

Cancer: Science and Society

by John Cairns
W. H. Freeman; San Francisco, 1978
xiv + 200 pages. £2.90 (softcover), £6.20 (hardcover)

The subject of cancer is not only one affecting the lives of many; it is also one in which a large number of biological and medical scientists are involved in some manner or other. This outstanding book has as its aim the education of both the interested lay public and students in the biomedical sciences in the current knowledge and status of non-clinical cancer research. This reviewer would add to this list of potential readers the many workers actually involved in some aspect of cancer research. It is such a diverse and multi-faceted set of disciplines that a unifying, readily readable text such as this performs the valuable function of reminding one of the depth and complexity of the cancer problem.

Many historical, cellular, viral, molecular biological (and particularly) epidemiological aspects of the subject are covered by Cairns. He has attempted to provide some basic background material (for example, on molecular genetics) to aid readers deficient in such areas, although even with such help the lay people shown the book by this reviewer found the more 'scientific' parts of the book by no means a straightforward read. The scientific reader will find the extensive bibliography of much use.

The brief, though non-trivial treatment of what Cairns terms 'experimental cancer research', is confined to two chapters, one concerned with essentially

(molecular) aspects of carcinogenesis and the other primarily with the transformed cell. Some would perhaps quarrel with over-emphasis of some topics and omission of others (such as fundamental cancer chemotherapy), but overall Cairns has achieved a satisfactory balance.

Probably the most interesting, and certainly the most controversial aspects of this book are those dealing with the 'social science' of cancer, where Cairns is not afraid to venture his own opinions, especially on topics such as the effectiveness or otherwise of public mass screening tests for certain forms of cancer. He is perhaps unduly pessimistic about improved prospects for treatment and rather too dismissive of the undoubted improvements in, for example, chemotherapy. The book closes with what amounts to a clarion call for cancer research to follow the straight and narrow path of the cell and molecular biologist. It is rightly cautious in being hesitant about pointing out new directions in cancer research.

The non-aloof style of the book, combined with Cairn's knowledge, authority and sense of perspective make it a genuine pleasure to read. It can be thoroughly recommended to a wide audience.

S. Neidle

Surfaces of Normal and Malignant Cells

Edited by R. O. Hynes
Wiley; Chichester, 1979
471 pages. £24.00

This is a well-produced book that is effectively in two parts. Eight of the twelve chapters are concerned with comparisons between the surfaces of normal and malignant cells. This first section covers cell mor-

phology, glycolipids, proteins and glycoproteins, mucopolysaccharides, surface membrane enzymes, proteolytic enzymes, and the immune response to C-type virus-induced tumours. According to the preface,

the book was conceived as a collection of related reviews in which collated data on normal cells would be compared with oncogenically transformed cells. The Editor has, however, successfully encouraged his contributors additionally to extrapolate from established facts to the discussion of hypotheses concerning the possible significance of the observations reported. This has not only increased the usefulness of the book: it has also made for more interesting reading.

The first eight chapters are well interrelated, and an initial chapter provides a general background for these articles. For those coming newly to the field, the introductory chapter also raises some important points (that are elaborated further in the individual chapters) regarding basic premises in cancer research, viz 'in attempting to obtain molecular explanations for the phenotype of transformed cells, which is difficult enough in itself, one must be aware that this is still at least one remove from an explanation of the tumour cell phenotype. On the other hand, if one does not

take advantage of the potential of tissue culture, useful molecular information about tumour cells is difficult to obtain'.

The remaining chapters are on early events in growth stimulation, surface components of erythrocytes, adhesive specificity among embryonic cells, and cell surface and development in *Dictyostelium discoideum*. The four articles are equally well written and interesting, and they have apparently been included to provide a context for the consideration of molecular changes in transformed cells. Some of the topics, in particular the erythrocyte membrane, have however been well covered in reviews published elsewhere.

I warmly recommend this book, which contains a wealth of well-documented information (up to 1977/78) that is carefully presented and thoughtfully discussed. It is both a good reference source and an interesting readable volume.

J. A. Lucy

Structure and Function of Biomembranes

Edited by K. Yagi
Japan Scientific Soc.; Tokyo, 1979
xi + 244 pages. \$46.00

As is explained in the preface by the Editor, who was the Congress President, this book records the proceedings of a Symposium held in Nagoya, Japan, in October 1977 during the First Congress of the Federation of Asian and Oceanian Biochemists.

The book is divided into four unequal sections, and it contains a total of 21 articles by distinguished contributors. As the individual chapters vary considerably in both style and length (from some 7–17 pages), it appears that some are essentially published versions of the symposium lectures, while others have been expanded to a larger format. There is no subject index.

The first section on membrane structure contains a chapter on the application of chemical and physical methods to studies on lipid–lipid and lipid–protein interactions, one concerned with the interactions of lysophospholipids with cell membranes, and one on

ligand–protein interactions and oxidative phosphorylation that really belongs in the final section of the book. In the second section (cell surface and biological function) there is a mixed bag of articles on amino acid and hexose transport in cultured cells, the chromaffin granule membrane, cell surface sugars, membrane proteoglycans, the extracellular regulation of matrix synthesis in chondrocytes, hepatic binding systems in the regulation of serum glycoprotein metabolism, and human histocompatibility antigens. The two articles in section three are on the biogenesis of the endoplasmic reticulum in liver, and membrane biogenesis in mutant mitochondria.

The final section is the only part of the book (approximately 100 out of 240 pages) in which there is a sufficient number of related articles to permit the chosen topic to be considered in any breadth. Here there are nine contributions devoted to various aspects