readily comprehensible to the mathematically informed reader. This problem arises in part from the narrative and notational difficulties of explaining outmoded mathematics in modern language. A related problem, one connected to the authors' historical methodology, is their practice of examining a given mechanical argument in isolation from the wider text in which it appears. These difficulties are apparent in the opening chapter where Cannon and Dostrovsky discuss Newton's analysis of the pressure wave in Propositions XLVII–XLIX of Book Two of the *Principia*. These propositions contain Newton's celebrated calculation of the speed of sound, an estimate that was for lack of an adiabatic correction 20% below the true value. The authors' discussion is marred by an inadequate description of two of the original propositions, a failing which makes their account very difficult to follow. This is especially unfortunate since their conclusion, that Newton had at this early date grasped clearly the concept of mechanical strain, is new and ultimately convincing.

The evolution of dynamics: vibration theory from 1687 *to* 1742 is a substantial addition to the survey of early 18th century mechanics provided three decades ago by Clifford Truesdell in his extensive introductions to the collected works of Leonhard Euler. Despite its occasional narrative weaknesses the book is destined to become a standard source. It will be of assistance to the specialist in the history of the exact sciences who wishes to contribute to our understanding of the still largely unexplored world of 18th century mathematics. In addition, the nonspecialist with some background in vibration theory will be rewarded by a close study of its contents. Cannon and Dostrovsky state in the preface that mathematics "provides a powerful tool with which to grasp modes of thought from former times". To this one might add that the converse is also true: knowledge of earlier modes of thought provided by historical investigation serves to heighten our appreciation for the mathematics of today.

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The method of iterated tangents with applications in local Riemannian geometry, by Enrico J. White, Monographs and Studies in Mathematics, vol. 13, Pitman Publishing Incorporated, Marshfield, Mass., 1982, xx + 252 pp., $39.95. ISBN 0-2730-8515-8

The objects studied in differential geometry can alternatively be defined by using or by avoiding local coordinates. There are even definitions which can be thought of as both using and avoiding coordinates. Consider, for example, a first order partial differential operator

$$D = \sum_{i=1}^{n} a_i(x) \frac{\partial}{\partial x_i}$$