Progress In Population Genetics And Human Evolution

#population genetics #human evolution #genetic research #evolutionary biology #human genetic diversity

Explore the significant progress in population genetics and human evolution, detailing how scientific advancements are continually deepening our understanding of human origins, genetic diversity, and the evolutionary forces shaping our species. This field provides critical insights into our past, present, and future genetic landscape.

Progress in Population Genetics and Human Evolution

This book is devoted to the collection, interpretation and analysis of population genetic data. Among the topics included here are studies on human evolutionary history, molecular techniques for generating data, statistical and computational techniques for the interpretation of such data, and stochastic models for genealogy and population structure. The chapters reflect the close interaction between experimental molecular biologists and theoreticians. The book will be useful for specialists in the area, as well as mathematicians, statisticians, computer scientists and biologists wanting a brief overview of current problems in the field.

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Population Genetics Research Progress

Population genetics is the study of the allele frequency distribution and change under the influence of the four evolutionary forces: natural selection, genetic drift, mutation and gene flow. It also takes account of population subdivision and population structure in space. This book presents the latest research in the field from around the globe.

The Journey of Man

Around 60,000 years ago, a man, genetically identical to us, lived in Africa. Every person alive today is descended from him. How did this real-life Adam wind up as the father of us all? What happened to the descendants of other men who lived at the same time? And why, if modern humans share a single prehistoric ancestor, do we come in so many sizes, shapes, and races? Examining the hidden secrets of human evolution in our genetic code, the author reveals how developments in the revolutionary science of population genetics have made it possible to create a family tree for the whole of humanity. Replete with marvelous anecdotes and remarkable information, from the truth about the real Adam and Eve to the way differing racial types emerged, this book is an enthralling, epic tour through the history and development of early humankind.

Gene Genealogies, Variation and Evolution: A primer in coalescent theory

Authored by leading experts, this seminal text presents a straightforward and elementary account of coalescent theory, which is a central concept in the study of genetic sequence variation observed in a population. Rich in examples and illustrations it is ideal for a graduate course in statistics, population, molecular and medical genetics, bioscience and medicine, and for students studying the evolution of human population and disease. It is also an invaluable reference for bioscientists and statisticians in the pharmaceutical industry and academia - ;Coalescent theory is a central concept in the study of genetic sequence variation that probabilistically describes the genealogy relating the sampled sequences. In this text, besides fulfilling the glaring need for such a book, the authors present this theory in a straightforward and elementary manner and describe the statistical and computational methods used in modelling and analyzing genetic sequence variation. Rich in examples and illustrations the book covers basic concepts, complications arising from geographical structure and recombination before considering aspects of statistical inference based on these models. The book ends with chapters on Gene Mapping, which combines sequence variation data with phenotypic data (such as disease) to define areas of the genome where genes are responsible for the trait, and Human Evolution, a research area that is experiencing a renaissance due to the enormous amounts of data produced in molecular studies. Authored by leading experts, this seminal text presents a straightforward and elementary account of coalescent theory, which is a central concept in the study of genetic sequence variation observed in a population. It is highly suitable for a graduate course in statistics, population, molecular and medical genetics, bioscience and medicine and students studying the evolution of human population and disease, and will be an invaluable reference for bioscientists and statisticians in the pharmaceutical industry and academia - ;an excellent and timely book that should appeal to a variety of people in genetics and applied mathematics. - Professor Montgomery Slatkin (Berkeley);the authors are outstanding experts in the field, and the book is topical and timely. - Professor David Balding (Imperial College);Hein, Schierup and Wiuf have written the first general book on the coalescent. It is an engaging combination of clear mathematical derivation and real data examples. - Professor Joe Felsenstein (University of Washington)

Human Evolutionary Genetics

"Now in full color, this new edition of Human evolutionary genetics has been brought up-to-date with the many advances and discoveries made since the publication of the highly regarded first edition. The focus of the book is human genetic diversity: the mechanisms that generate it, how we study it, its implications in evolution, and its implications today. It will be an invaluable resource for anyone studying human evolution, genetic variation, population genetics, and biological anthropology"--

