

## Introduction

---

Thematic volumes have long been an integral and important feature of the *Journal of Organometallic Chemistry*, and such issues have normally been organized around a specific topic, or to honor a distinguished colleague in the field of organometallic chemistry. Several years ago, the Editorial Board together with the Regional Editors and the publishers of this journal, decided to dedicate a special centennial volume in early 1990 to commemorate the publication of the article "Action of Carbon Monoxide on Nickel" by Ludwig Mond and his associates (L. Mond, C. Langer and F. Quinke, *J. Chem. Soc.*, 57 (1890) 749–753). This publication, which described the synthesis and properties of the first binary metal carbonyl, nickel tetracarbonyl, stimulated active programs of research in other laboratories to prepare and study the properties of other metal carbonyls. Special mention should be made of the pioneering research of Walter Hieber and his associates in Munich, Germany, who carried out systematic studies on metal carbonyls during the period 1928–1976. Mond himself utilized his discovery for a commercial process for refining nickel.

Mond's publication in 1890 proved to be the foundation of an important branch of organometallic chemistry involving the transition metals. In the early 1950's, the discovery of cyclopentadienyl derivatives of the transition metals further expanded organotransition metal chemistry. Since that time, these fields have merged, and the synthesis and study of organometallic compounds that contain both carbonyl and  $\pi$ -hydrocarbon ligands have developed at an enormous rate. Metal carbonyls have likewise found widespread applications in catalytic processes such as hydroformylation, and in organic synthesis.

The current Mond Centennial Volume differs in some respects from previous thematic issues. First, Mond's original 1890 publication is reprinted in its entirety. This is followed by a personal accounting of the discovery of nickel tetracarbonyl given by Mond in a lecture (and subsequently in a paper) that he delivered to the New York Section of The Society of Chemical Industry in 1895. Next, a biographic sketch of Ludwig Mond has been compiled by Edward Abel. Further, an excellent overview of metal carbonyl chemistry from the time of Mond to the present has been prepared by Wolfgang Herrmann. Finally, 37 regular papers or short review articles dealing with various aspects of metal carbonyl chemistry complete this volume. These represent invited contributions from well-known authorities in metal carbonyl chemistry throughout the world.

During the past 100 years, metal carbonyls have grown from laboratory curiosities to important materials in science and technology. They have played a very significant role in the development of organometallic chemistry. On behalf of the Editorial Board, the Regional Editors and the publisher of the *Journal of Organometallic Chemistry*, I sincerely hope you enjoy reading this special Mond Centennial Volume as much as we enjoyed putting it together.

*Department of Chemistry, University of Massachusetts,  
Amherst, Massachusetts 01003 (U.S.A.)  
October 12, 1989*

**Marvin D. Rausch**