

BOOK REVIEW

CLARKE (J F) AND McCHESNEY (M): Dynamics of Relaxing Gases
2nd Ed., Pp. 576, Butterworths, London, 1976, Price £ 25.00.

The first edition of this book appeared in 1964 under the title "The Dynamics of Real Gases" and was reviewed in the Aeronautical Journal of the Royal Society (August 1974).

In the second edition, the material of the first has been revised and reorganized considerably making the book much more readable. The discontinuities in the first edition arising apparently out of the joint authorship are no longer obvious. The new edition assumes an elementary knowledge of quantum mechanics, statistical mechanics and thermodynamics. This is a welcome change because of two reasons. Firstly it gives the authors more space to cover collision processes and vibrational relaxation phenomena in far greater detail while still keeping the size of the book within reasonable bounds. Secondly the book is written for the research worker and the advanced student for whom the sketchy introductory material of the first edition on these above-mentioned subjects is really not necessary.

Some of the criticism raised by the reviewer of the first edition is still applicable to the new edition. Thus no treatment of rarefied gas dynamics is included, boundary layers have been almost completely omitted, more convincing arguments can be presented for the use of the relationship $Tds = de + PdV$ in non (quasi) equilibrium situations and chapter 1 may be more correctly described as quasi equilibrium theory.

Nevertheless, the book is a valuable contribution to the literature. The lists of references at the end of each chapter are comprehensive and will be especially useful to research workers and advanced students. The second edition would be a valuable addition to their libraries even if they already have the first.

G. NARASIMHAN.

Professor of Chemical Engineering,
Indian Institute of Science,
Bangalore 560 012 (India).