Vol. 3 Iss. 6
The Chemical Educator

ISSN 1430-4171
http://journals.springer-ny.com/chedr
S 1430-4171(98)06263-5

Book Review

Modern Liquid Phase Kinetics by B. G. Cox

Reviewed by
Daniel J. Berger
Science Department, Bluffton College, 280 West College Avenue, Bluffton, OH 45817-1196
bergerd@bluffton.edu

Modern Liquid Phase Kinetics, by B. G. Cox. Oxford University Press, 1994. 92 pages, index. Cloth, $31.95. ISBN 0-19-855745-0. Softcover, $12.95, £5.99. ISBN 0-19-855744-2.

The Oxford Chemistry Primers (USA) (UK) are designed as supplemental texts for undergraduate chemistry education. Coverage is limited to one topic and must be concise because each primer is limited to 99 pages. An especially nice touch in these days of ridiculous textbook prices is the sponsorship of Zeneca, Ltd, which until recently held the price of a softcover copy down to $9.95 and currently keeps it at $12.95. The biggest drawback of the books in this series is the paucity of problems for the student, though those provided are usually quite good.

Modern Liquid Phase Kinetics is a concise treatment of empirical chemical kinetics. The primary thrust of the text is the process of obtaining reaction rates and mechanisms from experiment. It spends no time at all on theoretical treatments of reaction processes, and only a short time on transition state theory.

Six chapters present the material, which ranges from introductory to advanced. They cover how to handle rate laws as differential equations, determining mechanisms from observed rate laws, how to analyze flow systems and systems with more than one reaction, solvent effects, two-phase reactions, and modern methods of fast experimental kinetics. Discussions and derivations are generally easy to follow, though it doesn't hurt to walk one's students through the "obvious" parts oneself!

While *Modern Liquid Phase Kinetics* is intended as a supplement, it presents a thorough treatment of empirical kinetics in a wide variety of experimental situations. I have used its first three chapters as a supplemental text in a physical organic chemistry course, and see little reason, other than the need for the instructor to invent further problems, that it could not be used as the primary text in an undergraduate kinetics course. It would be especially valuable if used in conjunction with one of the other chemistry primers in this area, such as Scott's *Oscillations, Waves and Chaos in Chemical Kinetics* or Metcalfe's *Chemical Reaction Engineering: A First Course*.
