organic chemistry appear different from those found in other comparable textbooks (e.g., J. March, *Advanced Organic Chemistry*, and T. H. Lowry and K. S. Richardson, *Mechanism and Theory in Organic Chemistry*). This is particularly beneficial for the clarity of some of the topics dealt with, and Part A is therefore highly recommended as a thorough graduate-level introduction to structural and mechanistic aspects of organic chemistry.

Part B gives an extensive presentation of a broad selection of organic reactions of synthetic importance, organized by reaction type. Structurally, the book is similar to W. Carruthers' book *Some Modern Methods of Organic Chemistry*, but one significant difference is Carey and Sundberg's much more comprehensive coverage of organometallic reagents and intermediates. Similarities and differences between a variety of reagents are discussed systematically and related to metal properties, particularly the metals' ability to form complexes with substrates and ligands. As a result, the discussion becomes rather mechanistic, and this gives a profound understanding at the molecular level of stereocontrol, which is so important in modern synthetic organic chemistry. Only one chapter, which amounts to 10 percent of the book, is devoted to synthetic planning and retrosynthetic analysis, which is the modern vehicle used to present organic synthesis (for instance in S. Warren, *Designing Organic Synthesis—A Programmed Introduction to the Synthon Approach*, and E. J. Corey and X.-M. Cheng, *The Logic of Chemical Synthesis*). However, intelligent retrosynthesis requires solid reagent knowledge, and to acquire such knowledge, reading of "Advanced Organic Chemistry, Part B: Reactions and Synthesis" is highly recommended.

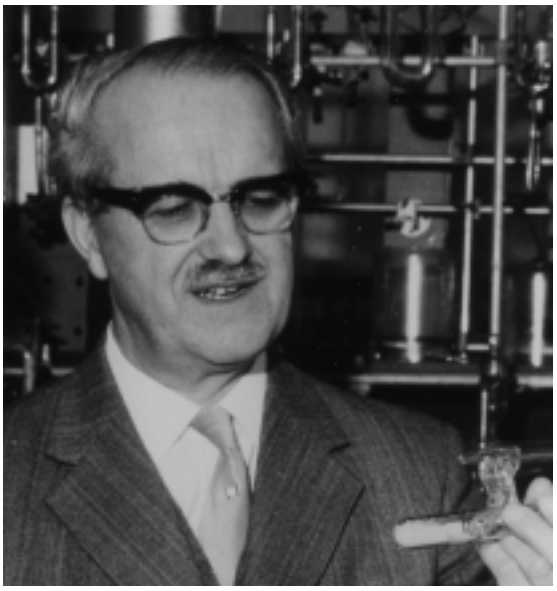
Reviewed by Leiv K. Sydnes, University of Bergen, Norway.

www.wkap.nl/prod/b/0-306-46243-5
www.wkap.nl/prod/b/0-306-46245-1

Modern Coordination Chemistry—The Legacy of Joseph Chatt

G. J. Leigh and N. Winterton, editors
Royal Society of Chemistry, Cambridge, United Kingdom, pp. xviii + 386, 2002.
(ISBN 0-85404-469-8)

The scientific work of Joseph Chatt played a significant role in shaping the field of coordination chemistry as we know it today. The volume under review is an outgrowth of discussions held at the 34th International Coordination Conference (ICCC 34) in Edinburgh, Scotland in July 2000 commemorating Chatt's contributions, while also celebrating the Golden Jubilee of the first meeting of this body organized by Chatt at the ICI



Joseph Chatt

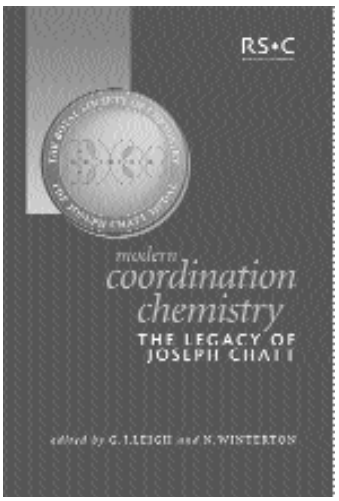
Laboratories at the Frythe, Welwyn (near London). The present work is intended to provide a historical perspective of the scientific achievements of J. Chatt and to show how his contributions have led to current research in the field. These goals have been admirably achieved.

The volume is headed by a section containing personal reminiscences of five close co-workers: G. J. Leigh, R. G. Wilkins, G. A. Gamlen, D. M. Adams, and L. A. Duncanson. Reminiscences of other contributors are also dispersed throughout the subsequent chapters. The next seven sections feature chapters by active contributors organized around the broad range of interests of Joseph Chatt, namely hydrido and dihydrogen complexes, the chemistry of phosphines, transition metal complexes of olefins and other unsaturated hydrocarbons, chemistry related to dinitrogen complexes, biological nitrogen fixation, and patterns in stability and reactivity. One example worth mentioning here is the chapter by G. Frenking titled "The Dewar-Chatt-Duncanson Bonding Model of Transition Metal-Olefin Complexes Examined by Modern Quantum Chemical Methods."

