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### Book reviews

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*Gmelin handbook of inorganic chemistry*, 8th edit., *Sc, Y, La — Lu — Rare Earth Elements. Part D5: Complexes and Salts of Carboxylic Acids, Hydroxycarboxylic Acids, and Esters of Carboxylic Acids*, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1984, xiv + 385 pages, DM 1300. ISBN 3-540-93497-9.

This is the twenty-seventh volume of the Gmelin Handbook dealing with the chemistry of "Scandium, Yttrium and the Rare Earth Elements" (System No. 39) to appear since the main volume was published in 1938, and the thirteenth to be published since 1980.

It describes the complexes of these elements with carboxylates and with carboxylic acid esters, under the headings of compounds of monocarboxylic acids, compounds of dicarboxylic acids, compounds of tri- and poly-carboxylic acids, compounds of hydroxy- and oxo-monocarboxylic acids, compounds of hydroxy- and oxo-dicarboxylic acids, compounds of hydroxypolycarboxylic acids, complexes with esters of monocarboxylic acids, complexes with esters of dicarboxylic acids, and complexes with  $\beta$ -ketoesters. The book contains an invaluable seventeen page ligand formula index, which covers not only the present volume, but also any mention of those ligands in Supplement Volumes D1—D3.

The carboxylates represent a class of complexes that has been extensively studied because of their importance to the separation and analysis of the rare earth elements. This volume, however, does *not* deal with this literature, but concentrates upon the synthetic, structural, spectroscopic and solution properties of the complexes. Thus, this volume is of direct and specific relevance to the organometallic and coordination chemist.

The author (E.R. Birnbaum) has performed an outstanding job of collation, and this volume is well up to the expected high standards set by the Gmelin Institute. It should be a part of all libraries attached to academic or industrial organisations in which research into the lanthanide elements occurs; despite its high cost, it is now the definitive source of data upon this important class of complexes.

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

KENNETH R. SEDDON

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*Gmelin handbook of inorganic chemistry*, 8th edit., *U — Uranium, Supplement Volume C4: Uranium Dioxide*, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1984, xii + 140 pages, DM 544. ISBN 3-540-93509-6.

This is the twenty-fourth volume of the Gmelin handbook dealing with the chemistry of "Uranium" (System No. 55) to appear since the main volume