

Preface

The first edition of *Human Genetics, Problems and Approaches*, was published in 1970 by human geneticists Friedrich Vogel and Arno Motulsky as sole authors. The aim was broad coverage and in-depth analysis of both medical and human genetics with an emphasis on problems and approaches with occasional historical comments. This point of view was fully explained in an introductory chapter of the three previous editions (1970, 1976, 1997). The book acquired an excellent reputation as an advanced text of human genetics and has been translated into Italian, Japanese, Russian, Chinese, and Portuguese. Our general aims for the fourth edition remain similar and together with novel developments are now set out in the Introduction of this new fourth edition.

Around 2004/2005, both Friedrich Vogel and Arno Motulsky, as well as the publishers, felt that the book should be continued with a new fourth edition in the same spirit and coverage as earlier editions, but should now include additional expert authors. After some delay and the death of Friedrich Vogel in the summer of 2006, a new editorial team consisting of Michael R. Speicher of the Medical University of Graz, Austria, Stylianos E. Antonarakis of the University of Geneva Medical School, and Arno G. Motulsky of the University of Washington School of Medicine, was constituted for the fourth edition of the Vogel/Motulsky book in the spirit of the original work.

An outline of the fourth edition's contents was developed and various internationally known geneticists, including the new editors, were selected to write the individual chapters. The resultant titles are listed in the table of contents. Most chapters are entirely new, while only three chapters (1, 5, and 6) utilize the third edition with appropriate, up-to-date revisions. Entirely new chapters include the description of the human genome, epigenetics, pharmacogenetics, genetic epidemiology, human evolution, genetics of mental retardation, autism, alcoholism and other addictions, consanguinity and related matters, gene therapy, cloning and genetic aspects of global health. Multiple chapters of various animal models used in the study of human and medical genetics are novel as are Databases and Genome Browsers as well as Databases Used in Human and Medical Genetics. The final content of the book was the result of many e-mails and conference calls. This new, updated, and totally revised edition does not contain some important and historically interesting chapters on certain topics. These can be found in the third edition of the book published in 1997, which was exclusively authored by F. Vogel and A.G. Motulsky. These topics were: enzymes in Chap. 7 (pp. 258–299); mutation rates in Chap. 9 (pp. 393–413); and mutation induction by ionizing radiation and chemicals in Chap. 11 (pp. 457–493).

The staff of Springer was most helpful in giving us extensive and firm aid in getting the book finished. We thank particularly Doris M. Binzenhöfer-Walker for her work during the early stage of the project and Isabella Athanassiou for her efficient help later. Andrea Pillman was a strict task mistress, who encouraged us to finish the book expeditiously.

The editors of the fourth edition want to express their intellectual indebtedness to Friedrich Vogel for having conceived of and played a major role in the first three editions of this book. Arno Motulsky particularly misses his discussions with Friedrich on human genetics and its role in science and medicine.

The cover illustration portrays a marble statue of Asclepius, the Greek god of healing, grasping a serpent-encircled staff as a symbol of medicine. The double helix of DNA joined to Asclepius symbolizes the applications of basic genetics to medicine.

4th edition
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Michael R. Speicher, Graz
Stylianos E. Antonarakis, Geneva
Arno G. Motulsky, Seattle