this age, the text is thoughtfully written to prevent rapid obsolescence. For example, the book went to press just before the first convincing demonstrations that RNA splicing is required for production of mRNA in several mammalian systems. Nevertheless, the background for this finding is carefully developed in discussions on the relationship between cellular hnRNA and mRNA, and in the summaries of known details of viral mRNA production. In fact, the authors correctly predicted that the adenoviruses would be one of the most productive systems for clarifying precursor-product relationships in mammalian mRNA synthesis. In general, where significant controversy exists, the authors present a balanced view and try to indicate the experimental approaches most likely to lead to resolution of the issue. Another strong point is the thorough description of most virological methodology in frequent use today.

The one major deficiency of this text for some purposes may be the relative lack of emphasis on the overall effects of viruses on the host, especially in higher organisms. Thus, the nature of viral diseases and defence mechanisms in animals are given only summary treatment, while there are only hints of the importance of plant and insect pathogens for agriculture. Many students continuing their education in the biological sciences may encounter some of these topics in other specialised courses, depending on their interests; but some teachers may wish to supplement the text in these areas for the sake of providing greater appreciation of the more biological aspects of virology, to complement an otherwise complete introduction to the field. □

*P.C. Kimball is a Molecular Virologist working at the Ohio State University Cancer Centre, Columbus, Ohio.*

# Basic biology of malignancy

## Joseph R. Bertino

*Fundamentals of Oncology.* By Henry C. Pitot. Pp.192. (Marcel Dekker: New York, 1978.) $9.95.

THIS concise textbook, which stems from a course given at the McArdle Institute for Cancer Research at the University of Wisconsin, is directed toward non-physician scientists, undergraduate and graduate students, and postdoctoral fellows in the biomedical sciences. Actually,medical students would also find in the book a great amount of material not covered adequately in their courses in pathology and medicine.

Since the book is written by one author, the writing is consistent throughout, and the 12 chapters are all equally well done. The author writes in a lucid direct style, and is able to present the reader with the important aspects of each topic with sufficient definition and background so as to be easily digested. Each chapter is referenced; the student who wishes to read in more depth on a particular topic will find all of the key references. The titles of articles are included, so that although the text is not documented (which would diminish its readability) the appropriate references for each section can be found. The author is an experimental pathologist and biochemist, and I found the chapters on aetiology and pathogenesis of cancer, and the biochemistry of cancer especially well done. Since these chapters comprise most of the message, the book is very successful. Other textbooks may contain more information on specific topics, but none present so much information in such a well written, concise fashion.

The book does not cover topics such as cancer diagnosis or cancer treatment (chemotherapy, surgery, immunotherapy and radiation therapy), but the student who masters the material in this book will have the background to understand these more clinical topics.

In summary, this book is highly recommended for both undergraduate or graduate students as well as physicians who wish to know more about the basic biology of malignancy. □

*Joseph R. Bertino is American Cancer Society Professor of Medicine and Pharmacology at Yale University School of Medicine, New Haven, Connecticut.*

# History of biology

## Dov Ospovat

*A History of the Life Sciences.* By Lois N. Magner. Pp.489. (Marcel Dekker: New York, 1979.) $23.50.

LOIS MAGNER'S *History of the Life Sciences* was written as a textbook for undergraduate courses in history of biology (it does not pretend to encompass the history of medicine). The discussion effectively begins with the pre-Socratic philosophers and continues into the "post Watson-Crick period" in the study of genetics. Some 70 pages are devoted to ancient and mediaeval science and another 40 pages to the Renaissance and Scientific Revolution. Most of the remaining three-quarters of the book treats the development of embryology, cell theory, microbiology, physiology, and evolution from the seventeenth century to around 1900. Only in the last two chapters, both of which are concerned with genetics, is there any sustained discussion of twentieth-century biology. Scientific societies and microscopes are each accorded a brief chapter. There are some curious omissions. For instance, little attempt is made to relate seventeenth and eighteenth century biology to the Scientific Revolution. In the chapter on physiology Helmholtz is only mentioned, while Ludwig and Du Bois Reymond are completely ignored.

Magner's basic technique is as follows: under each chronological or subject heading, she discusses the individual scientists deemed to have contributed to the advance of biology. One result is that many key issues — such as the philosophical and religious concerns of seventeenth, eighteenth, and nineteenth century biologists, and the arguments amongst nineteenth century naturalists and physiologists over appropriate styles of explanation — are inadequately treated, in a piecemeal fashion in the biographical sub-sections.

The biographical approach is no doubt convenient for author and students. Likewise, because it conforms to the pre-conceived notions of most undergraduates, presenting science as progressing toward the present is perhaps the easiest way to teach the history of science. But since it is now pretty generally agreed that this is a wholly unsatisfactory way of understanding the past, it is strange to see it adopted as the organising principle of a new textbook.

Magner often seems to be interested chiefly in whether a scientist was 'progressive' or 'retrogressive', as defined by mid-twentieth century knowledge and attitudes. Thus we are told that "although preformation theory impeded progress in embryology, it had one virtue. Preformationists generally rejected spontaneous generation" (page 188); that La Mettrie "paved the way for more