Human Population Genetics

Introductory guide to human population genetics and microevolutionary theory Providing an introduction to mathematical population genetics, Human Population Genetics gives basic background on the mechanisms of human microevolution. This text combines mathematics, biology, and anthropology and is best suited for advanced undergraduate and graduate study. Thorough and accessible, Human Population Genetics presents concepts and methods of population genetics specific to human population study, utilizing uncomplicated mathematics like high school algebra and basic concepts of probability to explain theories central to the field. By describing changes in the frequency of genetic variants from one generation to the next, this book hones in on the mathematical basis of evolutionary theory. Human Population Genetics includes: Helpful formulae for learning ease Graphs and analogies that make basic points and relate the evolutionary process to mathematical ideas

Glossary terms marked in boldface within the book the first time they appear In-text citations that act as reference points for further research Exemplary case studies Topics such as Hardy-Weinberg equilibrium, inbreeding, mutation, genetic drift, natural selection, and gene flow Human Population Genetics solidifies knowledge learned in introductory biological anthropology or biology courses and makes it applicable to genetic study. NOTE: errata for the first edition can be found at the author's website: http://employees.oneonta.edu/relethjh/HPG/errata.pdf

Population Genetics and Microevolutionary Theory

The advances made possible by the development of molecular techniques have in recent years revolutionized quantitative genetics and its relevance for population genetics. Population Genetics and Microevolutionary Theory takes a modern approach to population genetics, incorporating modern molecular biology, species-level evolutionary biology, and a thorough acknowledgment of quantitative genetics as the theoretical basis for population genetics. Logically organized into three main sections on population structure and history, genotype-phenotype interactions, and selection/adaptation Extensive use of real examples to illustrate concepts Written in a clear and accessible manner and devoid of complex mathematical equations Includes the author's introduction to background material as well as a conclusion for a handy overview of the field and its modern applications Each chapter ends with a set of review questions and answers Offers helpful general references and Internet links

History Within

Personal genomics services such as 23andMe and Ancestry.com now offer what once was science fiction: the ability to sequence and analyze an individual’s entire genetic code—promising, in some cases, facts about that individual’s ancestry that may have remained otherwise lost. Such services draw on and contribute to the science of human population genetics that attempts to reconstruct the history of humankind, including the origin and movement of specific populations. Is it true, though, that who we are and where we come from is written into the sequence of our genomes? Are genes better documents for determining our histories and identities than fossils or other historical sources? Our interpretation of gene sequences, like our interpretation of other historical evidence, inevitably tells a story laden with political and moral values. Focusing on the work of Henry Fairfield Osborn, Julian Sorell Huxley, and Luigi Luca Cavalli-Sforza in paleoanthropology, evolutionary biology, and human population genetics, History Within asks how the sciences of human origins, whether through the museum, the zoo, or the genetics lab, have shaped our idea of what it means to be human. How have these biologically based histories influenced our ideas about nature, society, and culture? As Marianne Sommer shows, the stories we tell about bones, organisms, and molecules often change the world.

Genes, Fossils, and Behaviour

While the basic pattern of hominid evolution is well documented, the recent evolutionary history of homo sapiens is less clear. Application of molecular genetics techniques has great potential for resolving issues over this period, but as the complexity of such data increases, the quantitative methods used for its analysis are becoming more important. This phase is also one of the richest for biological and behavioural evidence derived from both fossils and archaeology. The book will contain expository and state-of-the-art research contributions from experts in these diverse areas, covering data and its interpretation, and experimental and analytical techniques.

Ancestors in Our Genome

Geneticist Eugene Harris presents us with the complete and up-to-date account of the evolution of the human genome.

Introduction to Population Genetics

Making the theory of population genetics relevant to readers, this book explains the related mathematics with a logical organization. It presents the quantitative aspects of population genetics, and employs examples of human genetics, medical evolution, human evolution, and endangered species. For an introduction to, and understanding of, population genetics.

Human Evolutionary Genetics, Second Edition

Now in full-color, the Second Edition of Human Evolutionary Genetics has been completely revised to cover the rapid advances in the field since publication of the highly regarded First Edition. Written for upper-level undergraduate and graduate students, it is the only textbook to integrate genetic, archaeological, and linguistic perspectives on human evolution, and to offer a genomic perspective, reflecting the shift from studies of specific regions of the genome towards comprehensive genomewide analyses of human genetic diversity. Human Evolutionary Genetics is suitable for courses in Genetics, Evolution, and Anthropology. Those readers with a background in anthropology will find that the streamlined genetic analysis material contained in the Second Edition is more accessible. The new edition also integrates new technologies (including next-generation sequencing and genome-wide SNP typing) and new data analysis methods, including recent data on ancient genomes and their impact on our understanding of human evolution. The book also examines the subject of personal genomics and its implications.

