

## BOOK REVIEW

**CALIXARENES.** By C. DAVID GUTSCHE. (Monographs in Supramolecular Chemistry. Series Editor J. FRASER STODDART.) Royal Society of Chemistry, London, 1989.

This is the first book written about calixarenes, cyclic oligomers made up of phenol and formaldehyde. As calixarenes have a cavity-shaped architecture, they were expected to be useful as new building blocks for designing functionalized host molecules like cyclodextrins and crown ethers. Therefore, the chemistry of calixarenes is of increasing concern to many chemists in relation to molecular recognition. In this context, the book is quite timely and well organized.

The book consists of seven chapters. In each chapter many pages are devoted to a survey of the historical background. This style is very helpful in understanding how calixarene compounds attracted the attention of chemists working in this field. In Chapter 1, the story begins with Adolph von Baeyer and Leo Baekeland, who opened the door for oligomerization of phenol and formaldehyde. The story is extended to the research of a German group (Alois Zinke and Hermann Kämmerer) who established the stepwise synthesis of calixarenes. At this stage, however, calixarenes did not attract the interest of many chemists because the total yields were extremely low. In Chapter 2, which is very interesting and concrete, the author describes from his own memory how the one-step synthesis of calixarenes was achieved. With the aid of this discovery organic chemists could now easily synthesize calixarenes in good yields, and many chemists came into this field. In Chapters 3 and 4, the characterization, properties, and conformations of calixarenes are described. Chapters 5 to 7 describe functionalization and applications. Also in these chapters, several chemists who are now working in this field are introduced along with their achievements and personal histories: they are D. J. Cram, J. Atwood, G. D. Andreetti, R. Ungaro, V. Böhmer, and myself. It is very interesting to read why and how they became interested in calixarenes.

The book is printed in color and includes many CPK models and X-ray structures. Thus, this book is quite easy to read and understand. Although my mother language is not English, I feel that the English used in this book is very beautiful and sophisticated.

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