

BOOK REVIEWS

Protective Groups in Organic Synthesis. THEODORA W. GREENE. Wiley-Interscience, John Wiley and Sons, Inc., 605 Third Avenue, New York, NY 10158. 1981. viii + 349 pp. 16.5 x 24 cm. \$37.50.

Protective groups play a key role in organic synthesis, and the natural products researcher will often need to make use of them, perhaps for the total synthesis of a complex natural product, for the structural modification of a biologically active material so as to develop structure-activity correlations, or for the synthesis of a specifically labelled substrate for biosynthetic investigations. The importance of protective groups has been recognized by the development of numerous new such groups during the last decade, and this has made it difficult to keep up with the latest work and to select the best protective group for a particular transformation. The present book is thus a welcome addition to the literature.

The book opens with a brief discussion of the role of protective groups in organic synthesis, and illustrates their importance with a summary of the synthesis of brefeldin A. The next six chapters then deal with protective groups for alcohols (including 1,2- and 1,3-diols), phenols, carbonyl groups, carboxyl groups, thiol groups, and amino groups. In each of these chapters the appropriate protective groups are listed with literature references to their use, and in most cases with examples of reactions to form the protected derivative and to cleave it. The number of protective groups listed is impressive; over a hundred different groups are listed for simple alcohols, with another thirty for 1,2- and 1,3-diols, and similar numbers are listed for the other functional groups treated. The final section of the book consists of a series of tables listing the reactivities of the more commonly used protective groups to a series of 108 different reaction conditions.

Overall, the book is an extremely valuable handbook for anyone needing to use protective groups in organic synthesis. It succeeds in summarizing an enormous amount of information in a convenient form, and it is certain to save its user a lot of time searching for the "right" protective group. Its relatively modest price will make it a welcome addition to many personal bookshelves.

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Aliphatic and Related Natural Product Chemistry, Volume 2, Senior Reporter F. D. GUNSTONE. Royal Society of Chemistry, Burlington House, London W1V 0BN, England. 1981. xiv + 265 pp. 14.5 x 22 cm. \$104.

This book, the second in a series of biennial reviews, covers the years 1978 and 1979. As *Volume 1* was not reviewed in this journal, I might note that comments given here apply equally to that publication. The series is one of many published by the Royal Society as part of its *Specialist Periodical Reports*, all of which originated from *Annual Reports* in 1967 when it was realized that all the chemical literature could not be reviewed in a single annual volume.

In content, this book is divided into seven chapters: Natural Acetylenic and Olefinic Compounds Excluding Marine Natural Products; Acyclic Terpenoids; Insect Pheromones and Related Behaviour-modifying Chemicals; Olefinic Microbial Metabolites including Macrocylic Compounds; Prostaglandins; Fatty Acids and Glycerides; and Polar Lipids. According to an apology in the brief foreword, an eighth chapter on Marine Aliphatic Natural Products has been omitted due to unforeseen circumstances. Other series in the *Reports* cover other categories, specifically *The Alkaloids* (currently Volume 10) and *Terpenoids and Steroids* (Volume 9). While there is an extensive author index, no compound index is provided. This is somewhat mitigated by a fairly extensive listing of chemical classes in the chapter subdivisions as given in the table of contents.

The text is designed to provide a maximum amount of information while using minimal space. The type is small but comfortably read; the lines terse but quite exhaustive in coverage. Reference to pharmacological properties is made without quantitation. The rather frenetic quality of the text is relieved by the interspersing of numerous well-drawn structures. The latter are given for essentially every compound discussed and placed in close proximity to the pertinent citations. In summation the construction of the book is excellent.

Whether or not individuals will want to own their own copies must be a matter of personal need. The lack of a compound index severely limits its usefulness as a general reference. Anyone wishing to build a personal library on natural products would have to give serious thought to the cost of buying not only this series every other year but two others as well. Except where one has strong interests in one or more of the categories covered, this series seems best suited for institutional libraries. Any of the latter where chemistry is practiced should certainly have a copy on its shelves.

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