

## Book review

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*Comprehensive Carbanion Chemistry. Part A. Structure and Reactivity*; ed. by E. Buncl and T. Durst, Elsevier Scientific Publishing Co., Amsterdam/Oxford/-New York, 1980; viii + 400 pages, US\$ 83.00; Dfl. 170.00.

This book is of considerable interest to organometallic chemists, and perhaps more so than its title might seem to indicate. In the first place, of the seven chapters all but one (that concerned with gas phase acidities) are actually about properties not of carbanions but of alkali metal and other salts of such ions. Furthermore, many readers will be interested in the carbanions as sources of ligands to be attached to other metals, and the chapter by R.B. Bates (53 pages, 246 references) on 'Dianions and polyanions' incidentally provides a first-class guide to the available carbanions which might be used to form cyclic derivatives of both transition and non-transition metals. Then again, at a slightly less direct level of interest, the ease of cleavage of M—R  $\sigma$ -bonds under certain conditions can be related to the ease of formation of the carbanions R<sup>-</sup>, and so to the solution acidities of the carbon acids RH, and a most valuable survey of such acidities is given in the chapter (59 pages, 118 references) by A. Streitwieser, Jr., E. Juaristi, and L.L. Nebenzahl. This survey provides an authoritative up-to-date summary of information on equilibrium acidities, and fills an annoying gap; it presents a brief account of methods and results, and lists the currently accepted  $pK_a$  values for a large range of carbon acids, very helpfully showing the values for dimethyl sulphoxide alongside those for cyclohexylamine solutions. This chapter alone will save readers much literature searching, and it will be much cited in the coming years.

The chapter (42 pages, 106 references) by M.J. Pellerite and J.I. Brauman on 'Gas phase acidities of carbon acids' is a model of its kind; it is up-to-date, it includes a list of all the relevant available data, and describes methods, results, and interpretations with admirable clarity. The other chapters also appear to be of high quality. They are Spectrophotometric investigations of arylmethyl carbanions, by E. Buncl and B. Menon (28 pages, 53 references); Vibrational infrared and Raman spectroscopy of carbanions, by J. Corset (71 pages, 265 references); The nuclear magnetic resonance of carbanions, by D.H. O'Brien (52 pages, 226 references); and Electron-transfer reactions of carbanions and related species by R.D. Guthrie (73 pages, 316 references). This last chapter includes, of course, an account of the reactions of ketones with Grignard and other organometallic reagents and also discusses the stereochemistry of reactions between organo-lithium, -sodium and -magnesium reagents and organic halides.

Unlike a good proportion of multi-author volumes, this one is greatly to be welcomed, and the editors must be congratulated. It deserves a place in the libraries of all laboratories concerned with organic, physical-organic, or organometallic chemistry, and is such a valuable reference book that many chemists

will wish to have their own copies even at the high price which now seems to be inevitable for such publications. If the same standard is preserved in subsequent volumes the series will be of much service to chemistry.

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