The final chapter, by Henning and Schwarz, discusses the problems of studying the determination of cell shape. The most serious problem is clearly that of separating the pleiotropic effects of events (mutation, drug action, metabolic imbalance) that affect such tertiary phenomena as the three-dimensional arrangement of structural and other polymers. The determination of this arrangement probably depends on the spatial and temporal integration of biosynthetic and hydrolytic enzyme actions as well as on the often-postulated self-assembly properties of protomers. Like other workers in the field, the authors fail to come up with a comprehensive plan of attack for dealing with these problems. Much of their discussion is predicated on the work of Brinton on the self-assembly of *Bacillus brevis* T layer protein into cylinders in vitro. This phenomenon is now known to be an artifact seen only in partially degraded material, so this promising lead seems to be another dead end.

This book will provide source material for future work in the biology of bacterial cell surfaces, and it is useful to have reviews of these related subjects collected in one volume.

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Reactions Involving Boron

Organoboranes in Organic Synthesis. GORDON M. L. CRAGG. Dekker, New York, 1973. xvi, 422 pp., illus. $24.50. Studies in Organic Chemistry, vol. 1.

This book is concerned with a field of organic chemistry that has developed almost totally within the last 15 years. It discusses three related topics: the hydroboration reaction to form carbon-boron bonds, reactions of carbon-boron bonds to yield functional groups or carbon-carbon bonds, and reduction of functional groups by boranes containing at least one boron-hydrogen bond. The author's intention was to provide a comprehensive review, and in this he has succeeded very well.

The book is divided according to type of transformation (for example, hydroboration of alkynes is the subject of one chapter). Subdivisions are according to the structure of the compounds involved in the transformations. To orient the reader there is at the beginning a concise review chapter, including references to the fuller discussions elsewhere in the book.

The literature appears to have been covered well into 1972. There are a long and detailed subject index and a thorough author index. At the beginning of the book there is a table of abbreviations, identification of some of which is vital for the uninitiated; the author is to be commended for displaying this so prominently.

Regrettably, the book is photographically reproduced from the typed manuscript, and the pages, though clear and free of typographical errors, appear "busy" and cluttered.

It should be noted that this book appeared not long after *Boranes in Organic Chemistry* by H. C. Brown, the leading investigator in this field. Brown's book—derived from a series of lectures encompassing his researches in several diverse areas—is more limited to his recent novel contributions to organoborane chemistry, although the history of the field, including numerous personal insights, is presented. Cragg's book (which is dedicated to Brown) is considerably drier but more extensive in its coverage.

In summary, *Organoboranes in Organic Synthesis* provides an excellent way to become familiar with the possibilities for applying these recently developed methods to synthesis, even for those not thoroughly familiar with organic synthesis.

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Properties of Plasmids

Bacterial Plasmids. Conjugation, Colicinogeny and Transmissible Drug-Resistance. G. G. MEYNELL. MIT Press, Cambridge, Mass., 1973. xiv, 164 pp., illus. $14.95.

Recently, articles have appeared in *Science* and the weekly news magazines describing the joining of DNA containing the genes from a South African toad with the DNA of a bacterial plasmid and the subsequent use of this hybrid DNA to transform bacterial cells so that the cells produced an animal gene product. These articles have contained interesting speculations on the possible beneficial applications of these new genetic techniques in agriculture and medicine. It has also been pointed out, however, that the results of this kind of genetic manipulation with antibiotic resistance genes could pose a danger to mankind, and a committee of the National Academy of Sciences has appealed to investigators throughout the world to refrain from attempting certain kinds of experiments until the hazards can be evaluated (*Science*, 26 July, p. 303). With this increased interest in plasmids, the general scientific reader is fortunate that he can consult this well-written book by Meynell for more information on the subject. The book was published in 1973 and, although it does not include the recent experiments discussed in the news magazines, it does provide the necessary background for understanding them. It is written in such a way as to emphasize the similarities in the various genetic and molecular properties of bacterial plasmids. Many of these properties are known to be shared by the extrachromosomal DNA of eukaryotic cells, and Meynell is particularly interested in presenting the information about bacterial plasmids in a general way so that it will be useful to those working with other organisms as well.

By concentrating on the similarities between plasmids and forgoing a detailed catalog of how each plasmid differs from others, Meynell has produced a concise, unified, and easy-to-read book. It covers all aspects of transfer, integration, replication, and maintenance of plasmids as well as the physical characterization of plasmid DNA. Plasmid genetics and the control and regulation of plasmid gene product biosynthesis are thoroughly handled. The book is fact-filled, and no space has been wasted on unnecessary elaboration. This concise style of writing may mean that some readers will want more information about the methods and details of the experiments. For this, the reader will have to go to the original work, but the task has been simplified because the author has provided extensive references, citing over 650 articles, of which about 20 percent were published in the '70's.

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