Current Developments in Anthropological Genetics

This volume examines the interrelationship of ecology, subsistence pat terns, and the observed genetic variation in human populations. Hence, the book is divided conceptually into the following categories: nonhuman primates, hunters and gatherers, nomads, swidden agriculturalists, peas ant farmers, religious isolates, and modern and urban aggregates. While many of these populations have experienced (and are experiencing) ac culturation as a result of contact with technologically more advanced groups, the genetic structures described in this volume attempt to recon struct the traditional patterns as well as genetic changes because of con tact. Most chapters also integrate biological (genetic), social, and de mographic data within an ecological frame thus presenting a holistic view of the population structures of ecologically distinct groups. The first chapter examines the body of early nonhuman primate lit erature that emphasized ecological determinism in effecting the popula tion structure of our primate ancestors-relatives. It also examines more recent literature (since 1970) in which it became apparent that greater flexibility exists in primate social structure within specific environmental frameworks. Thus, it appears that our nonhuman primate evolutionary heritage is not one of ecological determinism in social organization but one of flexibility and rapid change suggesting the evolutionary success of our species is based upon a system of flexibility and that social ad aptations can be accomplished in a number of diverse ways.

A Genetic and Cultural Odyssey

"L. Luca Cavalli-Sforza has changed the way we understand human genetics and culture. Drawing links between genetic and cultural development, Cavalli-Storza has made groundbreaking discoveries in the evolution of Homo sapiens, prehistoric migration, and the origins of human differentiation. Based on interviews with his colleagues and analyses of his work, Stone and Lurquin's biography, the first on the scientist, offers a portrait of Cavalli-Sforza's life and ideas."--BOOK JACKET.

Human Population Genetics

In order to celebrate the work of pioneer population geneticist Haldane (1892-1964), especially in India, geneticists, anthropologists, clinicians, and statisticians met for an international conference in Calcutta, December 1992. The 22 papers presented include a review of Haldane's work, and discus

Human Evolutionary Genetics

Human Evolutionary Genetics is a groundbreaking text which for the first time brings together molecular genetics and genomics to the study of the origins and movements of human populations. Starting with an overview of molecular genomics for the non-specialist (which can be a useful review for those with a more genetic background), the book shows how data from the post-genomic era can be used to examine human origins and the human colonization of the planet, richly illustrated with genetic trees and global maps. For the first time in a textbook, the authors outline how genetic data and the understanding of our origins which emerges, can be applied to contemporary population analyses, including genealogies, forensics and medicine.

Population Genetics

Population genetics is the mathematical investigation of the changes in the genetic structure of pop- ulations brought about by selection, mutation, inbreeding, migration, and other phenomena, together

with those random changes deriving from chance events. These changes are the basic components of evolutionary progress, and an understanding of their effect is therefore necessary for an informed discussion of the reasons for and nature of evolution. It would, however, be wrong to pretend that a mathematical theory, depending as it must on a large number of simplifying assump tions, should be accepted unreservedly and that its conclusions should be accepted uncritically. No-one would pretend that in the event of disagreement between observation and mathematical prediction, the discrepancy is due to anything other than the inadequacy of the mathematical treatment. The biological world is, of course, far too complex for the study of population genetics to be simply a branch of applied mathematics, so that while we are concerned here with the mathematical theory, I have tried to indicate which of our results should continue to apply in a context wider than that in which they are formally derived. The difficulties involved in the joint discussions of mathematical and genetical problems are obvious enough. I have tried to aim this book rather more at the mathematician than at the geneticist, and for this reason a brief glossary of common genetical terms is included.

The Evolution of Theodosius Dobzhansky

This volume not only offers an intellectual biography of one of the most important biologists and social thinkers of the twentieth century but also illuminates the development of evolutionary studies in Russia and in the West. Theodosius Dobzhansky (1900-1975), a creator of the "evolutionary synthesis" and the author of its first modern statement, Genetics and the Origin of Species (1937), founded modern Western population genetics and wrote many popular books on such topics as human evolution, race and racism, equality, and human destiny. In this, the first book devoted to an analysis of the historical, scientific, and cultural dimensions of Dobzhansky's life and thought, an international group of historians, biologists, and philosophers addresses the full span of his career in Russia and the United States. Beginning with the reminiscences of his daughter, Sophia Dobzhansky Coe, these essays cover Dobzhansky's Russian roots (Nikolai L. Krementsov, Daniel A. Alexandrov, Mikhail B. Konashev), the Morgan Lab (Garland E. Allen, William B. Provine, Robert E. Kohler, Richard M. Burian), his scientific legacy (Scott F. Gilbert, Bruce Wallace, Charles E. Taylor), and his social, political, philosophical, and religious thought (Costas B. Krimbas, John Beatty, Diane B. Paul, Michael Ruse). Originally published in 1994. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Human Population Genetics

