BOOK REVIEWS AND NEWS

Recensioni e Rassegna Bibliografica / Analyses de Livres et Revue Bibliographique / Buchbesprechungen und Literaturschau

THE DISTRIBUTION OF THE HUMAN BLOOD GROUPS AND OTHER POLYMORPHISMS

Second Edition

By A.E. Mourant, Ada C. Kopeć, Kazimiera Domaniewska-Sobczak. Published by Oxford University Press, London-New York-Toronto 1976. A volume in the serie, Oxford Monographs in Medical Genetics. Hard cover with jacket, 22 × 28 cm, XV + 1055 pp, 36 maps. Price: £ 55 net in U.K.

Landsteiner's discovery of the ABO blood groups in 1900 proved to be of great practical value in medicine because of its fundamental impact in the field of blood transfusion. Since then, a number of other blood group systems were found to operate in man, and increasing evidence was collected on their inheritance, mechanisms of action, possible interactions, and distribution. Blood group systems were soon found to be very useful markers to differentiate human populations in genetic terms, because of their complete genetic conditioning, known mechanisms of inheritance, and phenotypic stability throughout life. As such, they came to be largely preferred to the classic anthropological markers (colors, forms, body measurements, etc.). Although more impressive, in fact, the latter could not be easily controlled, not being determined by simple genetic mechanisms and being variously subject to environmental influences.

It is in the early fifties that Dr. Mourant first attempted to review the work till then carried out on blood groups and their distributions in human populations. By the time his book was published (Blackwell 1954 — first edition of the present Oxford monograph), a total of ten independent systems of blood groups had been described: ABO (1900, by Landsteiner); MN (1927, by Landsteiner and Levine); P (1927, by Landsteiner and Levine); Rhesus (1940, by Landsteiner and Wiener); Lutheran (1945, by Callender and Race); Kell (1946, by Coombs, Mourant, and Race); Lewis (1946, by Mourant — but previous observation by Ueyama in 1939); Duffy (1950, by Cutbush, Mollison, and Parkin); Kidd (1951, by Allen, Diamond, and Niedziela); Diego (1954, by Levine et al. — but full description by Layrisse et al. in 1955). Mourant's 1954 book could thus include fairly exhaustive distribution tables for all of these systems, excluding Diego, which had only just been described. However, the evidence till then collected on the distribution of the most widely studied system, the ABO system, in the most varied human populations and subpopulations, was much too large to be included extensively in that very same book. A second book was therefore planned and a few years later published by Dr. Mourant and his colleagues, specifically devoted to *The ABO Blood Groups* (Blackwell 1958).

Both the 1954 and the 1958 books have long been a basic reference tool for anyone interested in anthropology and the genetics of human populations. In the meantime, however, an impressive amount of new information was being accumulated, so that many were hoping that a new edition would sooner or later show up.

The Distribution of the Human Blood Groups and Other Polymorphisms, assembling the information derived from over 3,000 papers on a total of 67 genetic polymorphisms, now comes to fill this gap. It may be safely assumed that no one could have ever hoped in anything similar. The joint effort of Dr. Mourant and his colleagues, and of the Oxford University Press, has resulted in the production of one of the most fundamental instruments for any anthropologist or population geneticist for years to come; a work that will

long remain a classic, whatever the rhythm of accumulation of new data may be.

The book essentially consists of four parts: (1) discoursive chapter; (2) tabular material; (3) reproduction of the 1958 detailed ABO Blood Groups Distribution Tables; and (4) maps. The first 13 chapters provide a general introduction on the application of Mendelian characters to population studies and a detailed review of the history, genetics, technical aspects, and distribution, for each of the various systems (ABO; MNSs; Rhesus; Lutheran and Kell; ABH and Lewis; Duffy, Kidd, Diego, and other blood group systems; plasma proteins; red cell enzymes; hemoglobins; and other biochemical polymorphisms). Chapter 13 is then devoted to gene frequency calculations with an useful addition on computer calculation techniques.

The second group of chapters, 14 through 26, provides a geographic approach, whereby the distribution for the various systems is examined in detail for the main populations of the different areas of the world (Northern and Central Europe; Southern Europe; Near East: Arabs and Jews; North Africa; Afghanistan and the Indian region; South-East Asia; Eastern, Central, and Northern Asia; Australasia; Africa south of the Sahara desert; indigenous peoples of America; migrant and hybrid populations). In chapter 25 a synthesis is attempted, and in chapter 26 some recent discoveries are reported.

The central part of the book is devoted to the tabular presentation of the data with respect to a total of 67 genetic polymorphisms (1-10, major blood groups; 11-35, other blood groups; 36-49, genetic markers in plasma; 50-64, red-cell enzymes; 65-67, other genetic markers). For each table, the following data are usually provided: place, population, authors and numbered reference to bibliography, number of individuals tested, number observed for each phenotype, gene frequencies, chi square or other criterion for the goodness of fit of gene frequencies, and additional information. The tables are followed by a bibliography of 3,179 numbered references.

In the third part of the book, the 1958 ABO Blood Groups Distribution Tables are reproduced. The original maps are however not included, having been completely superseded by the maps given in the final section of the present volume. This includes a total of 36 maps visually showing the distribution of the various systems in the different areas of the world. Out of these, 16 are devoted to the ABO system; 5 to the MNSs system; 5 to the Rhesus system; 2 each to the Kell-Sutter and the Kidd systems; and 1 each to the haptoglobin plasma protein system, the Gc plasma protein system, the 6-phosphogluconate dehydrogenase red-cell isoenzyme system, the phosphoglucomutase red-cell isoenzyme system, the adenylate kinase red-cell isoenzyme system, and the adenosine deaminase red-cell isoenzyme system.

An index section of 40 pages, subdivided into subject, population, and author index, completes this volume, the splendid production of which is just a very suitable aspect for a most fundamental research tool.

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THE PRINCIPLES OF HUMAN BIOCHEMICAL GENETICS

Second Revised and Enlarged Edition

By H. Harris (London). North-Holland / American Elsevier, Amsterdam and New York 1975. Vol. 19* in the series, Frontiers of Biology. Paperback, 15 × 22.5 cm, XVII + 473 pp, illustrated. Price: US $ 20.50.

When Professor Harris' excellent book was first published five years ago, the review that appeared on this journal (Acta Genet. Med. Gemellol. 21: 277) concluded with the following remark: « ... this book may have only one disadvantage: due to the extremely fast accumulation of information ... a new edition might become necessary every new year. » The amount of new information that this second edition contains (although the general structure of the book has remained essentially the same) now comes to indicate that this forecast was basically correct, while at the same time suggesting that a third edition may also soon prove necessary. The book provides a general review of the subject by dealing with the following topics: Gene mutations and single aminoacid substitutions; One gene-one