

Population Genetics And Microevolutionary Theory

The Evolution and Emergence of RNA Viruses Migration and Colonization in Human Microevolution A Century of Parasitology Tempo and Mode in Evolution Perspectives in Ecological Theory Quantitative Genetics Human Population Genetics Concepts of Biology Tears of the Cheetah Evolution An Introduction to Population Genetics Microsatellite Markers A Primer of Molecular Population Genetics The Adaptive Landscape in Evolutionary Biology Neurospora Migration and Colonization in Human Microevolution Evolution and the Genetics of Populations, Volume 2 Principles of Population Genetics Population Genetics in Forestry Genetics and Evolution of Infectious Diseases Population Genetics and Microevolutionary Theory Microevolution Rate, Pattern, Process Biology 2e The Evolutionary Synthesis Macroevolution Biology for AP® Courses Analytical Techniques in the Oil and Gas Industry for Environmental Monitoring Exam Prep for: Population Genetics and Microevolutionary Theory The Neutral Theory of Molecular Evolution Population Genetics and Evolution Avian Molecular Evolution and Systematics Plant Evolution Evolution From Molecules to Men Coalescent Theory Fundamentals of Mathematical Evolutionary Genetics Evolution An Introduction to Population Genetics Theory Human Population Genetics and Genomics Evolution in Changing Environments Philosophy of Biology

The Evolution and Emergence of RNA Viruses

Biology for AP® courses covers the scope and sequence requirements of a typical two-semester Advanced Placement® biology course. The text provides comprehensive coverage of foundational research and core biology concepts through an evolutionary lens. Biology for AP® Courses was designed to meet and exceed the requirements of the College Board's AP® Biology framework while allowing significant flexibility for instructors. Each section of the book includes an introduction based on the AP® curriculum and includes rich features that engage students in scientific practice and AP® test preparation; it also highlights careers and research opportunities in biological sciences.

Migration and Colonization in Human Microevolution

Philosophy of Biology is a rapidly expanding field. It is concerned with explanatory concepts in evolution, genetics, and ecology. This collection of 25 essays by leading researchers provides an overview of the state of the field. These essays are wholly new; none of them could have been written even ten years ago. They demonstrate how philosophical analysis has been able to contribute to sometimes contested areas of scientific theory making. -Written by internationally acknowledged leaders in the field - Entries make original contributions as well as summarizing state of the art discoveries in the field - Easy to read and understand

A Century of Parasitology

"An introduction to coalescent theory, which provides the foundation for molecular

population genetics and genomics. Coalescent theory is the conceptual framework for studies of DNA sequence variation within species, and is the source of essential tools for making inferences about mutation, recombination, population structure and natural selection from DNA sequence data"--Provided by publisher.

Tempo and Mode in Evolution

Motoo Kimura, as founder of the neutral theory, is uniquely placed to write this book. He first proposed the theory in 1968 to explain the unexpectedly high rate of evolutionary change and very large amount of intraspecific variability at the molecular level that had been uncovered by new techniques in molecular biology. The theory - which asserts that the great majority of evolutionary changes at the molecular level are caused not by Darwinian selection but by random drift of selectively neutral mutants - has caused controversy ever since. This book is the first comprehensive treatment of this subject and the author synthesises a wealth of material - ranging from a historical perspective, through recent molecular discoveries, to sophisticated mathematical arguments - all presented in a most lucid manner.

Perspectives in Ecological Theory

Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, Concepts of Biology is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand. We also strive to show the interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of Concepts of Biology is that instructors can customize the book, adapting it to the approach that works best in their classroom. Concepts of Biology also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts.

Quantitative Genetics

Human Population Genetics

Biology was forged into a single, coherent science only within living memory. In this volume the thinkers responsible for the "modern synthesis" of evolutionary biology and genetics come together to analyze that remarkable event. In a new

Preface, Ernst Mayr calls attention to the fact that scientists in different biological disciplines varied considerably in their degree of acceptance of Darwin's theories. Mayr shows us that these differences were played out in four separate periods: 1859 to 1899, 1900 to 1915, 1916 to 1936, and 1937 to 1947. He thus enables us to understand fully why the synthesis was necessary and why Darwin's original theory—that evolutionary change is due to the combination of variation and selection—is as solid at the end of the twentieth century as it was in 1859.

Concepts of Biology

Reviews key areas in ecological, medical and molecular parasitology Features essays from some of the world's leading parasitologists Each topic is set in context by featuring a key paper from the Journal of Parasitology over the past 100 years

Tears of the Cheetah

Biology 2e (2nd edition) is designed to cover the scope and sequence requirements of a typical two-semester biology course for science majors. The text provides comprehensive coverage of foundational research and core biology concepts through an evolutionary lens. Biology includes rich features that engage students in scientific inquiry, highlight careers in the biological sciences, and offer everyday applications. The book also includes various types of practice and homework questions that help students understand -- and apply -- key concepts. The 2nd edition has been revised to incorporate clearer, more current, and more dynamic explanations, while maintaining the same organization as the first edition. Art and illustrations have been substantially improved, and the textbook features additional assessments and related resources.

