clinically affected homozygotes. In contrast to the sex-linked G6PD deficiency, morphological studies of red cells show that the defect in heterozygotes for enzymopenic methaemoglobinaemia is distributed diffusely in the red cell population, which is in keeping with autosomal inheritance.

In summary, Dr. Tönz's monograph is a valuable addition to medical and genetic literature; it is excellently organized and illustrated, and the translation into English, though not entirely free from blemishes, has been well done on the whole.

J. V. DACIE

An Atlas of Mammalian Chromosomes. Vol. 2. By T. C. Hsu and Kurt Benirschke. (Pp. xx+200; 50 plates. Loose-leaf boxed. DM. 37.60. $9.40.) Berlin: Springer. 1968.

The second volume of this excellent atlas has now appeared, and in many ways is an improvement on the first. I still have two major points of criticism. First, that it would be most desirable and in line with zoological practice to give authorities for specific names. Second, and I think more important, the authors should stop using a variety of terms to describe the chromosomes, including terms of such doubtful validity as 'subtelocentric', 'subacrocentric'—what do these mean? A telocentric chromosome strictly has no short arms and a completely terminal centromere, and it is questionable whether such chromosomes really exist. Does a subtelocentric have less than no short arms? This is of course absurd, but I use it to illustrate the problems.

In a recent apologia in the *Mammalian Chromosome Newsletter* (Vol. 9, No. 4, September, 1968) Dr. Hsu recognizes both these problems. The first was apparently taken as a calculated risk; the calculation has not come off, so could we have the authorities for each proper name please! The second, Hsu agrees that there are problems with the terms used, and that these are both subjective and inaccurate; surely, therefore, the answer is not to continue to use all the terms available indiscriminately but to choose which terms are best and accurate, define them, and stick to them. Surely three are sufficient to describe chromosome morphology, especially when the karyotype is given for each species: these are 'acrocentric', 'submetacentric', and 'metacentric'. All the others are superfluous.

The cumulative index given in the present volume will be of great value as it builds up, and the authors are to be commended on the clearer and more uniform reproductions in the present volume. If future volumes continue to improve at the same rate, the final publication should be of great value to all mammalian cytogeneticists.

JOHN L. HAMERTON

Primer of Chromosome Practice. Plant and Animal Chromosomes Under the Microscope. By G. Haskell and A. B. Wills. (Pp. xv+180; illustrated+tables. 37s. 6d.) Edinburgh: Oliver & Boyd.

This little book is aimed primarily at students and teachers of biology requiring a brief and simple text on methods of chromosome analysis. The first part covers the essential theoretical background to plant and animal cytogenetics, the second part the various aspects of cytological techniques, and the third part some essentials of data presentation. It seems a great pity even in such an elementary handbook as this that only very brief mention is made to the techniques in common use today for the study of human and mammalian chromosomes, particularly as more workers are perhaps engaged in this field than even in the study of plant chromosomes.

Plates are generally not up to the standard which is expected with modern microscope and photographic methods. The book may be useful as an introductory manual for some biology students and teachers; it could, however, have been made much more useful.

JOHN L. HAMERTON

Elements of Medical Genetics. By Alan E. H. Emery. (Pp. ix+247; 44 figures+tables. 35s.) Edinburgh: E. & S. Livingstone. 1968.

Professor Alan Emery's short book on the elements of medical genetics follows a logical order, with chapters on history, the chemical basis of inheritance, chromosomes and chromosomal abnormalities, developmental genetics, inheritance in families, genetic factors in some common diseases, pharmacogenetics, population genetics and natural selection, radiation and human heredity, and genetics and the physician. It is clearly and simply written. New terms are well defined as they are introduced. The illustrations are by clear line diagrams. There is a good glossary. At the end of each chapter there are selected recommendations for further reading. Noteworthy chapters are those on pharmacogenetics, radiation genetics, and developmental genetics.

There are two aspects of the work, which might perhaps be improved in later editions. First, in the effort to avoid technicalities, some of the clinical examples are oversimplified. For example phenylketonuria is not (and must not be) treated by a diet containing no phenylalanine; porphyria is not a single entity; the site of coarctation of the aorta is not just after the main artery of the body leaves the heart; pyloric stenosis was not 'invariably' fatal until 1912. Second, some of the more difficult genetical concepts are perhaps treated too simply. The important concept of heritability is rightly introduced in the chapter on common diseases, but the earlier account of polygenic inheritance is probably insufficient to make this section on heritability readily intelligible.

This introduction will certainly stimulate many medical students to take an interest in genetics, and to realize that the relevance of genetics is not only to rare mendelian and chromosome abnormalities. The book should also appeal to a wider audience, including nurses and social workers.

C. O. CARTER