phrenics are of special interest, and if confirmed point to a high incidence of prenatal factors, possibly related to the cytochemical and cellular-metabolic abnormalities from time to time reported. Biochemically, it may be significant that the catecholamine dopamine is implicated in Parkinson's disease and that anti-psychotic drugs cause Parkinsonian symptoms and affect the action of catecholamines.

As regards modes of transmission, there is a need to formulate hypotheses in such a way that they are capable of refutation, rather than merely 'fit the facts' (although it may be noted that the recessive theory appears to be refuted by the high risk among patients' offspring, without having been entirely discarded). So far as offspring are concerned, two kinds of psychosis have been tentatively identified in children exposed to a psychotic parent: true micropsychoses, and folie à deux states which recover after separation from the parent (who is usually the mother) and tend to occur when the psychosis is reactive rather than process in type. This distinction, between process and reactive, or evoked, schizophrenia is taken up by several of the authors, and it will be important to develop standard criteria and reliable measuring instruments. Social stress could be one evoking agent, and the apparent increase of schizophrenic illnesses in some immigrant and minority groups is interesting and merits further work. Other lines of enquiry concern the frequency of non-schizophrenic disorders (the 'schizophrenic spectrum') in the relatives of patients, and the precise nature of the environmental differences in discordant pairs of monozygotic twins.

This is a generous, and in places, discursive book which some skilful editing and cross-referencing helps to hold together. There is an extensive reference author index which is very complete up to 1968/69, a carefully compiled subject index, and a useful glossary of both genetic and psychiatric terms. It seems sure to become a landmark in the literature of schizophrenia, and the reader who anticipates rapid progress in understanding the nature of this illness will put it down wiser, if also sadder. Illumination will almost certainly come, eventually, through an accumulation of small shafts of light rather than in a blinding flash.

D. W. K. KAY

Hermaphroditism, Genital Anomalies and Related Endocrine Disorders, 2nd ed. By Howard W. Jones and William Wallace Scott. (Pp. xvi + 564; illustrated. £14.00.) Edinburgh: Churchill Livingstone; Baltimore: Williams and Wilkins. 1971.

The title of this book indicates its scope clearly if it is understood that the term 'hermaphroditism' is used here in the general sense of intersexual disorder. This important subject is considered thoroughly in all its aspects and is clearly written and clearly illustrated throughout. The accent of the book is on clinical detail, with surgical treatment having a prominent place; cytogenetic, endocrine, and biochemical aspects are none the less dealt with appropriately as well. The only serious omission is that of transvestitism and transsexualism—a surprising

omission when one considers that the authors must have much useful information to share in this field. This apart, the book is thoroughly recommended to clinicians and others interested in the field of intersexual disorders and related endocrine abnormalities.

G. J. DEWHURST

Advances in Experimental Medicine and Biology.

Volume 27. *Drugs and Fetal Development.* Edited by Marcus A. Klingberg, Armand Abramovici, and Juan Chemke. (Pp. 599; figures + tables. US \$32.) New York and London: Plenum Publishing. 1972.

This is an expensive account of a rather inappropriately titled symposium. Only four or five papers deal with the effects of long-term drug usage, and this count depends on a generous interpretation of the word 'long'. The remaining contributions cover the classical fields and models of teratology. Many, particularly those from American contributors, have been published in more detail elsewhere. A notable exception is the contribution by R. L. Brent, and there is a valuable article on the incidence of variation and malformations in animals by A. K. Palmer. Although the dangers of speculation on the teratogenic effects of drugs are emphasized by one writer, who reminds us of their value and necessity in clinical medicine, many other authors are more self-indulgent. An article by I. D. G. Richards puts the risks in better perspective.

The volume will be of limited use to workers in the field of teratology who will already be familiar with most of the information to be found within it.

C. L. BERRY

Coefficients of Biological Distance. By T. S. Constandse-Westermann. (Pp. viii + 142; tables. Fl. 25.00.) Oosterhout, The Netherlands: Anthropological Publications; New York: Humanities Press. 1972.

Those who work with biological populations are usually well aware of the various procedures for assessing the degrees of similarity between samples, and recognize that for each method there are particular problems for which it is most relevant; for each there are drawbacks. Dr Constandse-Westermann, of the Institute of Human Biology at Utrecht, has for some time been engaged in teaching these apparently complex methods to students of medicine, biology, and anthropology. The problems of so doing, particularly when the class is non-mathematically trained, are indeed daunting. That is why she wrote this book.

In it she sets out in simple and straightforward language, amply illustrated by worked examples, the various procedures for calculating biological distance coefficients between human populations. She resists the temptations of phylogenetic tree building, discriminant analysis, cluster analysis, principal component analysis, and canonical analysis, so that apart from the setting out of the chosen methods, the text primarily covers their development, backgrounds, possibilities, and defects.

