protons and helium, carbon, neon and argon ions. The book is essentially an extended review of the large literature on the physical and radiobiological properties of these particles and their applications in radiotherapy. In the author's own words, "The objective of writing this book is to synthesize most of the available literature on the subject and to convey this information to readers of various backgrounds".

After 3 introductory chapters about basic radiobiology, the book consists of 5 chapters about each of the heavy particles listed, a chapter on comparison of heavy particles and an appendix outlining the radiobiological techniques on which the quoted data are based. The world-wide facilities for the study of heavy particles are listed in the appropriate chapters, together with quite detailed information about the physical interactions and the radiobiological parameters which describe their properties. These chapters also outline the clinical experience of treatments with the different particles. It may surprise readers to know that as many as 3000 patients have been treated with fast neutrons in various centres, in spite of which the ultimate value of neutron therapy in cancer treatment is by no means established. Large numbers of patients have also been treated with protons, the vast majority having received small-field irradiations of the pituitary, while treatments with the other types of particle are still at the preliminary stage. The chapters give very extensive references ranging in time from the first description of the Bragg curve in 1904 right up to 1979.

By way of summary it can be stated that protons, helium ions and negative pions can give superior dose distributions to those used in X-ray and electron therapy, but are likely to have little biological advantage over these radiations; neutrons may be able to compete in terms of dose distributions and have a "high LET advantage", while carbon, neon and argon ions may be superior on both counts. This conclusion is neatly summed up in a semi-quantitative way in a diagram in the last chapter of the book, which also makes a passing reference to the relative costs of the different types of treatment. It would have added greatly to the value of the book if the author had given more information about this aspect, as there is no doubt that the very heavy capital and operational costs of heavy-particle radiotherapy are highly relevant.

Dr Raju has fulfilled his objective as quoted in the opening paragraph of this review and has provided a handbook which successfully gives quick access to data and references about all aspects of heavy-particle radiotherapy. The book is well produced by a technique described as "rapid manuscript reproduction".

D. GREENE

Processes in Pathology: An Introduction for Students of Medicine. M. J. TAUSSIG (1979) Oxford: Blackwell Scientific Publications. 456 pp. £6.50.

A study of some standard immunology texts might suggest to the non-clinical graduate fresh to the discipline that the immune system exists in splendid isolation. This new book by Taussig, however, succeeds in providing not only an excellent introduction to immunology, but also an insight into the pathological sequelae of immune mechanisms.

There are separate sections dealing with inflammation, the immune response, the circulation, neoplasia and the genetic basis of disease, all of which are well presented with figures and tables which clarify and complement the text.

The result is a readable and relatively inexpensive book, which can be highly recommended as an introduction to immunology and/or experimental oncology.

I. KIMBER
M. MOORE

The Acute Leukaemias. T. F. NECHELES (1979) New York: Stratton Intercontinental Medical Book Corporation. 200 pp. \$14.75.

This is the first of a number of monographs devoted to topics related to clinical haematology, of which Dr Necheles is the series editor. These are intended for the trainee physician and non-specialist as well as paramedical personnel involved in the care of patients with blood disorders. The present volume gives an admirably lucid and concise account of the epidemiology, classification, natural history, diagnosis and treatment of the acute leukaemias, presented in a very readable style and with a comprehensive bibliography. It is true that most, if not all

this information is available from perusal of the major British and American text books of haematology, but the beginner will no doubt find this volume much easier to read and assimilate. The final chapter on future therapeutic prospects is valuable. One or two criticisms might be levelled: although much discussion of technical and research data has been deliberately avoided, it is difficult to comprehend the pathophysiology of leukaemia without at least a brief explanation of modern concepts of the haemopoietic stem cell. A short section on normal haemopoiesis would have been valuable, especially as there are scattered references to colony-culture studies and inhibitors of stem-cell growth elsewhere in the book. The black and white illustrations

of blood and marrow films on pages 10 and 11 are of rather indifferent quality. It is odd that in a book intended for those closely involved in the care of leukaemic patients, there is very little advice about the psychological aspects of management of this type of malignant disease; on the other hand, the chapter on chemotherapy is perhaps unnecessarily detailed for the junior physician, though certainly of value to the specialist.

These minor criticisms apart, the book can be warmly recommended to the trainee haematologist and oncologist. If succeeding volumes in the series are of the same standard, they should be assured of a receptive readership.

C. G. GEARY