E—that they contain 344 numbered equations, of which almost none subsequently reappear. (As a minor matter, equations in Chapter 6 contain a ϕ unrelated to the ϕ of Chapters 1 and 2.)

The increasing complexity of science is of course making it more nearly impossible for one man to *prepare* a book even in a relatively narrow field such as this. But if some way is not found for one man to do the actual *writing*—for having the ideas and the material sorted out and expressed by a single mind—how soon shall we find that no one reader is likely to understand what is written?

Shock Waves in Chemistry and Physics. By John N. Bradley. 370 pp. (Methuen, London) John Wiley, New York, 1962. $11.00. *R. Bruce Lindsay, Brown University.*

CONTEMPORARY interest in the motion of objects through the air at speeds greater than that of sound has attracted popular attention to the association therewith of the so-called shock wave or shock front. Everyone is familiar with the "sonic boom" and realizes it is a peculiar kind of sound wave. Actually, there is nothing very new about the idea of a shock wave. It was realized a hundred years ago that in a high-amplitude, nonlinear sound disturbance, the wave front can gradually become steeper, so that there ultimately forms what amounts to a discontinuity in the medium with very large differences in pressure, density, and temperature on the two sides.

In fairly recent times, the ability to produce artificial shocks under more or less controlled conditions in so-called shock tubes has stimulated interest in their application to a variety of problems in chemistry and physics. It is the purpose of the book under review to provide a thorough survey of this recent work, mainly concentrated in the last twenty years. The purpose has been amply fulfilled.

The author begins with a brief introduction, in which the fundamental physics of the shock front is simply explained. He then devotes a chapter to elementary shock-wave theory, in which the fundamental equations of acoustic wave propagation are derived. The basic shock equations, including the important Rankine-Hugoniot relations, are obtained using the method of Courant and Friedrichs. The behavior of the simple shock tube is described. The following chapter treats applied shock-wave theory in some detail, including reflections and interactions of shocks. There is a long chapter (60 pages) on experimental techniques. The final seven chapters are devoted to chemical and physical applications of shock waves, including measurement of thermodynamic quantities, relaxation times, ionization phenomena, emission of light radiation, and chemical reactions.

The book is well written; the analysis is handled effectively; and there is an excellent bibliography. The book will prove a very useful monograph for all chemists and physicists who work in the shock-wave field.