This book combines recent information and discoveries in the field of human molecular biology and human molecular evolution. It provides an interdisciplinary approach drawing together data from various diverse disciplines to address both the more classical anthropological content and the current more contemporary molecular focus of courses. Chapters include a history of human evolutionary genetics; the human genome structure and function; population structure and variability; gene and genomic dynamics; culture; health and disease; bioethics; future.

Genomes, Evolution, and Culture

"This splendid compendium ... will be the standard reference work for years to come: a handbook to browse, to consult, to look things up in, and to read with pleasure, wonder and post-Darwinian exhilaration." —Richard Dawkins "This is a marvellous book… It should be in every university library - preferably in several copies - and every reader of this journal should add it to their next grant application. It really is that good... I have already found this book to be invaluable… For many years to come, these two volumes will be the starting point for anyone wishing to find out about virtually any subject relating to human genetics… Any scientist working on humans or other animals will find many things in these pages that will stimulate, inform and inspire. The authors, editors and publishers are to be congratulated for their work… order a copy now!" —HUMAN GENETICS "The publishers and editors deserve to be congratulated for publishing this major book which coincides with the 200th anniversary of the birth of Charles Darwin. The book is well-timed, with biologists, theologians and sociologists engaged in intense debate on the Darwinian Theory on the origin of species, evolution and natural selection… There is little doubt that this marvellous publication should be in the library of universities and academic

institutions dealing with basic and applied biology research and education… It will not be surprising if the individual academic or researcher decides to invest in this resource and enrich their personal collection of leading books in genetics and genomics." —GENOMIC MEDICINE A Unique Collection of High-Quality Articles – Derived from the Acclaimed Encyclopedia of Life Sciences The revolution in human molecular genetics which has taken place over the last three decades has yielded a wealth of information not only on the structure and function of our genes, but also on gene expression, mutation and polymorphic variation. Over the last five years, the focus has moved from genes to genomes. Even though the annotation of our ~30,000 genes is still in progress, genome-wide studies have already yielded abundant evidence for the signatures of past selection and adaptive evolution within human gene sequences. Further, the completion of the sequencing of the 3 billion base-pair human genome, coupled with the increasing availability of other vertebrate genome sequences, has ushered in a new era of comparative genomics. We are now able to identify many of the molecular events (from the chromosomal level down to the single base-pair) that have occurred during vertebrate, mammalian, primate and hominid evolution. Indeed, the detailed comparison of the human and chimpanzee genomes has begun to reveal some of the genetic changes that have been involved in the development of human lineage-specific traits. We are thus acquiring the ability to ask searching questions about our origins, about the demographic processes associated with the global radiation of humankind, as well as some of the unique adaptations that make us human. Evolutionary biology has become so broad that its impact may be felt across the spectrum of the biological sciences. The aim of the Handbook of Human Molecular Evolution is relatively straightforward: to bring together under the same cover the many and varied strands of our knowledge of human/primate/vertebrate molecular evolution. Hence, the 282 chapters that comprise this essential reference work have been thematically arranged into twelve sections, covering the whole scope of research into human molecular evolution: General Concepts in Evolutionary Genetics Mutation, Adaptation and Natural Selection Evolutionary and Population Genetics Human Evolution Human Genome Evolution Evolution of Human Gene Structure and Function Evolution of Gene Expression Mitochondrial Genome Evolution Chromosomal Evolution Comparative Genomics Evolution and Disease Susceptibility Analysis of Ancient DNA This conceptual outline informed the selection of the chapters themselves and the connections between them. Some of these chapters are intended to be introductory, aimed at undergraduates and non-specialists. They provide basic information and a list of recommended further reading to encourage the reader to explore a topic in more depth. This approach helps the student reader progress from textbook material to primary literature. Some chapters are overviews that address topics of broad interest and importance, while others focus on quite specialized topics. These chapters are written for postgraduate students and research workers; they contain more detailed information and key references allowing the reader to investigate a specific area in more depth. This format allows professionals to use the books as a quick reference source. The chapters are richly supplied with website information to allow access to relevant data sources over the internet. The self-contained, peer-reviewed articles in this unique handbook have been written by leading scientists in each field. Key topics include the evolution of enzyme function, the use of nucleic acid divergence as a "molecular clock\

