Book Reviews

Cancer: A Comprehensive Treatise: 4. Biology of Tumours: Surfaces, Immunology and Comparative Pathology. Ed. F. F. Becker (1975). New York & London: Plenum Press. 439 pp. Price $45.00 net.

This volume, the fourth in a comprehensive treatise on cancer, is in fact the second of 2 volumes (nos. 3 & 4) devoted to the biology of tumours. It comprises 3 parts concerned respectively with the spread of tumours, immunology and comparative pathology, to which 17 authors have contributed a total of 12 articles. The first section on the spread of tumours consists of 3 chapters: the properties of the surfaces of normal and transformed cells are dealt with by J. C. Robbins and G. L. Nicolson, and contact inhibition by J. Pontén. I. J. Fidler contributes a chapter on mechanisms of cancer invasion and metastasis.

The second section, which is the largest, provides a comprehensive survey of contemporary knowledge of tumour antigens and the hosts' response to them, drawn from experimental models as well as clinical studies. L. W. Law and E. Appella discuss the properties of soluble transplantation and tumour antigens. Antigens expressed by virus-induced tumours are systemically analysed by T. Aoki and L. R. Sibal (Oncornaviruses) and S. S. and M. J. Tevethia (Oncodnaviruses) while aspects of the immunobiology and chemically induced tumours are examined by M. R. Price and R. W. Baldwin. Immunological surveillance against tumour cells is discussed by A. C. Allison. The final article in this section is contributed by S. H. Golub, and is a critical appraisal of human tumour immunology, with particular reference to the methodological difficulties which have beset the elucidation of tumour-immune phenomena in man.

The third section is devoted to the comparative pathology of cancer in animals, poikilothermics and plants. H. L. Stewart selects common human neoplasms of specific sites and compares them with neoplasms of similar sites in other species, and D. G. Scarpelli describes the distribution and characteristics of some common neoplasms in poikilothermics, and considers various actiological and biological perspectives, such as chemical carcinogens, viruses, immunity and neoplasia etc. Finally, A. C. Braun discusses the contribution which neoplastic diseases of plants have made as models for the study of basic cellular mechanisms underlying the cancerous state.

The general style and presentation of the diversified material in this book accords with its intended status as a text-book. As such, it should be readily accessible to experimentalists and clinicians working in the field. For some time there has been a need to bring together the vast amount of information which is the product of the exponential literature explosion of the last 15 years. Whether the comprehensive treatise, of which this volume is a part, has succeeded will depend on the coverage and quality of the series as a whole. As far as this volume is concerned, the increasingly important task of collation and interpretation in several complex fields appears to have been achieved with no small degree of success.

M. Moore

Mononuclear Phagocytes in Immunity, Infection and Pathology. Ed. R. van Furth. (1975). Oxford: Blackwell Scientific Publications. 1062 pp. Price £32.50 net.

This monograph constitutes the proceedings of the Second Meeting on Mononuclear Phagocytes held in Leiden, during the Autumn of 1973. The conference covered a wide variety of topics related to the defence mechanisms of the host. Several new developments, as well as a proposal for a new classification of diseases in which mononuclear phagocytes are involved, were reported, and the present volume comprises edited papers presented at the meeting by 66 contributors, together with the discussions which followed them.

The book is subdivided into 10 sections variously devoted to structure, origin and kinetics, phagocytosis, cell surface characteristics, biochemistry, phagosome-lysosome interaction, cell-mediated immunity, antibody formation, tumour immunity and
granuloma formation. The sections comprise 5–8 individual contributions on diverse but not infrequently interrelated topics, and this broad perspective enhances the usefulness, if not indispensability, of the volume as both a theoretical and practical reference text on most aspects of the Mononuclear Phagocyte System (MPS). This will apply, not least, to those whose prime interests like those of this reviewer are in Oncology and related spheres, where the MPS on host defences against neoplasia is attributed with an increasingly important role. In this context, the section on tumour immunity is particularly apposite. There are several papers on the cytotoxic or cytostatic properties of macrophages, contributed by authors responsible for the major advances in this area, (R. Evans, M.-L. Lohman-Mathes, R. Keller, J. S. Remington, J. B. Hibbs & R. Gallily) in which evidence is presented for both immunologically specific and non-specific killing. The mechanisms of killing are not elucidated, though in the majority of instances, non-phagocytic mechanisms appear to be involved. An important aspect of killing by “immune” macrophages is thought to be the attachment to the macrophage surface of products derived from immune lymphocytes. The nature of the latter is undecided, and the evidence that antibody is involved purely circumstantial. Contributions by Keller, Remington and Hibbs emphasize the emergence of non-specific mechanisms in tumour resistance analogous to those well established in anti-bacterial immunity. Activated macrophages capable of destroying various tumour cell types in vitro, possess, in addition, the ability to discriminate between normal cells and cells with abnormal growth characteristics. An in vivo counterpart of this property is considered to represent a form of host surveillance more primitive and basic than that ascribed to T lymphocytes.

There are many other papers, on more fundamental aspects of macrophages in immune responses, which are beyond the scope of this review. These include macrophage-lymphocyte interactions in immunity to infection, in the regulation of immune responses and antibody formation and in B and T lymphocyte transformation. Equally, there are many contributions which have a direct bearing on applied aspects of experimental tumour biology. The section on granuloma formation is relevant here, especi-