Book Reviews

Radiosensitizers of Hypoxic Cells. (Eds) A. Breccia, C. Rimondi & G. E. Adams (1979). Amsterdam: Elsevier/North-Holland Biomedical Press. 258 pp. $44.

This volume is based on the summer course “Mechanism of Action of Radiosensitizers of Hypoxic Cells In Vitro and In Vivo” held in August 1978 in Cesanatico, Italy. The organizers and publishers are to be congratulated that a clearly printed hardback volume was available well within the following year. Even “camera-ready” manuscripts are taking more than a year to publish after most conferences nowadays.

The book contains material on the following subjects:

—correlation between the chemical and structural properties of radiosensitizing drugs and their biological activity.
—pharmaco-kinetic properties of radiosensitizers, in biochemical and biological systems, as studied by polarographic, chromatographic, spectrophotometric and radiochemical methods.
—cellular aspects of sensitization in vitro and in vivo.
—clinical studies with hypoxic cell sensitizers.

The radiosensitizing agents which receive most attention are the nitroimidazole drugs Metronidazole and Misonidazole, but there are also chapters on the use of heavy particles and the influence of the kinetics of neoplastic cells.

During the course there were two days of experimental work at the University of Bologna which included Pulse Radiolysis, the technique (with rapid mixing) which provided the scientific basis for the use of electron-affinicon drugs as hypoxic cell-radiosensitizing agents. The technique enables identification of the hydrated electron which is one of the reactive species produced when aqueous solutions are irradiated. The ideal sensitizer should have as much electron affinity as oxygen, and the current thrust is to develop compounds which approach this property but, though not metabolized by hypoxic cells to the same extent as oxygen, are no more toxic.

This is a fast-moving subject, and has been the subject of an L. H. Gray Memorial Conference (see Supplement III, Vol. 37, 1978, of this Journal). The book would provide a useful introduction for new entrants to the field of drug investigation, since this radiobiological topic has led to one of the best coordinated research programmes in cancer therapy of the present decade, involving a multi-disciplinary approach from biology, physics and chemistry.

A. H. W. Niös

Antibody Production in Man: In Vitro Synthesis and Clinical Implications. (Eds) A. S. Fauci & R. Ballieux (1979). New York: Academic Press. 398 pp. US$18.00.

This book contains the proceedings of the Catharine Conference on Immunology held in Utrecht, Holland, in March 1978, on the subject of the induction and regulation of antibody synthesis by human lymphocytes, using in vitro model systems. The book contains 25 chapters, mostly in the form of research papers, and after each group of 3–4 papers there is a discussion section.

In recent years there has been rapid development of techniques for examining human lymphocyte function in vitro, and throughout the book much attention is paid to technical details, particularly concerning the plaque-forming cell (PFC) assay for mitogen and antigen-induced B-cell activation. The first chapter is an interesting review by Cooper in which normal B-cell differentiation is related to antibody-deficiency disorders. The remainder of the book is in 4 sections, the first 2 dealing with in vitro lymphocyte stimulation by polyclonal B-cell activators and antigens. B-cell activation was quantitated using the PFC assay (8 chapters) or by measuring immunoglobulin in culture supernatants (4 chapters). Much of the work presented is concerned with the requirement for helper T cells and the stimulation of suppressor T cells and soluble factors. The third section of the book contains 6 chapters on lymphocyte subpopulations regulating B-cell function in vitro, where the emphasis is
again placed on helper and suppressor T cells and soluble factors. There are also chapters on IgM receptors, on B-cell subpopulations, and the effects of hydrocortisone on T-cell subpopulations.

The final section of the book deals with in vitro B-cell function in various clinical conditions, mainly immunodeficiency and autoimmune disorders. In relation to clinical problems, concern was expressed over the possibility of potential artefacts when using in vitro systems and the danger of extrapolating from measurements on one cell population (usually peripheral-blood lymphocytes) to the body as a whole. However, in some systems, clinical disorders were apparently reflected in abnormal lymphocyte responses, and further work in this area should lead to a clearer understanding of these disorders at the cellular level.

The book contains 2 interesting chapters by Moretta et al. on the functional characteristics and clinical relevance of T-cell subpopulations, but unfortunately the position of these chapters has been reversed, so that the paper on clinical relevance is found in the section dealing with regulation of B-cell activation.

This book provides useful reading for those interested in human lymphocyte subpopulations and their in vitro activity.

M. R. Potter

Postgraduate Courses on Clinical Cancer Chemotherapy (2nd Edn). Manual for Course Participants. UICC Technical Report Series, Vol. 47. (Eds) S. Monfardini, K. Brunner, D. Crowther & D. Olive (1979). Geneva: UICC. SwF 30.

This small booklet in the technical report series of the UICC is a welcome update to the previous edition and a very useful addition to the already existing manual of clinical oncology. The text is a compilation of both data available in the literature and information from unpublished sources, incorporating the experience of the authors, who are all experienced clinical oncologists. As an introduction to the subject of cancer chemotherapy, the scope of this volume must be without parallel, but it should be emphasized that this is an introduction and should only be used as a complement to an integrated clinical course in oncology and the recent literature in the various subjects.

There are two major drawbacks to a publication of this sort. The first is the necessarily didactic nature of the work, which the authors have attempted to overcome by stressing, within the various subjects, the present areas of controversy. In addition there is a useful list of recommended publications for further reading at the end of the volume, which should provide a useful introduction to the available literature. The second drawback concerns the rapidly changing approaches to chemotherapy which any author in the field must face when contemplating a text of this kind. This requires much work and frequent additions and the authors are to be congratulated on the production of this second edition, with early publication after their series of recent meetings.

This text can be recommended without reservation to all trainee clinical oncologists, whatever their therapeutic specialty, and will prove to be particularly valuable to those who are starting their period of postgraduate training.

H. Bush

Avian RNA Tumour Viruses. (Eds) S. Barlati & C. de Guli Morghen (1978). Padua: Piccin Medical Books. 355 pp. $30.00.

The chicken has been in the fore of tumour virus research since 1911 when Rous established his famous eponymous sarcoma, and the many discoveries made in the avian system fully justify the present status of the chicken as an honorary mammal! In recent years avian tumour virology has been in a ferment of activity as the powerful techniques of molecular biology have been applied to an analysis of the virus-cell relationships worked out in the 1960s.

This book, which is the proceedings of an ICREW-EMBO workshop on avian RNA tumour virus research held in Pavia in 1977, provides an excellent review of the subject. Many of the papers, while presenting recent findings mainly of interest to the specialist, also provide valuable introductions to their topics which will interest the more general reader who wants to know more about the