Evolution

This book will serve as the definitive reference work on the basic physiology, biochemistry, development, genetics, and molecular biology of *Neurospora*, together with a description of basic laboratory methods. Among the filamentous fungi, *Neurospora* is a basic model organism, used initially in the establishment of the one-gene, one-enzyme principle, and it has become a favored research organism in a variety of biological problems since that time. Until now, there has been no standard guide to the organism. The book reviews early research since 1927 and describes the current state of the major research programs now being pursued. Each chapter includes detailed literature references for the scholar and experimentalist. Both researchers in the filamentous fungi and biologists requiring information about *Neurospora* will find this an invaluable resource because it gathers 75 years of scattered research literature into a coherent account.

An Introduction to Population Genetics

Professor Levins, one of the leading explorers in the field of integrated population biology, considers the mutual interpenetration and joint evolution of organism and environment, occurring on several levels at once. Physiological and behavioral adaptations to short-term fluctuations of the environment condition the responses

of populations to long-term changes and geographic gradients. These in turn affect the way species divide the environments among themselves in communities, and, therefore, the numbers of species which can coexist. Environment is treated here abstractly as pattern: patchiness, variability, range, etc. Populations are studied in their patterns: local heterogeneity, geographic variability, faunistic diversity, etc.

Microsatellite Markers

Microsatellite or so-called simple sequence repeat (SSR) markers have been one of the most reliable molecular markers derived from the DNA molecule, which were widely and successfully used for more than 25 years in the genetic studies of environmental, agricultural, and biomedical sciences. The objective of this Microsatellite Markers book is to rehighlight and provide some updates on previous and recent utilization of microsatellite markers for various applications in agriculture and medicine, which void emerging opinion on "full death" of microsatellites as useful genetic markers. Chapters presented here demonstrate the future benefit of SSRs in many genetic studies as well as disease diagnosis and prognosis.

A Primer of Molecular Population Genetics

Genetics and Evolution of Infectious Diseases, Second Edition, discusses the constantly evolving field of infectious diseases and their continued impact on the health of populations, especially in resource-limited areas of the world. Students in public health, biomedical professionals, clinicians, public health practitioners, and decisions-makers will find valuable information in this book that is relevant to the control and prevention of neglected and emerging worldwide diseases that are a major cause of global morbidity, disability, and mortality. Although substantial gains have been made in public health interventions for the treatment, prevention, and control of infectious diseases during the last century, in recent decades the world has witnessed a worldwide human immunodeficiency virus (HIV) pandemic, increasing antimicrobial resistance, and the emergence of many new bacterial, fungal, parasitic, and viral pathogens. The economic, social, and political burden of infectious diseases is most evident in developing countries which must confront the dual burden of death and disability due to infectious and chronic illnesses. Takes an integrated approach to infectious diseases Includes contributions from leading authorities Provides the latest developments in the field of infectious disease

The Adaptive Landscape in Evolutionary Biology

This volume presents an overview of current accomplishments and future directions in ecological theory. The twenty-three chapters cover a broad range of important topics, from the physiology and behavior of individuals or groups of organisms, through population dynamics and community structure, to the ecology of ecosystems and the geochemical cycles of the entire biosphere. The authors focus on ways in which theory, whether expressed mathematically or verbally, can contribute to defining and solving fundamental problems in ecology. A second aim is to highlight areas where dialogue between theorists and empiricists is likely to

be especially rewarding. The authors are R. M. Anderson, C. W. Clark, M. L. Cody, J. E. Cohen, P. R. Ehrlich, M. W. Feldman, M. E. Gilpin, L. J. Gross, M. P. Hassell, H. S. Horn, P. Kareiva, M.A.R. Koehl, S. A. Levin, R. M. May, L. D. Mueller, R. V. O'Neill, S. W. Pacala, S. L. Pimm, T. M. Powell, H. R. Pulliam, J. Roughgarden, W. H. Schlesinger, H. H. Shugart, S. M. Stanley, J. H. Steele, D. Tilman, J. Travis, and D. L. Urban. Originally published in 1989. 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.

Neurospora

An integrative approach linking the causes of migration to genetic consequences for human evolution.

