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Book review

New Syntheses with Carbon Monoxide; J. Falbe (Ed.), Springer Verlag, Berlin, Heidelberg, New York, 1980, xiv + 465 pages, DM 244.

This book is volume 11 in the series "Reactivity and Structure Concepts in Organic Chemistry". It provides a well organized and very thorough review of developments over the past decade in industrially important areas of carbon monoxide chemistry employing metal or organometallic catalysts. It is an excellent source book with 1915 references including many to the patent literature.

The first chapter is a very fine treatise by B. Cornils entitled "Hydroformylation, Oxosynthesis, Roelen Reaction" occupying 181 pages and with 1970 references. The author is to be congratulated on producing so readable and coherent an account of recent developments in hydroformylation and related reactions from so vast and diverse sources or published material. He covers the whole range of activity from academic studies of reaction mechanisms to the outline of industrial processes, who operates them, and economic aspects. B. Cornils with H. Bahrmann also provides a useful short (17 pages, 77 refs.) chapter on homologation of alcohols by syn gas ($2\text{H}_2 + \text{CO}$) a reaction of potential value in the development of methanol- and ethanol-containing motor fuels.

The remaining four chapters are equally authoritative and well written, but shorter. They are "Carbonylations Catalysed by Metal Carbonyls — Reppe Reactions" by A. Mullen (66 pages, 289 refs.), "Hydrogenation of Carbon Monoxide", by C.D. Frohring (63 pages, 262 refs.), "Koch Reactions" by H. Bahrmann (42 pages, 221 refs.), and "Ring Closure Reactions with Carbon Monoxide" by A. Mullen (26 pages, 96 refs.). There is a useful subject index of 25 pages.

The editor and publishers are to be congratulated on a beautifully produced book, well up to the standard expected of this series, and a book which I highly recommend to all interested in the above important areas of organometallic and organic chemistry.

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