hybrid analysis and familial aggregation, to show the extent of genetic influence.

The third section is devoted to genetics. There are chapters on the blood groups, haemoglobins, and some plasma protein and enzyme polymorphisms, all of which clearly support the ethnohistorical hypothesis that the Black Caribs are primarily an Amerindian-African amalgam while the Creoles are an African-European hybrid group. The chapter on the abnormal haemoglobins finds no differences in fertility achieved by sickle cell carrier women compared with normal homozygous women. There is clear heterogeneity of the S gene frequency among the seven communities tested, and this appears to be associated partly with the level of malarial infestation. The implication is that selection is intensely rapid, or that migration cannot have been totally random with respect to abnormal haemoglobin, or that one’s ability to withstand the effects of malaria affects the decision whether to migrate and whither. The fertility data unfortunately take no account of the second parent nor of the duration of the union. The serogenetic characters allow exploration of detailed hypotheses of admixture. The final chapter in this section draws together the genetic and historical parts of the study. Founder effect, drift, and admixture are regarded as sufficient to explain the present genetic characteristics of the Black Caribs and of the heterogeneity that exists among their several communities. Not only does history help to explain the population’s genetic structure, but the genetic structure also clarifies the historical reconstruction.

From this remarkable and full study of the Black Caribs and their neighbours, the Creoles, a great deal is achieved—establishment of the extent of individual variation within each of the populations, the extent and pattern of the variation between communities with populations, how it varies from one characteristic to another, and how it relates to the ethnohistory. The study shows the improvement in depth of understanding that comes with multidisciplinary investigation by comparison with that obtained from each individual enquiry. There were four original objects: to estimate the admixture in the population, to measure genetic microdifferentiation, to elucidate the ethnohistory, and to understand the inheritance of complex morphological features. The first and third are largely attained, the second leads to a major outstanding question of how to account for the different heterogeneity between different groups of characters, while the fourth clearly calls for further enquiry. Yet despite the enormous amount achieved, the work should be regarded as the beginning rather than the end. One chapter that remains to be written is that on genetic disorders, for it is obvious that a clinical geneticist would find much of interest in this population. Another is on epidemiology, for the types of questions asked of the data so far collected could be expected to be equally profitable when asked of morbidity data. The nature of the breeding pattern of the population itself, giving multiple half sibs, provides an excellent opportunity for further analysis of quantitative data. But one essential requirement is missing, namely accurate documentation and registration. The book shows what has been achieved without this, and provides a model for initial studies of hybrid and transplanted populations in the future. How much more informative will the population be when this is available!

D F Roberts

Perinatal Epidemiology

This book is an attempt to provide a broadly based, overview of the results and methods of perinatal epidemiology. It originated from the perceived need for a contemporary and comprehensive text for students taking the Yale course in perinatal epidemiology. But its appeal is more widespread: it would be a very useful reference work for clinicians and epidemiologists alike, particularly for those working in the areas of obstetrics and paediatrics, but also for those in related disciplines, in particular medical genetics.

An important feature of the book is its division into two parts, of which the former describes the results of existing work, and the latter deals with methodological issues which could very profitably be taken into account by those planning future investigations. These two parts are deliberately kept separate, and rightly so, for they are conceptually quite distinct. No sense of a deleterious lack of continuity results. Indeed, the degree of cohesion generally is good, considering that such a book is necessarily a multi-author work.

It would be difficult to lay down boundaries for the ambit of perinatal epidemiology. Among genetically determined disorders evident at birth, only chromosomal abnormalities are dealt with in this volume. There are chapters on infertility and termination, but the form and quantification of the pattern of reproduction in whole populations are not dealt with. The book would be of use to the clinician who wished to plan a prospective investigation of...
the effect of some obstetric or paediatric intervention; however, the less scientifically rigorous but nonetheless often very valuable approach of retrospective analysis of large survey data bases gets little mention.

There are two criticisms of the first half of the book. Though the references cited are extensive, there are a number of omissions of valuable studies, particularly a number from Great Britain which have the great advantage of being truly population based. Also, the interpretation of two of the commonly studied antecedent factors, maternal age and parity, has not entirely adequately emphasised the extraordinary non-biological meaning of these apparently biological factors. In a population where effective birth control is practiced, they reflect the circumstances underlying the decisions of whether and when to initiate a pregnancy, as much as the direct effects of advancing age and reproductive history. Rightly has this area been termed 'epidemiological tiger country'.

Among the methodological issues addressed, there are two of crucial importance in the design of investigations: sample size requirements and power to detect associations, and the randomised controlled trial as the method of choice for evaluating different treatments or treatment policies. Hitherto many of the resources, human and financial, that have gone into medical research have produced a poor return of firm knowledge and much research has been carried out with little more than blind hope that the desired effect would be demonstrated. Proper application of the above principles would be the most important step investigators and those overseeing their work could take to ensure a reasonable anticipation of truly important results.

Readers of this review who specialise in medical genetics may feel these considerations apply much less to themselves than to those in other specialties. Many genetically determined disorders are so infrequent as to impose severe restrictions on sample size and hence statistical power obtainable. While it may not be possible to get around this problem, the consequent limitations on the interpretation of the results should not be ignored. And, while so far effective treatments for genetically determined disorders have been few, it can be anticipated that this situation may soon change as exact knowledge of the basic DNA defect and its biochemical mediation becomes available. The resulting therapeutic advances would need to be tested prospectively, just as in any other branch of medicine.

All in all, this book contains valuable information with a wide range of application.

ROBERT G NEWCOMBE

Laboratory Animal Medicine

This book is the most recent in a series compiled by the American College of Laboratory Animal Medicine. Previous volumes have dealt with each species but this one has amalgamated and updated those chapters concerning laboratory animal medicine. The book is intended primarily for the veterinary surgeon but there is much to interest others in biomedical research who use animals.

There are 26 chapters which cover the biology and diseases of mice, rats, hamsters, guinea pigs, rabbits, primates, ferrets, birds, amphibia, reptiles, and fish, as well as other less common species. There are also miscellaneous chapters on historical perspectives, law (USA), dogs, cats, ungulates, design and management of animal facilities, anaesthesia, analgesia and euthanasia, zoonoses, biohazards, techniques used in research, as well as a section on factors concerning husbandry and disease which can affect experimental results. Quality control, including genetic monitoring, is also covered, although the latter rather sparsely, and may therefore not be of great use to the more experienced geneticist.

The clinical content of the chapters is perforce directed towards diseases commonly seen in America but, sadly, like AIDS, sooner or later many seem to arrive in the UK. The section on analgesia was disappointing, as was that on laboratory animal allergy, which in UK surveys has been shown to affect up to 25% of staff. There seemed to be an unfortunate reluctance by our transatlantic colleagues to quote work published in Europe; thus Green's book Laboratory animal anaesthesia was not mentioned, nor were numerous publications on analgesia and biochemical genetic monitoring. Perhaps we are equally guilty!

The style and presentation is to the usual high standard of Academic Press with very good illustrations and a double column layout. Overall there are no other textbooks, as far as I am aware, which deal with such a range of material as this tome (750 pp) at this price (£42, probably now nearer £50) which makes it a valuable reference book. For the medical geneticist I would have recommended the more detailed chapters in earlier texts in the series, but for the veterinary surgeon associated with an experimental animal facility or the curator it will be extremely useful.