Chapter four effectively talks about how to choose a target, or at least how to look for structural features in a target that may be important. Once again, the presentation order is peculiar, since one would logically choose a target and analyze its structural features before planning reactions to make C−C bonds and functional groups.

In general, I find the presentation to be "backwards" for planning and executing a synthesis. There is a lot of information in this book, and if the reader is well-versed in synthesis, it can be useful. For a novice to synthesis, I believe the presentation order in spreading key information out rather than focusing the reader's attention and the difficulty in sorting out the logical order of reactions will cause problems.

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NP9907477

10.1021/np9907477

The Combinatorial Index. By Barry A. Bunin (Arris Pharmaceutical, San Francisco, CA). Academic Press, San Diego, CA. 1998. xvii + 322 pp. 17.5 × 25 cm. $79.95. ISBN 0-12-141340-3.

The relatively new technique of combinatorial chemistry has revolutionized the approach of chemists to the synthesis of compounds for practical applications. First used extensively in the pharmaceutical industry, it is increasingly being applied in other areas such as the chemistry of materials and the discovery of new catalysts. The advent of combinatorial chemistry could be seen as a threat to natural products chemistry, since at least initially some pharmaceutical companies eliminated or downsized their natural products discovery drug programs to put resources into combinatorial chemistry. This reviewer prefers to see it as an opportunity for new advances in natural products chemistry, since natural products, with their complex three-dimensional scaffolds, make ideal "cores" for combinatorial development. In addition, in spite of advances in making combinatorial analogs with natural product-like structural features (*J. Am. Chem. Soc.* **1998**, *120*, 8565−8566), a recent survey indicates that natural products are still superior to synthetic compounds as a source of chemical diversity (*Angew. Chem., Int. Ed.* **1999**, *38*, 643−647).

With the perspective that combinatorial chemistry can enhance the value of natural products as lead compounds for drug discovery, the book under consideration should be of interest to a substantial number of natural product researchers. Written by one of the pioneers in the solid-phase synthesis of non-peptide combinatorial libraries, it provides a convenient summary of the state of the field as of 1996 and early 1997. A particularly attractive feature of the book is the inclusion of representative experimental procedures for the major reactions, a feature which will ensure that the book will end up on the laboratory bench rather than in the library.

The book opens with two short chapters on introduction and background, and these are followed by four substantial chapters dealing with the major aspects of combinatorial synthesis. Chapter 3, "Linkers for Solid-Phase Synthesis," provides an overview of over fifty different kinds of linkers for linking carboxylic acids, amides, alcohols, amines, and other functional groups to resins. Chapter 4, "Combinatorial Solid-Phase Synthesis," then covers methods for carrying out key chemical transformations (carbon−carbon bond formations, condensation reactions, oxidations, reductions, etc.) on solid supports. Chapter 5 deals with "Analytical Methods for Solid-Phase Synthesis" and Chapter 6 covers "Preparation of Solution Libraries and Combined Approaches at the Solution/Solid-Phase Interface." These chapters are followed by five helpful appendices, including one giving a very useful summary of functional group transformations for combinatorial solid-phase synthesis.

This book provides a very good overview of combinatorial chemistry in a format that will make it especially useful to new entries into this area. It is hoped that it will find a ready readership not only among synthetic chemists, but also among natural product researchers looking for ways to enhance the value of their discoveries by applying combinatorial methods to analogue preparation.

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NP990748Z

10.1021/np990748z