Handbook of Human Molecular Evolution, 2 Volume Set

Our understanding of human evolution is proceeding at an unprecedented rate over the last years due to spectacular fossil finds, reconstructions based on genome comparison, ancient DNA sequencing and new insights into developmental genetics. This book takes an integrative approach in which the development of the human embryo, the evolutionary history of our body, the structure of human populations, their dispersal over the world and their cultures are examined by integrating paleoanthropology, developmental biology, comparative zoology, population genetics and phylogenetic reconstruction. The authors discuss questions like: - What do we know about ancient humans? - What happens in the development of an embryo? - How did we manage to walk upright and why did we lose our hair? - What is the relationship between language, migration and evolution? - How does our body respond to the challenges of modern society? In addition to being a core text for the study of the life sciences, Human Evolution and Development is an easy-to-read overview for the interested layperson.

Human Evolution and Development

Self-contained and reader-friendly, this volume provides a balanced blend of evolutionary theory, population genetics, and systematics with an emphasis on the experimental approach.

Population Genetics and Evolution

Explores the differences and similarities of historical and evolutionary approaches to investigating and interpreting the past. The 11 papers were presented at the Spring Systematics Symposium in Chicago, May 1989. They discuss philosophy and methodology, and such topics as the history of evolution and the evolution of history. Paper edition (unseen), $16.95. Annotation c. by Book News, Inc., Portland, Or.

History and Evolution

Evolutionary selection has been radically relaxed in the human species as a result of the development of civilization, science in general, and medicine in particular. While these advances have hugely benefited current populations, they have to a significant degree released the species from the biological process which created it and maintains its viability. Formerly, natural selection took place largely as a result of differential mortality, but now that most people survive well beyond their child bearing years, selection is determined largely by differential fertility. Aside from genetic illnesses, this new selection is also characterized by a negative correlation between fertility and intelligencethe core of eugenic concern for over a century. Eugenics views itself as the fourth leg of the chair of civilization, the other three being a) a thrifty expenditure of natural resources, b) mitigation of environmental pollution, and c) maintenance of a human population not exceeding the planets carrying capacity. Eugenics, which can be thought of as human ecology, is thus part and parcel of the environmental movement. Humanity is defined, not as the totality of the currently living population, but as the number of people who will potentially ever live. This is a book about the struggle for human rights and parental responsibility.

Future Human Evolution

Fisher established mathematical population genetics and his "fundamental theorem of natural selection" which is the rate of increase in fitness of any organism at any time is equal to its genetic variance in fitness at that time.

The Genetical Theory of Natural Selection

Provides a concise, accessible introduction to the principle ideas, methods, and caveats for understanding evolution at the molecular level.

A Primer of Molecular Population Genetics

Are humans unique? This simple question, at the very heart of the hybrid field of biological anthropology, poses one of the false of dichotomies--with a stereotypical humanist answering in the affirmative and a stereotypical scientist answering in the negative. The "study "of human biology is different from the study of the biology of other species. In the simplest terms, people's lives and welfare may depend upon it, in a sense that they may not depend on the study of other scientific subjects. Where science is used to validate ideas--four out of five scientists preferring a brand of cigarettes or toothpaste--there is a tendency to accept the judgment as authoritative without asking the kinds of questions we might ask of other citizens' pronouncements. In "Human Biodiversity, "Marks has attempted to distill from a centuries-long debate what has been learned and remains to be learned about the biological differences within and among human groups. His is the first such attempt by an anthropologist in years, for genetics has undermined the fundamental assumptions of racial taxonomy. The history of those assumptions from Linnaeus to the recent past--the history of other, more useful assumptions that derive from Buffon and have reemerged to account for genetic variation--are the poles of Marks's exploration.

Natural Selection in Human Populations

Die-cut pages through which bits of a monster are revealed are designed to help a child control nighttime fears of monsters.

