

Book Review

Named Organic Reaction. By T. Laue, A. Plagens. Wiley: Chichester 1998, 288 pp, hardback. £ 35.95. ISBN 0-471971421.

Named reactions have always been at the heart of the development of synthetic organic chemistry, and they continue to assume a prominent position in the subject. These reactions are some of the most important and widely exploited in natural and non-natural product synthesis.

In this book, the authors describe approximately 130 named chemical reactions in detail. The reactions are listed alphabetically with 2–6 pages devoted to each reaction. For each reaction, approximately 6–12 key references to original papers or review articles are given. The material is presented in a very readable and concise format, and is pitched at the graduate chemist level.

The strictly alphabetical order used in the book is logical and makes it very easy to find a reaction by name. However, this treatment of the subject means that similar or related reactions are usually widely dispersed and unrelated reactions are juxtaposed.

It is obvious that the authors have not attempted to be comprehensive in their treatment of the subject. This is not surprising when one considers that such a text would need to cover three times the number of reactions described in this book and would run to approximately 900 pages instead of just 288 pages. Given that some selection of material has been necessary, it would have been helpful if the introduction had provided some insight into the criteria used to determine the inclusion or omission of a particular reaction. The one page introduction, in which the authors assert that selection was based on the ‘importance’ of each reaction, is not especially illuminating in this regard.

The compact nature of the book has necessitated the inclusion of a rather conservative amount of information concerning each reaction. Although the key mechanistic

aspects of each reaction are treated in a precise and succinct manner, space limitations have precluded the inclusion of examples of the scope and application of each reaction in a synthetic context. This is disappointing because the large diagrams constitute a rather profligate use of space which could have been used to illustrate the scope of each reaction or to include some additional reactions.

Because of the selective nature of the book and the subjective choice of reactions, readers may be rather surprised by some of the omissions e.g. the Barton, Baylis-Hillman and Ritter reactions, and the Swern and Jones oxidations. In addition, several unusual reactions (e.g., the Delépine reaction and Schiemann reaction), which are of limited scope and little mechanistic interest, are included. The book has some particularly noticeable gaps with regard to fragmentation and rearrangement reactions. For example, the Pummerer reaction, the Grob fragmentation, and the Eschenmoser fragmentation are not mentioned. Many standard heterocyclic reactions, such as the Pictet-Spengler, Paal-Knorr and Bischler-Napieralski reactions, also fail to merit discussion.

There is an unfortunate tendency to disguise some reactions under the headings of related ones. For example, Horner-Wadsworth-Emmons variants appear under the heading ‘Wittig reaction’, and the Oppenauer oxidation reaction appears under the heading ‘Meerwein-Ponndorf-Verley reduction’. This may be justified in chemical terms, but is likely to frustrate the uninitiated.

Notwithstanding the criticisms above, the authors have been brave to attempt to cover such a large amount of material in a volume of this length. They deserve credit for producing a very worthy book that allows quick access to concise descriptions of many of the most important reactions in organic synthesis.

J. Stephen Clark, University of Nottingham, UK