clearly define the place of progestogens in established disease, and MacDonald outlines the type of prospective study that will have to be done to answer the fundamental questions of clinical management.

The Endocrinology section has 11 individual scientific papers exploring different fundamental aspects of hormone-receptor research in this disease. The context and detail appears quite out of proportion to that in the other sections. Hutton's authoritative account of oestrogen metabolism in the post-menopausal woman restores the clinical balance of the endocrinology section.

The penultimate section on tissue culture gives an insight into the formidable problems still facing the cell biologist attempting to investigate cells of endometrial origin, and leads to a final section on New Approaches that offers the promise of chemotherapy and tumour markers common to so many solid tumours, but still much unrealized.

There are articles and ideas from this conference of interest and value to anyone involved in the problem of endometrial cancer, but this book will only be of value if approached very selectively.

R. D. Hunter

**The Radiobiology of Human Cancer Radiotherapy** (2nd Edn). J. R. Andrews. University Park Press, Baltimore. 591 pp. $39.50.

This is a comprehensive and profusely illustrated examination of the voluminous literature on radiobiology applicable to radiotherapy. It forms a text book as well as a reference volume. The subject matter is well-delineated into many physical and biological chapters, and these are intermingled to link different sections and ideas. The chapter lengths vary strikingly—from 2 pages for each of several chapters, to up to 50 pages for others. This reflects the varied amount of information available between subjects, and the author's preference for emphasis under the title of this book.

All radiobiological topics relevant to radiotherapy are covered, including new ideas such as hyperthermia, and a statement of contents is hardly necessary here. New radiobiologists will welcome the references to early review articles in almost every section of the book, and over 1,000 references are quoted. The depth of coverage in certain sections has been greatly increased over the first edition, e.g. in "cancer immunology" and "optimization in radiotherapy". This edition remains suitable for medical graduates reading for qualifications in radiotherapy and oncology, although the level at which the exposition is pitched inevitably varies (e.g. in the chapter on "cell populations"). The concern throughout for clinical relevance and limitations is revealed in such ways as commentaries on ethics (e.g. the use of multiple biopsies in kinetic studies) and in discussion of the approximations and uncertainties inherent in formulations of the NSD or CRE type.

This is a very comprehensive production, complete with prologue, epilogue, and a useful glossary of terms for the uninitiated. The inclusion of a chapter on "Human cancer radiotherapy and its implications for radiobiology" serves to remind working radio-biologists of some of the current problems that clinicians face, and of the need for appropriate models and approaches.

J. H. Hendry
J. V. Moore

**Human Lymphocyte Differentiation: Its Application to Cancer.** Eds. B. Serrou & C. Rosenfeld (1978). North-Holland Publishing Company. 432 pp. $56.75.

This book contains the proceedings of INSERM Symposium No. 8, held in Montpellier, France in March 1978. The symposium covered a very broad field, concerned primarily with subpopulations of lymphocytes in relation to lymphocyte development and lymphoid malignancies. The contributions are in the form of short research papers, with over 50 papers in a book of only 420 pages. The papers are in 7 sections, but the grouping is somewhat arbitrary; in many cases papers on similar topics appear in different sections.

The introductory section deals with animal systems for the study of T and B lymphocytes and stem cells, that may be applicable to human studies. This is followed by papers on the properties of human T and B lymphocytes, including several papers on the identification of T-cell subsets by a number of experimental procedures. One section of the book is devoted to the identity and properties of null cells, and contains papers on the K and NK
cytotoxic activity of lymphocyte subpopulations. Several authors report activity in more than one subpopulation, illustrating the heterogeneous nature of these cells. There are also sections dealing with gene expression of differentiation and substances modulating differentiation, such as thymus factors. The final part of the book is concerned with the study of tissue-culture cell lines as models of differentiation and the clinical application of experimental data including several papers on cancer immunotherapy.

Among the most interesting papers are those in which comprehensive surface-marker studies on leukaemic cells (Seligmann and Greaves) and lymphoid cell lines (Nilsson and Minowada) have enabled the authors to propose models for pathways of lymphocyte differentiation. Unfortunately these papers, which are of general interest, are placed in 3 different sections of the book.

This book is a report of what was clearly an interesting symposium attended by experts in the field, and provides an up-to-date summary of the research work of the participants. Owing to the very brief nature of the articles, the book is not suitable for those requiring an introduction to the subject. However, for those with interests in lymphocyte differentiation or lymphoid malignancies it provides interesting reading.

M. R. Potter

Haemopoietic Dysplasias (Preleukaemic States). Eds. M. Bessis & G. Brecher (1977). Berlin: Springer Verlag. 359 pp. §22.10.

The haemopoietic dysplasias, or "pre-leukaemias", have long attracted the interest of clinical haematologists. These syndromes are part of a grey area in haematology which encompasses not only syndromes which will eventually end in acute myeloblastic leukaemia, but also cases which appear similar, but have a different outcome.

This book, which consists of 22 original contributions by experienced workers, covers clinical data, experimental techniques and pathophysiology, and gives an overall view of the present state of the field. As each contribution is followed by a discussion, the areas of agreement (or lack of it), the orientation of future research, and the many questions that remain to be answered in this interesting subject are considered.

The contributions are grouped in 3 sections. The first deals with the characteristics of the syndrome, the clinical and haematological data, differential diagnosis, course of the disease and management of the patients. The problem of distinguishing between pre-leukaemia and early manifestations of acute myeloblastic leukaemia, are highlighted in the lively discussion that follows this section. This discussion is interesting not only for its practical importance with regard to decisions concerning treatment, but also for understanding the pathogenesis of leukaemia, the possibilities of clonal succession, regression and interactions between haemopoietic cells and their microenvironment.

The second section presents new laboratory techniques and special investigations. Several communications are concerned with marrow colony formation in culture, and its possible usefulness for diagnosis and prognosis both of the preleukaemic and the leukaemic processes. The patterns of cell proliferation and differentiation in vitro, the response to different stimuli, and some of the physical and functional characteristics of the colony-forming cells are reported. Electron microscopy and cytochemical studies allow the description of abnormalities in this syndrome. The significance of blood-group changes and altered antigenicity, known to occur in leukaemic cells and which can also be seen in preleukaemic states, is discussed.

The third section is concerned with aetiology and pathophysiology. Models of normal and abnormal haemopoiesis in humans are discussed at length, with emphasis on the size of the stem-cell pool and the self-replication and differentiation capacity of stem cells in different situations. Experimental leukaemogenesis in mice is the subject of 2 communications. The influence of several parameters on the replication of the radiation leukaemia virus is reported, and the susceptibility of cells of the lymphoid and haemopoietic tissues to its lymphoma-inducing action is examined. The experiments reported throw some light on the complex cell interactions that take place in the lympho-haemopoietic tissue.

This book should be of interest not only to haematologists but also to cell biologists involved in the experimental study of leukaemia, cell proliferation and differentiation.

N. G. Testa