from embryos or primordial germ cells show that the malignant phenotype results from a reversible change in gene expression.

Questions about the origin of the germ line, differentiation of the gamete, and sexual differentiation are examined in the second section. Reproduction and the germ line cells are considered for single sex chimeras by McLaren and for XX-XY mouse chimeras by Tarkowski, and aspects of sexual development are considered in the question posed by Ohno 'Why not androgynes among mammals?'.

The largest section is devoted to X chromosome inactivation, the mechanisms of X chromosome differentiation, and non-randomness of X inactivation. Papers are presented on enzyme studies, dosage effects, and studies of maternally and paternally derived X chromosomes and X autosome translocations. The final section covers mathematical and statistical analysis of mosaicism.

Although the majority of papers in this volume are devoted to studies in mice, the contents have much to interest those whose studies are restricted to humans. Experimental studies are possible on human cells in vitro and many of the intriguing questions posed by this volume have special relevance to the medical geneticist.

CHRISTINE GOSDEN

The Neutrophil: Function and Clinical Disorders

By S J Klebanoff and R A Clark. (Pp xxvii + 810; Figures + Tables.) Amsterdam, New York, Oxford: Elsevier/North Holland. 1978.

This is an excellent book; it contains almost 800 pages devoted to the structure and function of this single blood cell type. This book instantly becomes the major reference work, but such is the vast research literature published every year on the neutrophil and its related disorders that it will require regular revision to remain up to date. The references are up to Autumn 1977 and should provide a more than adequate basis for a comprehensive literature survey.

There is an ever increasing list of disorders related

to defective neutrophil function; some are inherited primary disorders but many more are secondary to a whole range of diseases. The neutrophil, for a brief passage from the bone marrow to the tissues, can be sampled and tested for its functional capacity, for its ability to adhere, to move randomly, to move in response to a chemotactic stimulus, to ingest, and to kill. The book is divided into two halves; the first half describes the normal structure and function of the neutrophil in terms of morphology, ultrastructure, and contents of granules, how the neutrophil moves in response to chemotactic stimuli and all the chemotactic factors released by the various mediators of inflammation, complement activation, Hageman factor activation, and those derived from cells.

There are excellent chapters on phagocytosis including factors affecting opsonisation, the basis for the metabolic burst occurring upon ingestion, and the way in which neutrophils actually kill micro-organisms.

The second half of the book is devoted to clinical disorders of neutrophil function. It begins with a short chapter relating these disorders to the orderly sequence of function, viz adherence, movement, phagocytosis, killing. It then devotes a long chapter to neutrophil dysfunction secondary to humoral deficiencies such as opsonising or chemotactic factors or inhibitors of these, and another to primary and secondary cellular defects. The final chapters are devoted to chronic granulomatous disease, myeloperoxidase deficiency, and the Chediak-Higashi syndrome. These latter inherited diseases are very rare, but much insight has been gained from studying their neutrophil function.

We are becoming much more aware of relative deficiencies of neutrophil function and these can cause a variety of common clinical syndromes as a result of compromised host defences and increased infections. This book provides a comprehensive review of existing knowledge and should stimulate much more research into those conditions which are related to defective neutrophil function.

It is to be highly recommended.

ROLAND LEVINSKY