dependent either on genes of major effect with simple patterns of Mendelian segregation, or on gross chromosomal abnormalities. Attempts to elucidate the genetics of more or less common disorders showing familial aggregation, but not explicable in simple Mendelian terms, have met with limited success, in spite of increasingly sophisticated techniques of analysis. Such analyses, and the conclusions derived from them, have not been of great clinical value and, more importantly, have not provided any clear guide to further research on aetiological mechanisms.

The discovery that genes in the HLA chromosomal region are of importance in determining susceptibility to a wide variety of conditions is therefore a landmark in clinical genetics. When, after the pioneer experimental work in mice, possible disease associations with the HLA system were sought, it was the lymphomas and leukaemias that were first investigated. However, the most clear-cut and striking associations have been found in other clinical fields, and in none more than in some of the rheumatic disorders.

In this volume, Derrick Brewerton has brought together a group of contributors to document progress in this field. Two excellent introductory chapters supply a background. Ekkehard Albert presents a clear account of the immunogenetics of the HLA system, and of the way phenotypic data can be analysed to provide gene and haplotype frequencies. William Paul outlines present knowledge of the ways in which genes in the major histocompatibility region might influence the immune response. Though this has not proved of immediate relevance to the HLA associations with rheumatic diseases, it certainly provides ample scope for speculation about the possible modes of action of HLA-linked disease susceptibility genes. The genetics of complement deficiency is covered by Shaun Ruddy who critically discusses the relation of C2 deficiency to connective tissue disorders. In a further introductory section, Arne Svejgaard and his colleagues list the possible ways in which HLA-linked genes may determine increased susceptibility to disease, and it is an inevitable result of the format of the volume that much of this is repeated several times in different sections. A useful further introductory chapter might have provided a critical discussion of the problems presented by the genetics of the rheumatic disorders, and of how the HLA associations can be interpreted and applied to these problems.

Successive chapters deal with ankylosing spondylitis, the arthropathies of inflammatory bowel disease, Reiter's disease, psoriatic arthritis, and arthritis as a reaction to infection. This group of disorders form a fascinating interrelated clinical and genetic group, and the association with HLA B27 has initiated what promises to be a very fruitful period of further research.

The way in which the association with HLA B27 has contributed to a clearer understanding of different clinical patterns of the arthropathies is well illustrated in chapters on arthritis in children by Jane Schaller, and seronegative peripheral arthropathies in general by Stephen Milazzo. In both instances the results of HLA typing in combination with careful clinical assessment have helped to delineate what are probably different aetiological entities. Peter Statsny describes recent interesting work in relation to rheumatoid arthritis. How important HLA-linked genes will prove to be in the pathogenesis of rheumatoid arthritis and systemic lupus erythematosus, neither of which shows any great degree of familial aggregation, remains uncertain. The data documented suggest that the relative risk for rheumatoid arthritis in Dw4 positive individuals is of the order of 7. Future work, including appropriate family studies and the investigation of the possibility of heterogeneity within this disease, will be of great interest.

It is very likely that the diseases considered in this volume are the result of interaction between various environmental factors and genetic predisposition. Further elucidation of the genetics will surely go hand in hand with an intensive investigation of possible environmental factors, so that the disease processes thereby induced will be better understood and possibly controlled. All those interested in this group of conditions and in the genetics of common disorders will find much of value in this volume.

J. C. WOODROW

Immunology for the Practising Physician

Edited by Jon R. Schmidtke and Ronald M. Ferguson. (Pp. viii + 160; Figures + Tables. US \$23.40.) New York and London: Plenum Press. 1977.

This volume represents the proceedings of a symposium on the occasion of the dedication of the new Metropolitan Medical Centre in Minneapolis, Minnesota. Immunology was chosen as the topic of the symposium since, as the preface somewhat sweepingly quotes: 'immunology is where medicine's fundamental issues—the basic understanding of disease, its diagnosis, cause and cure—will be decided. For it is the immune system that dictates how we react to or resist disease'. The contents include current concepts in immunology, mechanisms of antigen recognition, the role of T cells, description of immune complex disease, the role of chronic viral infections, transplantation immunology, tumour immunology and immunotherapy, immune deficiency and malignancy, and immunological surveillance of cancer. There is also a chapter devoted to 'Genetic control of immune

responsiveness: a dynamic interplay between genes, cells and molecules'. The symposium must have been an exciting occasion held in a city which has contributed much to the evolution of immunological thought. The authors have produced a number of interesting and sometimes provocative chapters, and the whole volume makes interesting reading. However, for the medical geneticist, *Essential Immunology* by Roitt, now in its 3rd edition, provides a more comprehensive and systematic study of immunology, while the eagerly awaited 2nd edition of Fudenberg's *Basic Immunogenetics* is soon to be published by Oxford University Press.

