

BOOK REVIEWS

Human Heredity

The Genetics of Human Populations. By L. L. Cavalli-Sforza and W. F. Bodmer. Pp. xvi+965. (W. H. Freeman: San Francisco and Reading, November 1971.) £10.

THE rapidly emerging concepts and methodology of current genetic inquiry have tended to polarize its associated literature into highly specialized texts (usually of multiple authorship) requiring a depth of biochemical and/or mathematical preparation which, for ordinary scientific minds at least, is increasingly incompatible with a true understanding of the implications of genetics for human society.

This scholarly two-author textbook is written with the intention of providing a comprehensive and understandable treatment of the genetics of human populations for a relatively divergent and unsophisticated audience of biological scientists. The consistency of its organization and the clarity of its content provide adequate confirmation of the attainment of their goal. It is probably the most complete and definitive reference available today. Certainly it is remarkable that so wide a field as human heredity could be encompassed in such detail.

In a textbook as extensive as this (965 pages) it was surprising to find so few minor imperfections. Misspelled words, improperly labelled figures and other similar plagues besetting the text writer are rare. Thus, an impression of careful attention to detail is created along with the associated implication of similar patient endeavour in the formulation of the information content.

The twelve chapters are diverse in their subject matter and, although the juxtaposition of data is sometimes startling, it usually is illuminating, especially in the discussion of mechanisms whereby genotypic effects are expressed in the phenotype.

Considerable personal, and to my knowledge, unpublished data have been integrated by the authors in appropriate sections of the text. Summary sen-

tences and intelligently structured and "worked example" problems provide a unique device for maintaining interest. I found the chapters on "Transient and Balanced Polymorphism", "Polymorphisms for Blood Groups, Transplantation Antigens and Serum Proteins: Incompatibility Selection", "Genetic Demography and Natural Selection", and "Population Structure" exceptional.

Although data from a variety of disciplines are used, no unduly specialized knowledge seems required. The "general" reader, however, may be thwarted by the complexity of the algebraic expressions, should he choose to follow the solution of worked examples which conclude several of the chapters.

The final section of the book includes three appendices. Appendix 1 is a limited introduction to the elements of statistics and probability, and was the source of my only unfavourable impression. I can best define it as excess baggage. Surely, the average reader will already have mastered statistical theory and methodology at this level of presentation.

Appendix 2 is a stimulating and unique condensation of newer approaches to segregation and linkage analysis in human pedigrees and the estimation of gene frequencies. With the addition of substantive material, it could be quickly expanded into a valuable independent text.

Appendix 3 consists of eighty-one questions taken from a final examination at Stanford University. I would challenge all who consider this text from the perspective of ascertaining its relevance to their current degree of genetic sophistication to undertake first self-evaluation by use of the examination questions.

In short, I can honestly state that this is a fine book. It was a pleasure to read it and to enjoy it as a stimulating companion. The tables, charts, and graphs are readily understood and additive to the value of the written component. The subject matter provides a balanced interaction of mathematical theory and

empirical information. I would not hesitate to recommend it highly to anyone seeking an integrated understanding of human population genetics.

H. TURNER

Irradiated Water

The Radiation Chemistry of Water. By I. G. Draganic and Z. D. Draganic. Vol. 26. Pp. xi+242. (Academic: New York and London, 1971.) \$14; £6.55.

THIS monograph may be considered as a follow-up to A. O. Allen's classic book *The Radiation Chemistry of Water and Aqueous Solutions* (1961). The eight chapters cover the history, primary processes, reducing radicals, oxidizing radicals, radical yields, diffusion kinetic models, techniques and dosimetry.

Overall the book is a relatively compact assessment of the radiation chemistry of aqueous solutions in which the presentation of the data is ordered so as to emphasize the fundamental processes occurring in irradiated water. Each chapter is preceded by a short summary, an excellent idea that could well be used more generally. The authors' treatment of the history of the subject has a certain personal flavour but not so much so that it will be too unpalatable to the majority of those in the field. As a general introduction to the subject for students and those seeking background knowledge I would recommend this book as an adequate, clear and well produced volume. When one considers this as a specialized textbook in physical chemistry, however, its drawbacks are more serious. Radiation chemistry ceased to be an end in itself some time ago and its potential as an investigative tool in most branches of chemistry is being realized increasingly by those in the field. Appreciation of just what radiation chemistry techniques can do is, unfortunately, not so widespread outside the field and it is in covering this area