

*Journal of Organometallic Chemistry*, 408 (1991) C22–C23  
Elsevier Sequoia S.A., Lausanne

## Book reviews

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*Gmelin Handbook of Inorganic Chemistry, 8th Edition, Organotitanium Compounds, Part 5*, Springer Verlag, Berlin, 1990, 418 + xiii pages, DM 1885. ISBN 3-540-93592-4.

This volume continues the coverage of organotitanium compounds and describes the literature which appeared before the end of 1987 on di- and poly-nuclear titanium compounds. In such a heterogeneous collection of compounds, systematisation is a problem, but the Gmelin system of classifying ligands according to their denticity provides a very reasonable basis. By far the greatest number contain <sup>5</sup>L ligands, such as cyclopentadienyl. Many of the compounds discussed are of unproven nuclearity, and the authors have compromised here by assuming that they are dinuclear. This is not altogether satisfactory, but is a reasonable compromise.

The book finishes with an empirical formula index and a ligand formula index, which are both designed to facilitate the search for compounds. Some of these pages are double printed in my copy, which is the first time I have detected a departure from the usual impeccable production standards in *Gmelin*. However, this is a trivial criticism. This is an excellent production and will prove invaluable to anyone working in the area.

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*Directory of Graduate Research 1989*, American Chemical Society, Washington, DC, 1989, xxiii + 1465 pages, US \$55.00 (U.S.A. and Canada) or US \$66.00 (elsewhere).

This new edition of this excellent Directory is greatly to be welcomed. It consists mainly of lists of members of faculty in departments of chemistry, biochemistry, chemical engineering, medicinal/pharmaceutical chemistry, clinical chemistry, and polymer science in the USA and Canada. This edition gives information on 683 academic departments, 11,938 faculty members, and 68,276 publications. For each faculty member are given the year of birth, the highest degree obtained, the main teaching field, and a list of publications that appeared in 1987–1988. For each department are given the postal address, the name of the chairman, the telephone number, and, where available, the FAX number; the last is a most valuable addition. There is an index of names of members of faculty.

The Directory is by far the best source of information on the research interests and research output of individuals and of departments as a whole in North American universities. One can amuse oneself by trying to find out which individuals and which departments publish most prolifically. In the case of individuals the person with the largest number of publications in 1987–1988 that I could find was F.A. Cotton with 131, followed by A.R. Katritzky with 90 (though I could have overlooked others with higher numbers).

There are also some pages of interesting statistical data giving the numbers (in September 1988) of permanent members of faculty, temporary members of faculty, postdoctoral assistants, first year postgraduate students, all postgraduate students, M.S. degrees granted in 1986–1987, and Ph.D. degrees granted in 1986–1987. One can make one's own statistical analyses of these data; for example the ratios of postdoctoral assistants to permanent members of faculty in some leading chemistry departments turn out to be as follows: Harvard, 4.6; Stanford, 3.6; M.I.T. 3.2; Pennsylvania State, 3.1; California Institute of Technology, 3.0; Northwestern, 2.7; Texas at Austin, 2.6. (The largest number of postdoctoral assistants is the 104 at Texas at Austin, followed by 100 at M.I.T. and 97 at Texas A. and M.) Among such departments the highest ratios of Ph.D.s granted in 1986–1988 to the number of members of faculty were: California Institute of Technology, 3.04; M.I.T., 2.8; Stanford, 2.8; California at Berkeley, 2.3; Northwestern 1.9.

This volume represents superb value and is very strongly recommended; a copy should be readily available to every university teacher or student of chemistry. We can hope that someday the companion publication dealing with universities throughout the rest of the world, entitled *Chemical Research Faculties: An International Directory* (the current edition appeared in 1988) will ultimately be brought up to the same level of comprehensiveness and accuracy.

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