In this review I would like to call attention to two original papers that have become classics in the field of hydridometal complexes. The first of these is "A Volatile Chlorohydride of Platinum" by J. Chatt, L. A. Duncanson, and B. L. Shaw, *Proc. Chem. Soc.* (1957) 343 announcing the synthesis of the new hydrido complex $Pt(H)Cl(PEt_3)_2$. The substitution reactions of this and related complexes were subjected to kinetic studies by F. Basolo and his soon to be famous graduate student H. B. Gray. The non-pi bonding hydrido ligand was found to confer a high kinetic trans effect lending support to the polarizability theory promulgated by the Russian school. A summary of this work including an amusing anecdote about a friendly competition between B. L. Shaw and H. B. Gray are recounted in the chapter

by F. Basolo titled "Mechanisms of Platinum Reactions."

A second contribution that had enormous impact is "The Tautomerism of Arene and Ditertiary Phosphine Complexes of Ruthenium(0), and the Preparation of New Types of Hydridocomplexes of Ruthenium (II)," by J. Chatt and J. M. Davidson, *J. Chem. Soc.* (1965) 843-855. This paper established for the first time a reversible oxidative addition of aryl C-H bonds at a low valent metal center as also the remarkable intra-molecular oxidative C-H addition of a methyl group on the chelated diphosphine ligand, 1,2-bis(dimethylphosphino)ethane, *dmpe*. A continuation of this chemistry is presented in a chapter by S. Sabo-Etienne and B. Chaudret and also in a contribution by M. A. Bennett and J. R. Harper.



For readers interested in IUPAC affairs, it is appropriate to note here that J. Chatt served as secretary of the Commission on the Nomenclature of Inorganic Chemistry (CNIC) from 1959-1963 and continued on as a member through 1971.

This volume makes a unique contribution to the history of coordination chemistry and to the record of contemporary developments in this multifaceted field. I recommend the volume as a necessary addition to institutional libraries and also for the personal book collections of chemists who are active in the practice and in the teaching of transition metal chemistry.

Reviewed by H. D. Kaesz, Department of Chemistry and Biochemistry, University of California, Los Angeles, USA.

www.rsc.org/is/books/mccdesc.html

Reports from Conferences

Biodiversity

by Torbjörn Norin

Biodiversity is an important international topic and the biological implications of biodiversity have been extensively discussed from both scientific and political points of view. However, biodiversity ultimately rests on chemodiversity and, consequently, studies in the field of natural products chemistry offer a deeper understanding of the chemistry of life processes and of complex biological and ecological interactions in Nature. Biomolecular aspects of biodiversity have therefore become an important topic. The scientific challenges and opportunities in the field as well as the possibilities for sustainable utilization of our rich natural resources are enormous. However, they need dedicated attention in order not to threaten future development and welfare.

A few years ago IUPAC's Division of Organic and Biomolecular Chemistry initiated activities in the field of biodiversity. The past president of the Division, Professor Upendra Pandit, took the lead. A series of successful conferences was initiated: the first in Thailand and the second in Brazil. The 3rd IUPAC International Conference on Biodiversity (ICOB-3) was held 3-8 November 2001 in Antalya, Turkey, which was appropriate as it is a country that abounds in biodiversity. Furthermore, Turkey's rich history and diversified cultural heritage provided an extra dimension to the atmosphere of the conference.

The period of the meeting followed, unfortunately, hard on the heels of the tragic events of September 11 in the United States. This presented the organizers with special problems in view of the cancellation of attendance by a number of participants, including several speakers. In some cases the participants could not receive permission to travel from their home countries. However, despite these adverse circumstances, the chairperson of the conference, Professor Bilge Sener of Gazi University, Ankara, through her enormous effort and constructive inventiveness, managed to organize a highly successful scientific event.

The conference listed about 196 participants from 40 countries. The program consisted of five days of exciting interdisciplinary science. Biomolecular aspects of biodiversity and innovative utilization of natural resources were discussed from very diverse points of view—ranging from their botanical, zoological, taxonomic, and genomic expressions to their biomolecular, structural, mechanistic, and functional aspects. There were 11 plenary lectures that covered a range of subjects, including the following:

- Professor William S. Bowers (USA) provided us with exciting information about chemical communication in the insect world and on insect/plant interactions.
- Professor Magid Abou-Gharbia (USA) presented some successful discoveries of new drugs based on natural products.