

Book reviews

Proton Transfer Reactions; edited by E.F. Caldin and V. Gold, Chapman and Hall, London, 1975, viii + 448 pages, £18.00.

This excellent book is a compilation of contributions by co-workers and friends of R.P. Bell, and is dedicated to him on his retirement from his Chair at the University of Stirling. It is intended as a companion to Professor Bell's famous monograph "The Proton in Chemistry."

The chapters are as follows: Proton acids, Lewis acids, hard acids, soft acids, and super-acids (R.J. Gillespie, 29 pages); Gas-phase proton-transfer equilibria (R.W. Taft, 47 pages); Proton-transfer and the solvation of ammonium ions (E.M. Arnett, 23 pages); Participation of hydroxylic solvent molecules (E. Grunwald, D. Eustace, 18 pages); Hydrogen bonding and proton-transfer reactions in non-aqueous solvents (B.H. Robinson, 32 pages); Fast and slow proton-transfer reactions in solution (J.E. Crooks, 25 pages); The Brønsted relation; significance of the exponent (A.J. Kresge, 21 pages); Substrate isotope effects (R.A. More O'Ferrall, 61 pages); Solvent isotope effects (W.J. Albery, 53 pages); Tunnelling in hydrogen transfer reactions (E.S. Lewis, 22 pages); Neighbouring group participation (B. Capon, 46 pages); Proton-transfer in enzymatic catalysis (M.L. Bender, F.J. Kézdy, 23 pages); Heterogeneous proton-transfer reactions (V. Gold, C.J. Liddiard, G.D. Morgan, 24 pages).

This is a first class work in every way. Not only are the individual chapters of high quality (and one, by E.S. Lewis, a gem), but they complement each other admirably, and with little unnecessary overlap. Much credit for this must go to the editors, who can be readily forgiven for overlooking the few minor typographical errors, such as "unit" in place of "unity" in several places, and even the somewhat more confusing printing of "*p*-nitrobenzoyl cyanide" instead of "*p*-nitrobenzyl cyanide" on p. 165, and the seeming omission of some words on page 126. I find the chapters by Taft, Kresge, More O'Ferrall, Albery, and Lewis especially enjoyable and informative, but readers with different interests will no doubt find other contributions equally impressive. Perhaps the best compliment which can be paid to the book is that it is a worthy tribute to R.P. Bell, whose brilliance is reflected from its pages.

*School of Molecular Sciences,
University of Sussex,
Brighton BN1 9QJ (Great Britain)*

COLIN EABORN