For convenience the references at the end of each chapter are listed only by short title. Full bibliographical description will be found in the bibliography at the end of the list

SUGGESTED REFERENCES, Chapter 1

K R. SYMON, *Mechanics.* An excellent and unusually detailed intermediate textbook on mechanics that can be used with much profit as a preliminary, and often as a supplement, to the present book. For the material in this chapter note especially the discussion on conservation theorems and variable mass systems (such as rockets) in Chapter 4, and the extensive consideration of constraints in Chapter 9.

W. HAUSER, *Introduction to the Principles of Mechanics.* Another intermediate text with many fresh and original viewpoints. Note especially the discussion of the Lagrange equations of motion, in the form of Eq. (l—53), as Newton's equations of motion in a curvilinear space of the generalized coordinates

C. W. KILMISTER and **J. E. REEVE,** *Rational Mechanics.* Mechanics at an intermediate level presented with great mathematical thoroughness and designed for students of mathematics. Particularly noteworthy is the extensive discussion of constraints and a simplified attempt at an axiomatic formulation of the basic concepts of mechanics.

C. LANCZOS, *The Variational Principles of Mechanics.* Of much wider content than the title implies, this book is in fact a survey of all mechanics with emphasis on the bases of the various formulations. Contains many insightful historical notes.

W. F. OSGOOD, *Mechanics.* Long since out-of-print, this book is still well worth hunting up. The first five chapters form an elementary introduction into the subject that is delightfully flavored by the author's long pedagogic experience. In this regard the reader's attention is directed especially to page 102!

E. MACH, *The Science of Mechanics.* A classic analysis and criticism of the fundamental concepts of classical mechanics. In its earlier editions this book did much to clear the way philosophically for relativity theory.

R. B. LINDSAY and **H. MARGENAU**, *Foundations of Physics.* Chapter 3 contains a clear discussion of the foundations of classical mechanics. This book, together with Mach's work, can serve as an excellent point of departure for further reading on the nature of the basic ideas involved in mechanics.

P.T. BRIDGMAN, "Significance of the Mach Principle," *American Journal of Physics* **29**, 32—36, Jan. 1961. This article discusses why and to what extent the frame of the "fixed" stars can be taken as operationally defining an inertial system.

C. TRUESDELL, *Essays in the History of Mechanics.* The style is highly personalized and forceful, brooking no gainsaying. But these essays are perfused by an intense historical sense and supported by deep scholarship. Of particular interest here is the chapter "Whence the law of the moment of momentum ?" which describes the historical development of the various conservation theorems for angular momentum. Much the same view, in more mathematical detail and with emphasis on continuous systems, is given in Section 196 of the next reference.

C. TRUESDELL and **R. A. TOUPIN**, *The Classical Field Theories,* a book 567 pages long that forms part of Vol. 3/1, *Encyclopedia of Physics.* Incidentally, the Bibliography P, p. 788f, of this latter work, provides a set of references (to 1957) on the formal axiomatic treatment of mechanics.

F. T. WHITTAKER, *Analytical Dynamics.* A well-known treatise that presents an exhaustive treatment of analytical mechanics from the older viewpoints. The development is marked, regrettably, by an apparent dislike of diagrams (of which there are only four in the entire book) and of vector notation, and by a fondness for the type of pedantic mechanics problems made famous by the Cambridge Tripos examinations. It remains, however, a practically unique source for the discussion of many specialized topics. For the present chapter reference should be made principally to Chapter II, especially Section 31, which discusses velocity-dependent potentials. Sections 92—94 of Chapter VIII are concerned with the

dissipation function.

LORD RAYLEIGH, *The Theory of Sound.* The dissipation function is introduced in Chapter IV, Vol. I of this classic treatise.