or prostaglandin receptors after passage through Sepharose columns of the agonists; and the enhanced immunocompetence of a population of spleen cells in which histamine-receptive cells were removed by histamine Sepharose columns. Lawrence Lichtenstein goes on to discuss evidence for and against the role of cyclic nucleotides in inflammation. Michael Kaliner and K. Frank Austen demonstrate that antigen-induced secretion of histamine and slow-reacting substance of anaphylaxis were decreased by agents that elevate cyclic AMP and increased where cyclic AMP concentrations were depressed.

The final chapters and discussions concern the role of cyclic AMP in cell division and the effects of exogenously added cyclic nucleotides upon cell morphology and tumor kinetics.

Each chapter is followed by discussion that in many cases is critical, speculative, and probing. The last chapter is the transcript of the final discussion, led by Alan Robison, on the role of cyclic AMP and cyclic GMP in cell replication, the role of cyclic AMP in contact inhibition of cell growth, and the persistent changes in cell function that appear to be mediated by rather transient alterations in cellular metabolism.

The book has been well edited, contains many useful references, and should be a valuable reference for those peripherally or directly interested in the relationships between cyclic nucleotides, immunology, and cell growth.

GARY BROOKER

*Department of Pharmacology,*
*University of Virginia*
*School of Medicine, Charlottesville*

## Mass Spectrometry

**Metastable Ions.** R. G. COOKS, J. H. BEYNON, R. M. CAPRIOLO, and G. R. LESTER. Elsevier, New York, 1973. xii, 296 pp., illus. $29.50.

In the jargon of mass spectrometrists a metastable ion is one that is formed by fragmentation in the field-free region of the analyzer. In magnetic-focusing instruments such ions appear in the spectrum as broad peaks, usually at nonintegral masses. Their apparent masses are related by a simple equation to the true masses of the precursor and daughter ions, and the width of the mass peak is related to the translational energy release in the fragmentation process. These properties make the metastable ions invaluable in the identification of the various decomposition paths. Thus by taking maximum advantage of the metastable ions in conjunction with normal mass spectral peaks it is often possible to establish which isomers are present in a mixture of them, to identify various compounds present in a complex mixture, and to establish isotope distribution in the product ions, and in some instances it is possible to establish the structure of ions as well as molecules.

This book presents a concise and lucid discussion of metastable ions. The authors limit their consideration to positive ions and, with minor exceptions, to magnetic-deflection instruments, since these are of especial use in organic mass spectrometry. Within these limits the subject is quite completely covered. There are valuable discussions of the origin of metastable ions and of the techniques employed in their detection. There are especially useful descriptions of the techniques of obtaining and making use of ion kinetic-energy spectra. The equations for various metastable processes are developed and examples of the various processes and their uses are given. Magnetic-deflection instruments are described briefly and some background discussion of the processes by which positive ions are formed is given. There is in addition, in an appendix, a useful presentation of the rate theory of mass spectra.

For any scientist interested in the detection and elucidation of the structures of complex molecules this book will serve as a useful text as well as a handy reference. It will also be of value to those interested in the rates of unimolecular reactions and the distribution of energy in the reaction products. The writing throughout is characterized by exceptional clarity and grace, and the book is a pleasure to read.

J. L. FRANKLIN

*Department of Chemistry,*
*Rice University, Houston, Texas*

## Books Received

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**Advances in Cyclic Nucleotide Research.** Vol. 4. Paul Greengard and G. Alan Robison, Eds., Raven, New York, 1974. x, 488 pp., illus. $28.50.

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**Air Quality Management and Land Use Planning.** Legal, Administrative, and Methodological Perspectives. George Hagevik, Daniel R. Mandelker, and Richard K. Brail. Praeger, New York, 1974. xvi, 336 pp. $20. Praeger, Special Studies in U.S. Economic, Social, and Political Issues.

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**The Bertrand Bottles.** A Study of 19th-Century Glass and Ceramic Containers. Ronald R. Switzer. U.S. National Park Service, Washington, D.C., 1974 (available from the Superintendent of Documents, Washington). xii, 100 pp., illus. Paper, $1.90.

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**Birds of Australia.** Michael Morcombe. Scribner, New York, 1974. 80 pp., illus. $7.95.

**The Cell Nucleus.** Vol. 3. Harris Busch, Ed. Academic Press, New York, 1974. xxiv, 584 pp., illus. $48.

**Changing the Medical Care System.** A Controlled Experiment in Comprehensive Care. Leon S. Robertson, John Kosa, Margaret C. Heagarty, Robert J. Haggerty, and Joel J. Alpert. Praeger, New York, 1974. xviii, 182 pp. $15. Praeger Special Studies in U.S. Economic, Social, and Political Issues.

**DNA Synthesis.** Arthur Kornberg. W. H. Freeman, San Francisco, 1974. x, 400 pp., illus. $18.

**Determination of Gaseous Elements in**

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