Migration and Colonization in Human Microevolution

From guppies to Galapagos finches and from adaptive landscapes to haldanes, this compilation of contributed works provides reviews, perspectives, theoretical models, statistical developments, and empirical demonstrations exploring the tempo and mode of microevolution on contemporary to geological time scales. New developments, and reviews, of classic and novel empirical systems demonstrate the strength and diversity of evolutionary processes producing biodiversity within species. Perspectives and theoretical insights expand these empirical observations to explore patterns and mechanisms of microevolution, methods for its quantification, and implications for the evolution of biodiversity on other scales. This diverse assemblage of manuscripts is aimed at professionals, graduate students, and advanced undergraduates who desire a timely synthesis of current knowledge, an illustration of exciting new directions, and a springboard for future investigations in the study of microevolution in the wild.

Evolution and the Genetics of Populations, Volume 2

When we consider the main object of forestry, the tree, it immediately becomes clear why experimental population geneticists have been so hesitant in making this object a primary concern of their research. Trees are very long-living organisms with generation intervals frequently exceeding those of their investigators by multiples. They virtually exclude, therefore, application of the classical methods of population genetics since these are based on observing genetic structures over generations. This situation, where the limits set to observation are so severe, particularly requires close cooperation between theory and experiment. It also requires careful consideration of results obtained for organisms other than trees, in order to gain additional insights by comparing the results for trees with those for other organisms. Yet, the greatest challenge to population and ecological genetics probably originates from the fact that forests are very likely to be the most

complex ecosystems of all, even in some cases where they are subject to intense management. This complexity, which equally comprises biotic and abiotic factors varying both in time and space, makes extremely high demands on the adaptational capacity and thus flexibility of the carriers of such an ecosystem. Longevity combined with immobility during the vegetative phase, however, appears to contradict the obvious necessity of adaptational flexibility in forest tree populations when compared with short lived and/or mobile organisms.

Principles of Population Genetics

The history of life on Earth is dominated by extinction events so numerous that over 99.9% of the species ever to have existed are gone forever. If animals could talk, we would ask them to recall their own ancestries, in particular the secrets as to how they avoided almost inevitable annihilation in the face of daily assaults by predators, climactic cataclysms, deadly infections and innate diseases. In *Tears of the Cheetah*, medical geneticist and conservationist Stephen J. O'Brien narrates fast-moving science adventure stories that explore the mysteries of survival among the earth's most endangered and beloved wildlife. Here we uncover the secret histories of exotic species such as Indonesian orangutans, humpback whales, and the imperiled cheetah-the world's fastest animal which nonetheless cannot escape its own genetic weaknesses. Among these genetic detective stories we also discover how the Serengeti lions have lived with FIV (the feline version of HIV), where giant pandas really come from, how bold genetic action pulled the Florida panther from the edge of extinction, how the survivors of the medieval Black Death passed on a genetic gift to their descendents, and how mapping the genome of the domestic cat solved a murder case in Canada. With each riveting account of animal resilience and adaptation, a remarkable parallel in human medicine is drawn, adding yet another rationale for species conservation-mining their genomes for cures to our own fatal diseases. *Tears of the Cheetah* offers a fascinating glimpse of the insight gained when geneticists venture into the wild.

Population Genetics in Forestry

Since George Gaylord Simpson published *Tempo and Mode in Evolution* in 1944, discoveries in paleontology and genetics have abounded. This volume brings together the findings and insights of today's leading experts in the study of evolution, including Ayala, W. Ford Doolittle, and Stephen Jay Gould. The volume examines early cellular evolution, explores changes in the tempo of evolution between the Precambrian and Phanerozoic periods, and reconstructs the Cambrian evolutionary burst. Long-neglected despite Darwin's interest in it, species extinction is discussed in detail. Although the absence of data kept Simpson from exploring human evolution in his book, the current volume covers morphological and genetic changes in human populations, contradicting the popular claim that all modern humans descend from a single woman. This book discusses the role of molecular clocks, the results of evolution in 12 populations of *Escherichia coli* propagated for 10,000 generations, a physical map of *Drosophila* chromosomes, and evidence for "hitchhiking" by mutations.

Genetics and Evolution of Infectious Diseases

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

An up-to-date, accessible guide to the main concepts and applications of quantitative genetics.

Microevolution Rate, Pattern, Process

One service mathematics has rendered the ~Et moi , si j'avait su comment en revenir, human race. It has put common sense back je riy serais point aile.' Jules Verne where it belongs, on the topmost shelf next to the dusty canister labelled 'discarded non The series is divergent; therefore we may be sense'. able to do something with it. Eric T. Bell O. Heaviside Mathematics is a tool for thought. A highly necessary tool in a world where both feedback and non linearities abound. Similarly, all kinds of parts of mathematics serve as tools for other parts and for other sciences. Applying a simple rewriting rule to the quote on the right above one finds such statements as: 'One service topology has rendered mathematical physics .. o'; 'One service logic has rendered com puter science .. o'; 'One service category theory has rendered mathematics .. .'. All arguably true. And all statements obtainable this way form part of the raison d'etre of this series.

