

rewarding, and so much better written, is the chapter on the actinides (J.G. Reavis, 67 pages, 186 refs.). This article says more in seven pages on glove-boxes than Bartak's whole review! Topics covered in this excellent review include availability of actinides, health and safety procedures, glove-box methods, materials problems, microtechniques, techniques for purification of multigram quantities of actinides and their salts, metal preparation and purification, measurements of physical properties, electronic absorption spectra, and electrochemistry. The chemistry centres on metal halides, but other systems are also discussed.

Thus, overall, this is a very useful volume, and extremely good value for money (< £0.10 per page). It is type-set, well produced, and well illustrated with line diagrams (the quality of the photographs is less impressive). The really excellent chapters by Biggin, Reavis, and Minh and Redey are worth the cover price alone, and so I would recommend this book to all chemistry libraries and private purchasers, despite its flaws. It is to be hoped that the editors will commission another article on dry boxes, and publish it in a future volume.

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Advances in Molten Salt Chemistry, Vol. 6; edited by G. Mamantov, C.B. Mamantov and J. Braunstein, Elsevier, Amsterdam, Oxford, New York and Tokyo, 1987, xii + 350 pages, \$114.50, Dfl. 295.00. ISBN 0-444-42822-4.

As noted in the previous review, although molten salt chemistry appears at first glance to be a highly specialized area, it contains a good deal to interest the coordination and organometallic chemist, if they take the trouble to look. Of course, they will find that much is as they expected, but it is the unexpected that will reap the rewards. The volume under review illustrates this point well. It is an edited compilation of four disparate reviews, and as for any such volume, any reader will only find one or two of direct interest. Thus, the organometallic chemist will find little to excite in the articles entitled "Aluminium Electrolysis — Electrolyte and Electrochemistry" (J. Thonstad, 54 pages, 162 refs.) and "The Chemistry and Electrochemistry of Magnesium Production" (G.J. Kipouros and D.R. Sadoway, 83 pages, 137 refs.), and even less in Klemm's tour de force on ionic mobilities (72 pages, 173 refs.). Indeed these articles, each excellent in its own right, will only serve to reinforce the common view of molten salt chemistry as an area reserved for the industrialist and the electrochemist, and of no possible interest to the synthetic chemist.

It is the final and longest review in this volume, "Organic and Organometallic Reactions in Molten Salts and Related Melts" (R.M. Pagni, 136 pages, 200 refs.) which is the pearl hiding within the oyster. Although the chapter is, not surprisingly, arranged according to solvent (including molten salts based on aluminium(III) chloride, pyridinium halides, tetraalkylammonium tetraalkylborates, metal nitrates, metal chlorides, etc.), it encompasses a tremendous range of organic and organometallic chemistry. Some of the organic reactions discussed include the Scholl reaction,

the ene reaction, electrophilic aromatic substitution, rearrangements and isomerizations, cleavage of ethers, cyclization reactions, and aromatization. Organometallic reactions discussed include the synthesis of alkyltin(IV) compounds, hydrosilylation, catalytic reduction of alkenes, hydroformylation of alkenes, and Fischer-Tropsch reactions. If I have listed some of these reactions at length, it is for the specific purpose of emphasizing the tremendous breadth of chemistry which is possible in these unusual solvents. This is an article that will repay the attention of any organometallic chemist, and would alone justify the purchase of the volume.

This volume is reasonably well produced and remarkably well illustrated (considering that it is camera-ready copy format). The index is poor, but the articles themselves are well organized. It is four years since the previous volume in this series (which was, and still is, an invaluable aid to any workers in the field) appeared: it is to be hoped that we will not have to wait another four years until we see Volume 7. This book should be in all chemistry libraries, irrespective of whether they possess earlier volumes in the series.

This book is dedicated to the memory of Warren Grimes, and is available (in North America) from Elsevier Science Publishing Co. Inc., PO Box 1663, Grand Central Station, New York, NY 10163, in addition to the normal Amsterdam outlet.

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Advances in Inorganic Chemistry, Volume 31; edited by H.J. Emeléus and A.G. Sharpe, Academic Press, Orlando, San Diego, New York, Austin, Boston, London, Sydney, Tokyo and Toronto, 1987, vi + 224 pages, \$65.00, £48.50. ISBN 0-12-023631-1.

This volume belongs to the series which, until recently, was known as *Advances in Inorganic Chemistry and Radiochemistry*. The last two words of the title have now been dropped, presumably to project a more '80s image for the series (is radiochemistry really so passé?). There is a not so subtle irony here, then, that the first two reviews in this current volume concern the preparation and purification of actinide metals (J.C. Spirlet, J.R. Peterson and L.B. Asprey, 41 pages, 124 refs.) and the organonuclear chemistry and biomedical applications of astatine (I. Brown, 46 pages, 180 refs.). The best laid schemes o'mice an' men gang aft a-gley!

The remaining three reviews in this volume describe metal-polysulfide complexes (A. Müller and E. Diemann, 34 pages, 195 refs.), iminoboranes (P. Paetzold, 48 pages, 91 refs.), and the synthesis and reactions of phosphorus-rich silylphosphanes (G. Fritz, 44 pages, 54 refs.). All these reviews are well written, well produced, well illustrated, and contain exactly the material that their titles suggest. They are also, I am sure, welcome to the practitioners in their fields, manna to graduate students with an opening thesis chapter to write. Why, then, did I feel so little excitement in opening and reading this volume? Each article is a model of its type, a concise, and not discursive, account of a rather specialized area of inorganic chemistry. In looking back to the early years of this series, I still find the articles invigorating. Now, the series (despite its streamlined title) feels tired, old, and past in its time.