Human Biodiversity

Cover -- Title -- Copyright -- Dedication -- Contents -- List of tables -- List of boxes -- List of appendices -- Foreword -- Acknowledgements -- Prologue -- 1 Introduction and context -- PART I Human evolution -- 2 Synoptic view of human evolution via natural selection -- 3 Human evolution: beyond the physical -- PART II Economic progress -- 4 Population growth and economic progress: pre-industrial through the 1940s -- 5 Progress since 1950 and the emerging challenges -- PART III Understanding and tackling

evolutionary failure -- 6 The idea of evolutionary failure -- 7 Addressing evolutionary failure: the way forward -- Epilogue: hope for humanity -- References and further reading -- Index.

Heredity and Evolution in Human Populations

Evolution since Darwin: The First 150 Years comprises 22 chapters and eight shorter commentaries that emerged from a symposium held in November 2009 at Stony Brook University, USA. Thirty-nine authors from 22 universities and two museums in five countries write on areas of evolutionary biology and related topics on which their research focuses. Their essays cover the history of evolutionary biology, populations, genes and genomes, evolution of form, adaptation and speciation, diversification and phylogeny, paleobiology, human cultural and biological evolution, and applied evolution. The volume summarizes progress in major areas of research in evolutionary biology since Darwin, reviewing the current state of knowledge and active research in those areas, and looking toward the future of the broader field.

Evolution

Non-Aboriginal material.

Human Evolution, Economic Progress and Evolutionary Failure

Genes, Culture, and Human Evolution: A Synthesisis a textbook on human evolution that offers students a unique combination of cultural anthropology and genetics. Written by two geneticists---including a world-renowned scientist and founder of the Human Genome Diversity Project---and a socio-cultural anthropologist. Based on recent findings in genetics and anthropology that indicate the analysis of human culture and evolution demands an integration of these fields of study. Focuses on evolution---or, rather, co-evolution---viewed from the standpoint of genes and culture, and their inescapable interactions. Unifies cultural and genetic concepts rather than rehashing nonempirical sociobiological musings. Demonstrates that empirical genetic evidence, based on modern DNA analysis and population studies, provides an excellent foundation for understanding human cultural diversity.

Evolution since Darwin

This textbook shows readers how models of the genetic processes involved in evolution are made (including natural selection, migration, mutation, and genetic drift in finite populations), and how the models are used to interpret classical and molecular genetic data. The material is intended for advanced level undergraduate courses in genetics and evolutionary biology, graduate students in evolutionary biology and human genetics, and researchers in related fields who wish to learn evolutionary genetics. The topics covered include genetic variation, DNA sequence variability and its measurement, the different types of natural selection and their effects (e.g. the maintenance of variation, directional selection, and adaptation), the interactions between selection and mutation or migration, the description and analysis of variation at multiple sites in the genome, genetic drift, and the effects of spatial structure.

The Role of Natural Selection in Human Evolution

Providing an introduction to mathematical population genetics, Human Population Genetics gives basic background on the mechanisms of human microevolution. This text combines mathematics, biology, and anthropology and is best suited for advanced undergraduate and graduate study.

Genes, Culture, and Human Evolution

Genetics and Evolution of Infectious Diseases is at the crossroads between two major scientific fields of the 21st century: evolutionary biology and infectious diseases. The genomic revolution has upset modern biology and has revolutionized our approach to ancient disciplines such as evolutionary studies. In particular, this revolution is profoundly changing our view on genetically driven human phenotypic diversity, and this is especially true in disease genetic susceptibility. Infectious diseases are indisputably the major challenge of medicine. When looking globally, they are the number one killer of humans and therefore the main selective pressure exerted on our species. Even in industrial countries, infectious diseases are now far less under control than 20 years ago. The first part of this book covers the main features and applications of modern technologies in the study of infectious diseases. The second part provides detailed information on a number of the key infectious diseases such as malaria, SARS, avian flu, HIV, tuberculosis, nosocomial infections and a few other pathogens that will be taken as examples

to illustrate the power of modern technologies and the value of evolutionary approaches. Takes an integrated approach to infectious diseases Includes contributions from leading authorities Provides the latest developments in the field

Elements of Evolutionary Genetics

**** The first edition (1980) is one of the 10 titles on quantitative genetics/population genetics cited in BCL3. For upper-level undergraduates and beginning graduate students with some background in genetics and population biology. Contains nine chapters with illustrations, boxed examples and problems. Annotation copyrighted by Book News, Inc., Portland, OR

Human Population Genetics

Genetics and Evolution of Infectious Diseases