

Chemical Reviews

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Main-Group Chemistry: Introduction

It is now a little over 4 years since the first thematic issue of *Chemical Reviews* appeared. It was entitled "Main-Group Chemistry" and contained five review articles, dealing with S-N rings and cages, phosphonium ions, Zintl anions, borinium and borenium ions, and multiply bonded silicon. The chemistry of main-group elements was chosen since it seemed to be in the initial phases of a renaissance and the theme was judged likely to find resonance in the community. The idea of grouping review articles on related subjects was indeed found appealing by our readers, and at present every other issue of *Chemical Reviews* is dedicated to a theme.

The present thematic issue, the fifteenth in the series, is again dedicated to main-group chemistry. This relatively rapid return to a subject reflects the continued growth of interest in this subdiscipline. The articles, written by an outstanding assembly of experts, range over a quite wide area, from synthesis to structure, from spectroscopy to stereochemistry and reactivity, from theory to material science.

J. Barrau, J. Escudié, and J. Satgé review the chemistry of multiply bonded germanium. M. Regitz surveys the remarkable synthetic potential of phosphalkynes and the variety of structures that they provide access to. The structures of main-group metal cage compounds are treated by M. Veith, and the structures of transition-metal complexes with As-As-containing ligands by A.-J. DiMaio and A. L. Rheingold. Group 14 metalloles are covered in two articles: J. Dubac, A. Laporterie, and G. Manuel discuss their synthesis, physical properties, and organic chemistry; E. Colomer, R. J. P. Corriu, and M. Lheureux review the derived ionic species and transition-metal complexes.

Stereochemical aspects of the mechanisms of nucleophilic substitution on silicon are reviewed by R. R. Holmes. Spectroscopy is the main theme of two articles: M. Binnewies and H. Schnöckel describe the preparation and properties of the heavier homologues of nitrosyl and thionitrosyl halides, and K. Balasubramanian discusses the potential energy curves of dimers and trimers of p-block metals. Finally, the recently increasing interest of chemists in material science is reflected in the reviews of the sol-gel process by L. L. Hench and J. K. West and of synthetic approaches to boron nitride by R. T. Paine and C. K. Narula.

The shortcomings of our attempts to subdivide chemistry into neat categories are apparent. The chemistry of carbon and transition metals has clearly crept into several of the subjects, and many of the reviews could have just as well appeared in other thematic issues, in particular, "Gas-Phase Clusters" in 1986, "The Solid State" in 1988, and "Materials for Microelectronics" in 1989. In fact, it is good to see that the traditional but largely artificial barriers between the various branches of chemistry, and between chemistry and allied sciences, have been gradually disappearing in recent times.

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