The first edition of Professor Clegg's little book published in 1968 soon proved a firm favourite as an introduction to modern human biology, and this second edition promises to be equally successful. Revised and brought up to date (over 70% of the bibliography has been published since the first edition), it follows the theme of its predecessor. Its first aim is to introduce important features of the population biology of man to those whose work requires a knowledge of structure and function of the human body. Its second is to illustrate human diversity for the general reader, to help him appreciate that there is more to human differences than meets the eye, and that such differences are of biological importance.

After a brief historical introduction sketching the trends in development of biological studies of man, the second chapter (accounting for almost half the book) sets out the genetic basis of human variation. Its first section on genes in individuals covers Mendel's laws, formation of germ cells, molecular genetics, modes of inheritance, the genetics of sex, linkage and crossing-over, genetic interactions, multifactorial inheritance, cytogenetics, and chromosome abnormalities. This is a remarkably clear introduction; for example, the author skates with precision on the dangerous ice of partial sex linkage, sex limited inheritance, and genetic interaction. The second section on genes in populations examines the genetical consequences of random mating, deviations from it, changes in gene frequencies in populations and the factors responsible for them, and the maintenance of genetic variability in populations, all briefly and clearly. So much for the principles; the next section examines a variety of characters one by one, summarising what is known of their genetics, from blood groups to IQ, and ends with some clear criticisms of incorrect views on race biology.

Chapter 3 concerns growth and aging. Growth in different tissues, measurement and control of growth, the effects of environmental factors, senescence and its causation, are all dealt with rapidly and efficiently, with most attention to adolescence. In the following chapter on the evolution of man the emphasis is mainly on the fossil evidence, and there is relatively little on present-day primates. There is a clear presentation of the features of the main hominid fossil groups, avoiding so much of the controversy attaching to the position of individual specimens, which comes down quite clearly in favour of a monophyletic origin of all varieties of *Homo sapiens*.

Chapter 5 deals with the intimate relationships that exist between man and the various environments in which he lives, human ecology and, particularly, nutritional, climatic, altitudinal, and biotic ecology. This leads naturally to the question 'how successful

an animal is man?'. This chapter is largely concerned with demography, population numbers and density, fertility and mortality, and population changes with time.

The final chapter on the future of man draws attention to the problems of expanding populations and limited resources, and the damage that is being done to the environment at all levels. Prospects for the future appear bleak, but Professor Clegg makes no apology for his pessimistic forecasts, for they are clearly argued and are important in that they dispel the complacency of the many who assume that with improved technology and careful economic management the standard of life of all people can be raised continually. It calls for a conscious effort to limit our economic and industrial activities, to take the difficult and, in many respects, unpleasant steps which are necessary to ensure the survival of our species.

There are a few small points at which criticism can be levelled; for example, an inadequate key to Fig. 6.4, an apparent loss of centromeres in meiosis in Fig. 2.1, the absence of an explicit statement on page 73 that it is only when a single locus is considered that Hardy-Weinberg frequencies become established in the first generation, and perhaps a too-ready acceptance of the isogenes in tribal Australia without considering the effect of sampling in the material from which they were drawn. One may question the statement that it was the success of the eugenics movement before the Second World War that held back development of human genetics, for it was rather its misapplication by the genetically uninformed which was responsible. But these criticisms are all minor, and though there is little medical genetic material in the book, it provides an excellent introduction to genetic principles in the second chapter. The book as a whole provides an excellent background on the biology of man against which the efforts and endeavours of medical geneticists can be viewed.

D. F. ROBERTS

Textbook of Human Genetics

2nd ed. By Max Levitan and Ashley Montagu.

Revised by Max Levitan (Pp. x + 1012;

Figures + Tables. £15.50.)

New York and Oxford: Oxford University Press. 1977.

Undergraduate textbooks of human genetics tend to fall roughly into two main categories. Firstly, those with a predominantly medical orientation, designed mainly for medical students, where the emphasis is on the more practical applications of knowledge.

They do not usually aim to be comprehensive, so that theoretical aspects are often kept to a minimum. Secondly, there are the more comprehensive texts designed to supplement a full lecture course in human genetics of at least one term, and where the appeal is mainly to science undergraduates. This book clearly belongs to the latter category, and of similar texts currently available, this is one of the best and most up to date in my opinion.

The first edition appeared in 1971 and this new edition retains the same overall organisation though much new information has been included, especially in the general areas of somatic cell genetics, biochemical genetics, and the application of genetic knowledge in the field of prevention through counselling and prenatal diagnosis. The book is divided into six parts: cytogenetics, Mendelism, methods of genetic inference (including segregation analysis), problems of multiple loci (including linkage), polymorphisms, and finally genetic counselling (including prenatal diagnosis). Thus, the arrangement is a little different from most conventional texts, and perhaps the emphasis is more on pedigree analysis and the more mathematical aspects of human genetics than in some other undergraduate texts, but it is nevertheless highly readable.

It is well illustrated and well documented, with over 2000 references, and each chapter concludes with a list of suggested exercises.

This is an attractive book and I would recommend it as a suitable text for an M.Sc. or intercalated B.Sc. course in human genetics.

A. E. H. EMERY

The Eukaryotic Chromosome

By C. J. Bostock and A. T. Sumner.

(Pp. viii + 520; Figures + Tables. US \$79.95;

Dfl. 195.00.) Amsterdam: Elsevier/North Holland. 1977.

The authors' aim in writing this book was to bring together in a compact, but comprehensive, form the current available information on the eukaryotic chromosome. They have succeeded admirably in their objective and have produced an excellent book.

The opening chapter gives a brief historical account of how the concept of the chromosome was developed in the late 1870s, ending with an exposition of contemporary knowledge, ideas, and problems. In the following five chapters, the DNA, RNA, and chromosomal proteins are described in terms of their structure, functions, and molecular interaction with each other. Other sections of the book cover the interphase nucleus and the mitotic and meiotic processes. Two separate chapters are dedicated to the polytene and lampbrush chromosomes. The substructure of chromosomes, as revealed by a variety of banding techniques, is discussed, together with the methods in use of locating genes and DNA sequences. The last two chapters deal with the mechanisms of damage and repair, concluding with an interpretation of the current hypothesis on the genetic function of the various DNA sequences, how these are organised, and the way in which the DNA is packaged in the chromosomes.

The book is pleasing to read and its presentation is of a high standard. An extensive list of references is given, so there is the opportunity to explore further into those subjects which are outside the speciality of the reader. In conclusion, this book can help to provide a broader spectrum of knowledge needed by many workers in the field of genetics, cytogenetics, and cell biology.

MARINA SEABRIGHT