Science of Synthesis, Volume 4; Edited by I. Fleming; Georg Thieme Verlag: Stuttgart, **2001**; 1060 pp, _1750, ISBN 3-13-112171-8

As Volume Editor of Volume 1 of the landmark series 'Science of Synthesis' I have both a personal attachment to the project and an inside view of the process that unfolds after accepting the offer to edit a volume then watching it appear in its final and bound version. I know the effort that is required on the part of busy authors, multi-tasking editors, and the staff at Thieme.

For those less familiar with the Herculean task of organizing a comprehensive series, I can only say that Dr. Guido Hermann and Dr. Fiona Shortt de Hernandez along with a distinguished Editorial Board have undertaken a project of immense proportions. Hundreds of author's have/will contribute to the 48 volumes that seek to capture and document the most important ways of making organic and organometallic molecules. The editors and authors attempt to select the most valuable reactions to make specific classes of molecules (Product Classes) rather than provide a comprehensive but less critical selection. Each Product Class is divided into Product Subclass, Methods and Variations followed by a brief description of the scope and limitations of the method (Selected Products and Reactions). Detailed experimental procedures are included along with some data on purification of the products and some physical properties. The need to make the series searchable has enforced a strict demand for a hierarchical organization of each volume, which makes finding information easy whether or not the reader examines a single bound volume or does an on-line search.

The first 8 volumes fall under the category of Organometallics and Volume 4, edited by Ian Fleming, is devoted to Compounds of Group 15 (As, Sb, Bi, and Si compounds). Fleming has contributed many times to large projects of this kind and his experience shows in the more than 1000 pages that comprise his volume. A wealth of valuable information is available. One of the most important features of the volumes on Organometallics is the sections entitled 'Application of the Product Subclass in Organic Synthesis'. Chemists interested in synthesis need to know how to make specific reagents and also how they are used to prepare more complex organic molecules. The Application section, follows each Product Subclass and gives the reader an overview of how these compounds react and what can be made.

As might be expected, silicon-containing compounds dominate the volume comprising about 85% of the total space. Arsenic compounds merit only 13 pages, antimony has 40 pages, and 24 pages are devoted to bismuth compounds, in part due to recently published *Houben–Weyl* volumes on these topics. Within the area of silicon chemistry, 42 Product Subclasses have been identified ranging from disilenes and disilanes, silenes, silylenes to silyl hydrides to silyl metal species (boron, tin, zinc, copper and lithium), silyhalides, silylethers, silylphosphines, and a wealth of organosilanes.

It is a challenge to summarize the huge amount of information in one volume or critically examine the contents. In each of the sections I examined where I have first-hand knowledge, I found specific and detailed information that would be useful to a practicing synthetic organic chemist, be they a graduate student, a researcher in the pharmaceutical, agrochemical, or materials chemistry industry or a faculty member at a university.

The cost of individual volumes makes it unlikely that many people will purchase this series for their personal use but I cannot imagine any academic or industrial library being without a hard copy and/or on-line version. Fleming's volume is a beautiful example of what the Science of Synthesis series seeks to accomplish.

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