. $2.40.

This little book is designed to help engineers and teachers of engineers. It is based on a series of lectures given by the first named author in the *Ausseninstitut der Technischen Hochschule* in Vienna and was prepared by the other two. The plan of the book is perhaps best described by a paragraph from the introduction (freely translated): "The present book seeks to provide a link between the purely mathematical and the purely technical literature of the field and as such has not the character of a systematic text book but rather of a short introduction. It is aimed primarily at engineers and physicists and caters to their particular needs."

The book begins with a rapid description of the properties of and the operational manipulations of the one-sided Laplace transform. There is a deliberate omission of details in order to meet the desire of the engineer to arrive *in medias res* as quickly as possible. Such tools as the Riemann-Lebesgue theorem are dismissed with a reference. On the other hand the authors give an exposition of the Fourier double integral (with a Lipschitz condition for local restriction), feeling that this tool is so near to the heart of the subject as to be indispensable. The applications include: differential systems involving electrical circuits, Abel's integral equation, heat conduction, Thomson's cable. No table of transforms is included since extensive tables are now easily available elsewhere. The book concludes with a brief historical appendix not intended to be systematic but rather to shed light on particular aspects of the theory.

The authors frequently use an illuminating intuitive approach that ought to be very valuable for the class of readers expected. In the present reviewer's opinion the book could have been more useful if a careful statement of results (even if unproved) had been added. For, must not the applied scientist know the range of validity of his results?

D. V. WIDDER

A course of geometry. By R. N. Sen. Calcutta University Press, 1953. 36+311 pp. 12 rupees.

The book has an outlook similar to Graustein's *Higher geometry.* The content in terms of chapters is as follows: An algebraic introduction called Basic algebra, then eleven chapters on plane geometry entitled: Vectors and angles; Cross ratio; Rigid motions; Conics; Transformations of symmetry and similarity; The circle (includes inversion); Affinity; Involution (of pencils of points or lines); Geometry in the extended Cartesian plane; Collineation and correlation; Geometry in the projective plane with an appendix on Trilinear and areal coordinates. The remaining eight chapters deal with space geometry and are entitled: The Euclidean space; Projective space (here we find for the first time an independent definition of projective space, as contrasted to an extension of the Euclidean space); groups of transformations and classification of geometries (deals with Klein's Erlanger Programm); Projective theory of quadrics; Polarity; Geometry in the extended Cartesian space; Orthogonal transformation and affinity; Quadrics in Euclidean space with an appendix on the Law of Inertia for quadratic forms.

The treatment is quite predominantly algebraic. The book is easy to read and very clear in the small; however, the non-initiated will