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Book Reviews

Aromatic and Heteroaromatic Chemistry, Vol. 1. C. W. Bird and G. W. H. Cheeseman, Senior Reporters. The Chemical Society, Burlington House, London. 1973. xvi + 445 pp. 22 × 14 cm. £11.00.

This title is one of the expanding series of Specialist Periodical Reports published by the Chemical Society, London. This series, now approaching its full complement of 35 separate titles, offers extensive reviews of the chemical literature divided into major areas of research. Most of these reviews are published on an annual basis and are conveniently keyed to volumes of *Chemical Abstracts*.

The current publication is the initial one in the "Aromatic and Heteroaromatic Chemistry" series and is based on the contents of Vol. 75 and 76 of *Chemical Abstracts*. The material is arranged by reaction type, rather than by ring system, thus allowing a more concise and extensive literature coverage. The potential disadvantage of this organizational mode is a difficulty in gathering information on any particular ring system. Because of this, a book's usefulness as a pure reference text could be limited. The editors have remained cognizant of this problem, however, and through the use of subheadings have largely overcome it.

The work is very well organized into 15 chapters, as follows. Chapter 1 presents extensive coverage of ring systems of topical interest and novel structural features, with the emphasis on further understanding of the nature of aromatic systems and aromaticity in general. Chapters 2-5 consider general synthesis of aromatic ring systems, subdivided into the areas of intramolecular and intermolecular cyclizations, cycloaddition reactions, and ring interconversions. Chapters 6-11 cover reactions of ring systems, including electrophilic and nucleophilic substitution on carbon, electrophilic substitution on heteroatoms, substitution by electron-deficient species, addition reactions, and ring-cleavage reactions. Chapter 12 is dedicated to side chain reactions, while the remaining three chapters cover selected natural products, including porphyrins and oxygen heterocycles. No coverage is given to those systems covered by other Specialist Periodical Reports, such as alkaloids, terpenoids, and steroids.

Each chapter is further subdivided into general ring types or, in some cases, more specific reaction type (e.g., Chapter 6, Electrophilic Substitution on Carbon, is divided into subheadings treating replacement by hydrogen, metalation, reactions with groups IV, V, VI, and VII electrophiles, and direct substituent replacement). This further classification adds a great deal to the usefulness of the book by serving as a generalized index and, thus, effectively combines the advantages of both organization by reaction type and by ring type.

The work is quite extensive in its coverage, yet is easily read. It is generally written from a synthetic viewpoint and is thus extremely useful to anyone interested in synthetic organic chemis-

try. Being very well documented, with a particularly useful author index, it is a useful addition to any library.

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Experimental Organic Chemistry. By Arnold J. Krubsack. Allyn and Bacon, Boston, Mass. 1973. xvi + 445 pp. \$9.95.

The preface states the author's intent to construct a format for an organic chemistry laboratory manual which is a compromise between the "cookbook" approach and the "honors" approach in which the student is given a minimum amount of laboratory information and is required to utilize his own ingenuity and initiative to develop details for the experiment. To a remarkable degree, the volume is successful in this respect.

Early chapters deal with fundamental techniques in a highly readable style: melting points, extraction procedures, recrystallization, distillation, chromatography, use of the chemistry library. Chapters on infrared, ultraviolet, and mass spectroscopy and nuclear magnetic resonance are pitched at a reasonable and proper level for beginning organic chemistry students, and they are clear and readable. This entire portion of the book is designed as a reference resource for the experimental section which comprises the latter half.

This "reactions" portion surveys some of the principal types of organic reactions: formation of alkyl halides, organometallics, oxidations, Friedel-Crafts reactions, reductive methods (including catalytic hydrogenation), the Wittig reaction, Birch reduction, carbene formation and reactions, hydroboration, enamines, and heterocyclic ring formation. Each chapter contains excellent introductory theoretical material which helps make the experiment meaningful; useful techniques such as preparative tlc are integrated as a part of experimental procedures.

The book seems unusually well written and free from errors. This reviewer would highly recommend it as the laboratory manual for beginning organic chemistry courses. Indeed, many first-year graduate students might find it useful as a rapid, easily read reference for basic information on techniques and procedures to which they have been exposed, but which they have never really mastered.

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