

Book Reviews

A Guide for the Perplexed Organic Experimentalist

H.J.E. Loewenthal, 2nd edition, Wiley, Chichester, 1992, x + 239 pages. £14.95. ISBN 0-471-91712-5

I warmly welcomed the first edition of this excellent little book and am equally enthusiastic about this latest reprint, with additions (April 1992), of the second edition that came out in 1989. It should be readily available to *all* practising organic and organometallic chemists, for although it is aimed primarily at the beginner it has much to offer to those with considerable experience.

Nine of the eleven chapters are concerned with guidance on laboratory practice, but the first two deal with searching of the literature, the second of them (by E. Zass) with the use of the computer for this purpose. There is a sensible subject index, something rather unusual these days.

My very limited informal surveys indicate that this book is not nearly as well known as it should be. Those who carry out research on, or involving the use of, organic compounds place themselves at a disadvantage if they fail to read it and keep it at hand.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QN
UK*

Advances in Physical Organic Chemistry, Vol. 27

D. Bethell (ed.), Academic Press, London, 1992, viii + 312 pages. £45.00, US \$90.00. ISBN 0-12-033527-1

The volumes in this highly regarded series are regularly reviewed in this journal because much of the content is directly or indirectly of relevance to organometallic chemistry. The present volume is unusual in containing no significant mention of organometallic species, but the principles discussed in all the chapters can be applied with profit to the mechanisms of many types of organometallic reactions.

The chapters are: Effective charge and transition-state structure in solution (by A. Williams); Cross-interaction constants and transition-state structure in solution (I.K. Lee); The principle of non-perfect synchronization (by C.F. Bernasconi); Solvent-induced changes in the selectivity of solvolysis in aqueous alcohols and related mixtures (R. Ta-Sharma and Z. Rapoport). All the chapters are good, but that on the principle of non-perfect synchronization is perhaps the one that will be of most interest to organometallic chemists interested in mechanisms. The principle is expressed in the chapter as: "A product-stabilizing factor (*e.g.* resonance) that develops late along the reaction coordinate always lowers the intrinsic rate constant, whereas a product-stabilizing factor that develops early increases it." (The corollary is: "A reactant-stabilizing factor that is lost early always lowers the intrinsic rate constant, while a reactant-stabilizing factor that is lost late always increases it.")

The volumes are very well produced, and excellent value.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*

Directory of Graduate Research 1991

American Chemical Society, Washington, xxiii + 1586 pages. US \$73.00. ISBN 0-8412-2104-9

This series of directories is too well known to need detailed description. It contains a wealth of information on the research activities of members of faculty in departments of chemistry, chemical engineering, biochemistry, medicinal/pharmaceutical chemistry, clinical chemistry, and polymer science in universities in the United States and Canada. It is invaluable to anyone needing the address and telephone or FAX number of a relevant department or seeking details of the research carried out by individuals or in the department overall. In reviews of previous volumes I tried to

judge from them which American chemists published most prolifically, and had decided that F.A. Cotton was in the lead with A. Katritzky a runner-up. A recent survey by the Institute of Scientific Information early in 1992 of papers published in the ten-year period 1981-90 confirmed that my assessment was correct, revealing that F.A. Cotton had 451 publications in that period and A. Katritzky 403, but neither came near Y.T. Struchkov or M.G. Voronkov, in Russia, with 948 and 711, respectively. (No other American chemist appeared among the top twenty of the most prolific authors in science.)

The volume also carries interesting statistical information on numbers of faculty members, postdoctoral workers, and graduate students and numbers of Ph.D. degrees granted.

The excellence of this publication prompts me to say how disappointing is the fact that there has not been a further edition of the comparable directory for countries outside the USA and Canada that appeared in 1988. That volume (*Chemical Research Faculties*) had some defects, but they could be corrected fairly easily in a new edition, and it is to be hoped that the American Chemical Society has not abandoned the enterprise.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*

Organometallics: A Concise Introduction

by Ch. Elschenbroich and A. Salzer, 2nd edition, VCH, Weinheim, 1992, xiii + 495 pages. DM138.00, £52.00 (hard cover); DM58.00, £21.50 (soft cover). ISBN 3-527-28164-9

The first edition (1989) of this admirable textbook was, rightly, highly praised by reviewers and met with deserved success. In this second edition some errors have been corrected, some old examples replaced by newer ones, and some important new findings included. The book can thus be recommended even more strongly for use by all students of organometallic chemistry.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*