and the authors are to be congratulated for the excellent presentation.

Of more limited scope is the book *Management Organization and the Computer*, which is the proceedings of a seminar sponsored by the graduate school of business of the University of Chicago and by the McKinsey Foundation. This book is concerned with the changes a company has to undergo when a computer is introduced. It contains articles relating to what the editors call information technology as well as articles relating to the concepts and problems of organization. An additional series of articles involves the experience of five companies that have installed computers. Many of these papers are followed with discussions and comments made by the participants; these remarks help clarify the subject matter. The book is intended for the higher levels of management where major decisions are made; the decision to install a data-processing system in a company, with all the upheaval involved in such an act, is indeed a major decision. However, in view of the rapidly increasing flow of information throughout the business enterprise, the question is not whether to install a computer, but rather how to do it most efficiently. This book should help to find the answer.

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Henry Cavendish. His life and scientific work. A. J. Berry. Hutchinson, London, 1960. 208 pp. Illus. 35s.

When Cavendish died in 1810, Humphry Davy said of him: "His name will be an object of more veneration in future ages than at the present moment . . . it will remain illustrious in the annals of science. . ." In a biography of Cavendish published in 1851, George Wilson probed deeply into the "water controversy" between Priestley, Watt, Cavendish, and Lavoisier; Wilson's study of what these men meant by *inflammable air* and *phlogiston* is still indispensable to the specialist. Since then, Cavendish's many unpublished papers have become available in print. Now Berry gives us the first comprehensive survey of this work which extended to many different fields of science. This man of "morbid shyness and timidity" had "the remarkable gift of knowing almost intuitively what kinds of problems were worth investigation" (page 21). Berry considers him to be the founder of water analysis and points out that Cavendish had clear concepts of chemical proportions and equivalent weights. In a paper published in 1781, Cavendish spoke of the particles of his electric fluid, but he adhered to Newton's opinion of heat as the internal motion of the particles of bodies against Black's hypothesis of a matter of heat. In his electrical researches he was, as Maxwell said, "his own galvanometer." This master of the accurate experiment noticed that "1/120 of the bulk of the phlogisticated air" remained unreactive. More than a century later this observation led to the discovery of the inert gases. Berry's account here conflicts with that of Ramsay himself.

The historians of science will be grateful to Berry for his well-balanced and thorough study. Those interested in "the" scientific method will find here much to capture their attention, particularly in Cavendish's approach to the problem of the "Electric Ray or Torpedo." Berry has painted a fascinating picture of a living embodiment of that abstraction, the pure scientist.

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Progress in Solid Mechanics. vol. 1. I. N. Sneddon and R. Hill, Eds. North-Holland, Amsterdam; Interscience, New York, 1960. xii + 448 pp. $15.50.

The aims and scope of this book are best described by quoting from its preface: "At the present time the mechanics of solids is perhaps the most rapidly expanding branch of applied mathematics. . . . It is becoming more and more desirable for engineers and physicists as well as applied mathematicians to study solid mechanics as a whole, and yet increasingly difficult for them to do so since important papers may appear in journals of widely differing character. This impasse may be met only by review articles of the highest standard which from time to time summarize and unify the most recent work in a particular field or group of fields. The present volume is the first in a series directed toward that end. The papers it contains are mainly concerned with reviewing recent theoretical studies in solid mechanics, but it is hoped that future volumes will contain surveys of recent experimental investigations. . . . The main emphasis [of this series] will be on basic principles and mathematical techniques of continuum mechanics, in all its aspects, together with experimental work of a fundamental kind."

The British editors are well qualified for this task, and it may be said that this first volume is highly successful in meeting the purpose set forth in the preface. Five of the contributors are British, and there is one each from Germany, Holland, and Japan. Five of the chapters cover subjects of rather broad general interest, while the other three discussions present results of more limited scope, yet of considerable interest.

The chapter on viscoelastic waves, by S. C. Hunter, is an interesting and logically developed account of the recent work on wave propagation in viscoelastic (or anelastic) materials. Both the Fourier and Laplace transform approaches are covered, with both their equivalence and the cases in which one or the other approach has practical advantages clearly pointed out. The various formulations of the constitutive equations applicable to linear materials showing viscoelastic or anelastic behavior are derived in a fashion suitable for the purposes of this chapter, although neither this section nor the discussion of the experimental results for polymers is, or was intended to be, complete.

The material on matrices of transmission in beam problems, by K. Marguerre, presents a formulation of the dynamics of framed structures with members of variable section not necessarily straight. Torsion can also be included. This paper should be of value to engineers and computers interested in numerical analysis.

H. G. Hopkins discusses the dynamic expansion of spherical cavities in metals produced by explosive loading. Although it is necessary to introduce drastic simplifications—such as neglect of the outgoing shock wave in the metal and the oscillatory character of the gas pressure in the early stages—in order to obtain a manageable problem, nevertheless it is possible to reach conclusions of both practical and theoretical interest.

W. T. Koiter presents a concise but quite complete survey of the general theorems of the mathematical theory of plasticity for isotropic bodies. Existence and uniqueness theorems are discussed, together with minimum principles and the bounds associated with limit analysis, including plastic collapse and shake-