Journal of Sulfur Chemistry
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713926081

A review of: "Advances in Sulfur Chemistry Vol. 1"

Carl Th. Pedersen[a]
[a] Department of Chemistry, Odense University Denmark,

To cite this Article Pedersen, Carl Th.(1995) 'A review of: "Advances in Sulfur Chemistry Vol. 1"', Journal of Sulfur Chemistry, 17: 1, 157 — 158
To link to this Article: DOI: 10.1080/01961779508047888
URL: http://dx.doi.org/10.1080/01961779508047888

Sulfur Reports, Volume 17, pp. 157–158
Reprints available directly from the publisher
Photocopying permitted by license only

BOOK REVIEW

Erick Block, ed., *Advances in Sulfur Chemistry Vol. 1*, JAI Press Inc., London 1994, ISBN 0-89232-868-1, £62.50/$97.50, xii + 212pp.

A new review series in sulfur chemistry has appeared. Most chemists are very happy when they find reviews in a field they are interested in. Sulfur chemistry has since 1980 been lucky to have such a review forum in *Sulfur Reports*, where reviews from all parts of sulfur chemistry have appeared. The editor of this new series argues in the preface that "there is a need for an ongoing series reviewing the most active areas of current research on sulfur chemistry written by experts in the field." In the aims and scope of *Sulfur Reports* one can read that "It is intended to provide an international forum for dissemination of information and ideas from the front line of sulfur research." It is a legitimate interest of publishing companies to try to send as many new series and journals as possible on the market, which is the way they earn their money. However, it is not in the interest of the scientific community to have as many different series and journals as possible if they cover the same subject. Our libraries do not get a rise in their budgets because a new journal is published. This means that they often have to skip one journal to start another. As chemists we therefore have a responsibility to make sure that our area is sufficiently covered by series and journals but not over-covered. In that sense I do not think we need *Advances in Sulfur Chemistry*. Each of the four excellent reviews in this first volume could, without any problems, have been accepted for publication in *Sulfur Reports*.

The reviewer is aware that his membership of the editorial board of *Sulfur Reports* makes his position difficult as he can easily be declared biased in this matter. He has, however, the same point of view on scientific publishing policy in general.

Volume 1 of *Advances in Sulfur Chemistry* consists of four reviews:

1. Edwin Vedejs: Total Synthesis Mediated by Cyclic Sulfides, 40 pages with 57 references.

The author points out that sulfur can function in three different ways as an auxiliary agent in organic synthesis.

1. Sulfur can be removed at the same time as functionality is removed, *e.g.* Raney Nickel desulfurization.

2. Sulfur can be removed while functionality is conserved *e.g.* the Ramberg-Bäcklund reaction.

3. Sulfur is conserved in the molecule at the same time as functionality is conserved *e.g.* the Sommelet-Hauser rearrangement.

The author now gives examples of these three types of reactions. It seems a little odd to have one chapter named Raney Nickel Desulfurization and one named Reductive Sulfur Removal in Synthesis.

2. Marian Mikołajczyk and Piotr Bałczewski: α-Phosphoryl-substituted Organosulfur Compounds, 54 pages with 180 references.

This chapter deals with four related types of mixed sulfur-phosphorus compounds 1. α-Phosphoryl thiols, 2. α-Phosphoryl sulfides. 3. α-Phosphoryl sulfoxides, 4. α-Phosphoryl

sulfones. Part 2 is more than half the review as the sulfides are the most important class of sulfur-phosphorus compounds used in synthesis. Preparation, synthesis as well as the use of these compounds in medicine and technology is dealt with.

3. Kosta Steliou, Patricia L. Folkins and David N. Harpp: Biologically Interesting Small Ring Disulfides 35 pages with 113 references.

This chapter treats 3-, 4-, 5-, and 6-membered cyclic disulfides in separate parts. It is a little surprising that among the five-membered disulfides only dithiolanes—apart from two examples of dithioles—are treated whereas both dithianes and dithiines are discussed in detail. This is particularly surprising as an extensive literature on the biological activity of 1,2-dithiole-3-thiones has appeared since 1976 when it was found that Oltipraz®, 4-methyl-5-(2-pyrazinyl)-1,2-dithiole-3-thione, is effective against bilharziosis.

From a chemical point of view the title is rather inscrutable and the authors have made the treatment even more inscrutable as they have, probably for chemical-systematical reasons, included 3- and 4-membered rings though as they write "—no naturally occurring disulfide equivalent (e.g., a dithiirane) has yet been described"! The chapter is, however, an interesting survey of the occurrence and biological activity of naturally occurring 5- and 6-membered cyclic disulfides.

4. Eric Block and Jon Zubieta: Metal-thiolate Coordination Chemistry, a bioinorganic perspective, 60 pages, 313 references.

As the subtitle reveals this review is on the borderline between inorganic and organic sulfur chemistry. The review focuses on the coordination of iron, nickel, copper, zinc, mercury and molybdenum with cysteine in proteins and enzymes. The other main topic of the review is nitrogenase, the enzyme that catalyses the conversion of atmospheric nitrogen to ammonia. This chapter is devoted to both the structure of the enzyme and the reaction mechanism of nitrogen fixation.

All four reviews are of interest for specialists in their fields. However, the high price of the publication taken in consideration, there would have been a larger audience if the book had focused on one central theme instead of four subjects covering a broad spectrum of sulfur chemistry.

Carl Th. Pedersen
Department of Chemistry
Odense University
Denmark