now been assembled and presented in book form, with editing and an introductory chapter by Ronald Malt. Dr. Malt's introduction offers a brief consideration of nucleic acid structure and some of the technics used in the field, such as cell fractionation and density gradient centrifugation. His selection of Ptashne's work on the lambda-phage repressor as an illustration of the power of these technics sets the pace for the up-to-date treatment in the chapters to follow. Jonathan Warner and Ruy Soeiro have written two excellent chapters called "The Organization and Function of Cellular RNA" and "The Direction of Protein Synthesis by RNA." The following chapters by Gerald Medoff and Morton Swartz, "Structure of DNA" and "Enzymatic Synthesis of DNA," are presented in terms lucid for the biochemist, but portions may be difficult for a clinician. Sheldon Penman's accounts of "RNA Metabolism in Mammalian Cells" offers a contemporary summary of events in the processing of ribosomal RNA's and rightly emphasizes the new and unsolved problems, such as the function of the large polydisperse RNA of the nucleus and the role of 5 S RNA in ribosome structure. "Animal Virus Replication" by Donald Summers is a clear, incisive account of the methods and results of molecular virology. The final chapter, "RNA Metabolism in Embryogenesis" by Paul Gross, offers a superb introduction to problems of genetic control during differentiation and development.

Though there is some duplication of subject matter, the book is highly readable and makes a fine impression. It certainly succeeds in its attempt to present molecular biology to interested physicians, clinicians, and medical students and warrants a much wider audience.

V. G. Allfrey

Rockefeller University
New York, New York

Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability. Vol. 4: Biology and Problems of Health. Lucien M. Le Cam and Jerzy Neyman (eds.). Berkeley: University of California Press, 1967. 934 pp. $28.50.

The increasing use of mathematical languages and electronic computers in biomedical research is a matter of some interest—and perhaps of some concern—to investigators in the cancer research area. For those who are not familiar with this area but who would like to get some picture of what is going on, there is at present no readable introductory text. However, a judicious selection of about a dozen of the 56 articles in this massive 934-page symposium volume will give a fair idea of the worthwhile work in the area. Some of the articles (e.g., by Armitage and by Schneiderman) can be read by nonmathematicians, while others (e.g., by Neyman *et al.*) are informative even if the mathematical details are skipped over. For readers who might like to scan this material, I would recommend the articles which start on the following pages: 115, 147, 229, 349, 367, 511, 549, 657, 707, 745, 777, 791, 813, 855, 867.

Most of the above articles show how mathematical languages can be used to some advantage in a biomedical problem; many of the remaining articles show that mathematical languages are not an unmixed blessing. Unless mathematical language is firmly anchored in experimental realities, the results tend to be somewhat sterile—as in the articles on abstract epidemic theory. Worse yet, there are more than a dozen articles in this volume which are not only devoid of scientific value but proceed to make sweeping claims that are mythical, misleading, or outright false. A horrible example is an article by Bellman on "intelligent machines." He writes down a dozen abstract equations, and *ergo* "machines think." This is mathematical pseudoscience. It is usually not difficult to distinguish genuine science from pseudoscience in this area. Merely ask: Is the computer used in order to *say* something or in order to *do* something? In genuine research, *human* investigators use computers as a tool to avoid burdensome chores in carrying out arithmetic operations on actual data. In pseudoscience, computers "think" and "do" research. Publication of pseudoscience alongside genuine biomedical research confers respectability on pseudoscience and does a serious disservice to the health sciences.

Irwin D. J. Bross

Roswell Park Memorial Institute
Buffalo, New York

Cancer Chemotherapy. Medical Outline Series. Edward S. Greenwald. Flushing, New York: Medical Examination Publishing Company, Inc., 1967. 215 pp. $6.

There has long been a need for a textbook on cancer chemotherapy for the practicing physician. The paperback volume by Dr. E. S. Greenwald fulfills this need admirably. There is not too much emphasis on speculative or controversial matters nor is there an overemphasis on personal, limited experience, but rather this volume provides the reader with a critical review of the ever-expanding published work on clinical cancer chemotherapy. The bibliography is extensive yet critically selected. The recommendations are based upon the author's experience as well as familiarity with major published studies.

This book of 215 pages has an introductory chapter on the pharmacology of the useful cancer chemotherapeutic agents and major chapters on each of the frequently used drugs in clinical practice. Reference to new agents likely to be available to the practicing physician is also included, and there are special chapters on hormonal therapy, special problems in toxicity, and the chemotherapy of specific human malignancies.

This volume is heartily recommended to the practicing physician who wishes a compendium on this important clinical area.

Jesse L. Steinfeld

National Cancer Institute
National Institutes of Health
Bethesda, Maryland