

Book reviews

Organic Chemistry: The Name Game, by A. Nickon and E.F. Silversmith. Pergamon Press. New York, Oxford, etc., 1987, xi + 347 pages. Hard-cover £45.00, US\$75.00; flexicover £18.00, US\$29.50. ISBN 0-08-034481X (HC) and 0-08-0351573 (FC).

This book presents a light-hearted but well researched account of the origins of non-systematic names for organic (including organometallic) compounds and for reactions, mechanisms, and concepts in organic chemistry; for example, of the terms, *barrelene*, *congressane*, *housane*, *sandwich compound*, *anchimeric assistance*, *conducted tour mechanism*, *isodesmic reactions*, *anomeric effect*, and *Z-values*. (The name I find most amusing is *felicene*, for a molecule that can be made to look like a cat, though *calfene*, denoting an incomplete *bulvallene*, runs it close. I suspect, however, that many older readers would have preferred the name *felixene*, in recognition of the cartoon cat who gave them pleasure in their early years.)

It is impossible in a brief review to do justice to this book, since several pages, with many diagrams, would be needed to convey its flavour. It must be emphasised, however, that the account is not only very amusing, and a pleasure to read, but also contains a good deal of serious chemistry. As Professor A. McKillop states in his Foreword, 'It is also a serious study of the development of many important aspects of organic chemistry during the last 50 years or so, in many ways a portrait of the evolution of twentieth century organic chemistry and the researches of the scientists who created it.'

The book can be read with pleasure and profit by all those interested in chemistry (and not just organic chemistry), from undergraduates to Nobel Laureates. Teachers at university level will find it invaluable as a source of material to enliven their lectures, and may regret that it was not published solely as an Instructors' Edition, so that they could dazzle their students with their erudition and wit.

In a book as wide-ranging and so full of detail, it is inevitable that there will be some slight inaccuracies. For example, the authors, perhaps misled by the chemists who first used the term, associate the term *homoleptic* with the Greek *leptos*, the smallest unit of coinage in ancient Greece, which makes little sense. To my mind the ending *leptic* is here used in the way that it usually is in English, as derived from the Greek *lambanein*, meaning to seize, grasp, etc. (compare epileptic, referring to a type of seizure), and refers to the seizing of the ligand by the metal (or vice versa). I suspect that this is what was in the minds of those who originally proposed the term *isoleptic*, which they defined as describing a complex in which all the ligands attached to the central atom are identical in constitution; the change to *homoleptic* made by other authors was undoubtedly an improvement, but their apparent assumption that the term was derived from *leptos* was unwise.

I noticed only one major error, but that a most serious one! On page 224 it is stated that I proposed the term *trisyl* to denote the tris(trimethylsilyl)methyl group

in 1980, two years after it had been used by others for a different group, and hint that my term should have been *trisyl Jr!* In fact I also first used the term in 1978 (*J. Organomet. Chem.*, 157 (1978) C50), and so the two coinages should be regarded as non-identical twins rather than father and son. I cannot imagine, however, that many readers will be troubled by this lapse on the part of the authors.

The book is well produced and has a good subject index. It would benefit from the addition of an index to the names of people mentioned, since there are so many interesting snippets of information and anecdotes about well-known chemists.

This delightful book deserves to be a best-seller, and it stands a good chance of becoming so. The price of the flexicover version makes it a real bargain, and everyone interested in organic or organometallic chemistry should have a copy.

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

Colin Eaborn

Spectroscopic Methods In Organic Chemistry, by D.H. Williams and I. Fleming. Fourth edition. McGraw-Hill Book Company (UK) Ltd., London, 1987. xii + 246 pages. DM £30.30. ISBN 0-07-084166-7.

A new edition of this highly-regarded and widely-used textbook will be much welcomed. Since the first edition appeared in 1966 the book has been of considerable value to undergraduate and postgraduate students as an introduction and laboratory guide, and also, because of its well organized tables of reference data, to experienced research workers. The earlier editions are still very useful, and indeed, the amount of additional material in this latest edition is fairly small, but the changes make the book even more effective, especially for teaching purposes.

The five chapters have the same titles as before; viz. Ultraviolet and visible spectra; Infrared spectra; Nuclear magnetic resonance spectra; Mass spectra; and Structure elucidation by joint application of UV, IR, NMR, and mass spectroscopy. Only small additions have been made to three of the chapters, but those on NMR and mass spectra have been completely rewritten. In the NMR chapter the discussion of ^{13}C and ^1H spectra has been enlarged, integrated, and presented in a form that makes things clearer for students, and small sections on new methods (such as difference spectra, COSY and NOESY) have been introduced; in addition, the tables of data have been substantially enlarged to make them of even more value in the research laboratory. The chapter on mass spectrometry has been lengthened to allow appropriate coverage of newer techniques (CI, FD, plasma desorption, and FAB), and also of the ways in which larger polar molecules can be dealt with, by particle ionization or HPLC/MS, and, probably more importantly for students, the nature of mass spectrometry is made clearer by a new approach. The new sections, like the old, are models of clarity allied with conciseness.

This new edition can be recommended without qualification, and represents excellent value for money. I should hate to be without my copy.

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

Colin Eaborn