

Progress in Heterocyclic Chemistry (Volume 17), G. W. Gribble, J. A. Joule (Eds.), Elsevier: Oxford, 2005, 460 pp., €250/£175/US\$275, ISBN 0-08-044711-2

Indispensable survey in heterocyclic chemistry of 2004

For professional researchers in academia and industry, who neither have time for extensive reading nor access to a large number of scientific journals, the annual report of the progress in that particular field of chemistry is enormously useful. This book provides an excellent survey on the advances that have been made and allows the reader to catch up with the most significant developments in heterocyclic chemistry of the year 2004.

The editors, Gribble and Joule, organized numerous well-known scientists in their respective fields into writing contributions that essentially review the different aspects of heterocyclic chemistry that appeared in 2004. Since the size of the monograph is limited, the book focuses on reports and their synthetic utility as well as potential applications. The 17th volume is systematically organized like the previous editions: the monograph starts with two concise and comprehensive reviews devoted to significant and cutting-edge topics, followed by 14 contributions dealing with different classes of heterocyclic compounds. The first survey covers furans as versatile synthons in organic synthesis. Despite the errors in the first scheme and the numbering of the hydrofurans (p.2), the review is highly informative. The second report discusses the preparation and photochromic properties of naphthopyrans. The photochemical ring opening of the pyran moieties create colored organic compounds which are utilized in a variety of applications, such as contact lenses, UV-protection screens, or agrochemical films. However, for a broader use of the naphthopyran-based compounds, the challenge consists in the creation of a grey color by the photochemical transformation.

Unfortunately, in the section of small rings, the contribution on three-membered-ring systems is not included in

this volume. The next review treats the four-membered cycles with a particular focus on potential drug molecules. Chapter 5 is devoted to five-membered heterocycles and consists of a sequence of seven surveys outlined by the heteroatoms involved. Since most of these reviews give no mechanistic details, a reference to the named transformation would be very helpful for the less experienced reader. The congener for the six-membered heterocycles includes four contributions. The chemistry is covered in a very broad sense, including coordination compounds of diazines. Most of the discussed conversions are not given with the corresponding chemical yields, making it rather difficult to evaluate their synthetic utility. The book concludes with two chapters dealing with seven-membered-ring systems and larger heterocycles. The last chapter reviews mostly supramolecular architectures like crown ethers, catenanes and cyclophanes. Despite the existence of the previous volumes on this topic, almost no redundant parts are found.

In relation to size and coverage of this book, a twelve-page index is appropriate. Only systematic names for the heterocyclic core structures, the names of natural products, and some key words, are given. The schemes are clearly arranged and the numbering in the individual chapter is highly systematic. The number of typos in the written part and the schemes is negligible.

In conclusion, this book provides an excellent overview on the developments of heterocyclic chemistry published in 2004. In addition, the two reviews fill in the gaps of literature. For the synthetically oriented chemist dealing with heterocyclic chemistry, it should be a compulsory read and an indispensable source of information. Therefore, this valuable monograph should have its definite place in every good library collection.

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