Perhaps one might paraphrase the quotation above: '*Immunogenetics* is where at least some of medicine's fundamental issues will be decided'.

R. HARRIS

Developmental Biology and Pathology. (Current Topics in Pathology.)

Edited by A. Gropp and K. Benirschke. (Pp. 208; 86 Figures. DM. 96; \$39.40.) Berlin, Heidelberg, New York: Springer-Verlag. 1976.

This volume was conceived at a Symposium on 'Control of Early Embryogenesis and Factors Responsible for Failure of Embryonic Development', held from 1 to 4 May 1974 in Travemünde, and sponsored by the Deutsche Forschungsgemeinschaft. It consists of a collection of 14 of the papers presented, and includes an article on 'Oocyte Maturation and Paternal Contribution to the Embryo in Mammals' by D. Szöllösi, a concise and heavily referenced review of a large amount of highly technical data. It also includes an article on 'Maternal Storage in the Mammalian Oocyte' by W. Engel and W. Franke, which reveals the gaps in our knowledge, and the marked species variation concerning RNA protein synthesis in the developing and fertilised oocyte. A paper by H. W. Denker on 'Formation of the Blastocyst . . .' provides an interesting review of the theories regarding differentiation, and one by Cecilia Lutwak-Mann on 'The Response of the Preimplantation Embryo to Exogenous Factors' re-emphasises the resilience of the embryo at that early stage. 'Embryo Transfer Technique and Action of Drugs on the Preimplantation Embryo' by H. Spielmann highlights the methodological shortcomings, and an article on 'Uterine Secretion Protein Patterns Under Hormonal Influences' by H. M. Beier reviews levels of progesterone and oestrogens in pregnant and pseudopregnant experiment animals. An article on 'Organ Culture in Teratology' by L. Saxén and his coworkers reveals the technique of organ culture as used to define the

mechanisms in teratogenesis. Three papers on chromosomal aspects, 'Experimental Heteroploidy in Mammals' by O. Bomsel-Helmreich, 'Autosomal Monosomy and Trisomy Causing Developmental Failure' by A. Gropp and his coworkers, and 'Chromosomal Abnormalities in Early Abortions' by J. G. Boué and A. Boué, form a useful review.

These reviews are generally heavily referenced and several contain details of the individual author's work, but no summary of the discussion which must surely have followed. However, this published symposium, in common with so many others, provides too little experimental detail for the individual working in this field, and not enough introductory and explanatory material for the new investigator or for those interested in bringing their knowledge regarding embryogenesis and embryopathy up to date. However, the number of referenced papers ought to provide good source material. Once criticism is of the editorial construction, particularly with the careless labelling of essential illustrations. For example, in labelling electron photomicrographs, the text refers to cortical granules abbreviated CG, while the photographs of the granules appear quoted as GC. In conclusion, this is a collection of interesting papers, which might well have been better published in a journal where they would receive wider dissemination to those specifically interested in the general topic.

K. M. LAURENCE

Le Polymorphisme Biochimique et Les Facteurs de Son Maintien

By Gérard Lucotte. (Pp. 59; Figures + Tables. \$12.74.) Paris: Masson. 1977.

This clear and manageable little book will be useful and interesting both to students (French speaking) and a wider audience. It is a concise summary of the literature on the selective mechanisms which may be involved in the maintenance of the so-called biochemical polymorphisms. The 'neutralist' hypothesis, which implicates random genetic drift rather than selection, is also covered, but is unfortunately less well explained, and one suspects this reflects the author's selectionist bias.

Each chapter is accompanied by an extensive bibliography, each reference with a full title. The lists of references are also subdivided under headings, so that the reader is given extra information about the content of the articles. It is, however, a great pity that the references mentioned in the text do not always appear in the bibliographies.

The first 2 chapters deal with the nature and extent of 'biochemical' polymorphisms, as detectable by