After an introduction to the symbols used and simple operations with matrices and vectors relevant to distance calculation, the main body of the book falls into three parts. The first deals with distance coefficients calculated from quantitative variables, starting with Czekanowski's 1909 introduction of the mean difference (DD) and the simple derivatives from it, then passing rapidly to methods involving squared differences, the coefficient of racial likeness, Penrose's C^2_H and Mahalanobis's D^2 , and subdivision of D^2 and C^2 into size and shape components. For each of these, examples are worked in full detail, and attention is drawn to the interrelationships between the various methods.

The second main section concerns distance coefficients calculated from qualitative variables. Since these are of rather more recent development, their presentation is not in chronological order, but by type of method. The first category covers coefficients based on squared differences between percentage of frequency values, the second those using the same principle as χ^2 , the third those coefficients by which the differences in percentages between populations are expressed in terms of the elements of the pooled dispersion matrix of all investigated groups (ie, corresponding to the calculation of D^2 for quantitative traits), and the fourth those based on angular transformations of the original percentages of frequencies. The third main part deals with methods of combining quantitative and qualitative variables into a single measure of distance.

This is not an easy book to read. English is clearly not the author's mother language. There is no index. Hierarchical methods would have been a logical inclusion. Academically it is doubtless useful to have the older methods set out so that readers can appreciate why the complexities of the modern methods are necessary. But in these days of modern computers, whereby work can be done in seconds which would have taken years of desk calculation, few will spend time applying these methods step by step, except perhaps in those centres where facilities are limited. But here perhaps is the main value of the book, for recourse to computer analysis should occur only when the methods themselves are appreciated for their merits and demerits, and for this the book is a valuable introduction. It is clearly presented and the examples are worked with thoroughness and accuracy.

D. F. ROBERTS

Human Embryology and Genetics. By F. Beck, D. B. Moffat, and J. B. Lloyd. (Pp. vi + 313; figures + tables. £4.25.) Oxford: Blackwell Scientific. 1973.

In the preface to this book the authors point out that it is intended primarily for undergraduates in the fields of medicine and human biology, and as such it joins a number of competitors covering comparable ground. In general the comparisons are favourable, but the inclusion of many topics has led to them being considered so briefly as to be of limited value.

There is an excellent introduction to human genetics

with a rather condensed account of aspects of nucleic acid biochemistry. It seems likely that this would be amplified by biochemical courses in most medical schools, and for this reason the short section on the biogenesis of gonadal hormones seems superfluous. Contraception is dealt with briefly, and a note on the therapy of infertility is included.

The chapters on conventional embryology are of a high standard, with good line drawings which supplement the text. The notes on malformations of various systems at the end of each chapter are unsatisfactory, in general no idea of the frequency or clinical importance of various defects is given, a defect not repaired in a final chapter on malformations and twinning. The chapter on post-natal development is good and rightly emphasizes this phase of human maturation.

The book is easy to read in its less condensed areas, and is well produced, with excellent cross-referencing. It is a good embryological text with useful information on other aspects of reproductive studies.

C. L. BERRY

Genetic Studies in Mental Subnormality. Part 1: *Familial Idiopathic Severe Subnormality: The Question of a Contribution by X-linked Genes.* By B. C. Clare Davison. Part 2: *The Application of Genetic Principles to Screening for Metabolic Disorders: The Leybourne Grange Survey of Mentally Subnormal Siblings.* By Peter N. Swift, Peter N. Benson, and John D. Studdy. (Pp. x + 82; figures + tables. £2.00; US \$3.35, inc. post.) Ashford, Kent: Headley Bros. for the Royal College of Psychiatrists. 1973.

This monograph is a most valuable study on genetic aspects of mental subnormality. The authors of both parts are to be congratulated on their concrete and biologically sound approach to a subject which is only too frequently treated with lamentable vagueness. It is also comforting to know that a further slice has been cut out of the large amorphous mass of conditions associated with subnormality of unknown origin, and attached to the smaller group with known aetiology and prospects of treatment and prevention.

In the first part, Dr Davison reports on investigations of 141 families in the area of the Oxford Regional Hospital Board. In each of these there were two or more severely defective individuals with an IQ of 50 or less. They were not suffering from any condition of known aetiology associated with subnormality. In 50 of these families males only were affected, in 20 females only, and in 71 both males and females were affected. An analysis of the data from various aspects provides evidence which is compatible with a major contribution by X-linked genes to severe subnormality. It is probable that these genes account for a considerable proportion of the hitherto unexplained excess of males among severely retarded patients. In studying the survey one misses an attempt to classify the cases apparently caused by X-linked genes into entities or groups, according to clinical and other signs. Secondly, the validity of some of the dermatoglyphic arguments could be disputed, but these are both