Biology 2e

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

The Evolutionary Synthesis

Mark Ridley's *Evolution* has become the premier undergraduate text in the study of evolution. Readable and stimulating, yet well-balanced and in-depth, this text tells the story of evolution, from the history of the study to the most recent developments in evolutionary theory. The third edition of this successful textbook features updates and extensive new coverage. The sections on adaptation and diversity have been reorganized for improved clarity and flow, and a completely updated section on the evolution of sex and the inclusion of more plant examples have all helped to shape this new edition. *Evolution* also features strong, balanced coverage of population genetics, and scores of new applied plant and animal examples make this edition even more accessible and engaging. Dedicated website - provides an interactive experience of the book, with illustrations downloadable to PowerPoint, and a full supplemental package complementing the book - www.blackwellpublishing.com/ridley. Margin icons - indicate where there is relevant information included in the dedicated website. Two new chapters - one on evolutionary genomics and one on evolution and development bring state-of-the-art information to the coverage of evolutionary study. Two kinds of boxes - one featuring practical applications and the other related information, supply added depth without interrupting the flow of the text. Margin comments - paraphrase and highlight key concepts. Study and review questions - help students review their understanding at the end of each chapter, while new challenge questions prompt students to synthesize the chapter concepts to reinforce the learning at a deeper level.

Macroevolution

"Wright's views about population genetics and evolution are so fundamental and so comprehensive that every serious student must examine these books firsthand. . . . Publication of this treatise is a major event in evolutionary biology."-Daniel L. Hartl, *BioScience*

Biology for AP ® Courses

This book is divided in two parts, the first of which shows how, beyond paleontology and systematics, macroevolutionary theories apply key insights from ecology and biogeography, developmental biology, biophysics, molecular phylogenetics and even the sociocultural sciences to explain evolution in deep time. In the second part, the phenomenon of macroevolution is examined with the help of real life-history case studies on the evolution of eukaryotic sex, the formation of anatomical form and body-plans, extinction and speciation events of

marine invertebrates, hominin evolution and species conservation ethics. The book brings together leading experts, who explain pivotal concepts such as Punctuated Equilibria, Stasis, Developmental Constraints, Adaptive Radiations, Habitat Tracking, Turnovers, (Mass) Extinctions, Species Sorting, Major Transitions, Trends and Hierarchies – key premises that allow macroevolutionary epistemic frameworks to transcend microevolutionary theories that focus on genetic variation, selection, migration and fitness. Along the way, the contributing authors review ongoing debates and current scientific challenges; detail new and fascinating scientific tools and techniques that allow us to cross the classic borders between disciplines; demonstrate how their theories make it possible to extend the Modern Synthesis; present guidelines on how the macroevolutionary field could be further developed; and provide a rich view of just how it was that life evolved across time and space. In short, this book is a must-read for active scholars and because the technical aspects are fully explained, it is also accessible for non-specialists. Understanding evolution requires a solid grasp of above-population phenomena. Species are real biological individuals and abiotic factors impact the future course of evolution. Beyond observation, when the explanation of macroevolution is the goal, we need both evidence and theory that enable us to explain and interpret how life evolves at the grand scale.

Analytical Techniques in the Oil and Gas Industry for Environmental Monitoring

Although plants comprise more than 90% of all visible life, and land plants and algae collectively make up the most morphologically, physiologically, and ecologically diverse group of organisms on earth, books on evolution instead tend to focus on animals. This organismal bias has led to an incomplete and often erroneous understanding of evolutionary theory. Because plants grow and reproduce differently than animals, they have evolved differently, and generally accepted evolutionary views—as, for example, the standard models of speciation—often fail to hold when applied to them. Tapping such wide-ranging topics as genetics, gene regulatory networks, phenotype mapping, and multicellularity, as well as paleobotany, Karl J. Niklas's *Plant Evolution* offers fresh insight into these differences. Following up on his landmark book *The Evolutionary Biology of Plants*—in which he drew on cutting-edge computer simulations that used plants as models to illuminate key evolutionary theories—Niklas incorporates data from more than a decade of new research in the flourishing field of molecular biology, conveying not only why the study of evolution is so important, but also why the study of plants is essential to our understanding of evolutionary processes. Niklas shows us that investigating the intricacies of plant development, the diversification of early vascular land plants, and larger patterns in plant evolution is not just a botanical pursuit: it is vital to our comprehension of the history of all life on this green planet.

Exam Prep for: Population Genetics and Microevolutionary Theory

The use of DNA and other biological macromolecules has revolutionized systematic studies of evolutionary history. Methods that use sequences of nucleotides and

amino acids are now routinely used as data for addressing evolutionary questions that, although not new questions, have defied description and analysis. The world-renowned contributors use these new methods to unravel particular aspects of the evolutionary history of birds. *Avian Molecular Evolution and Systematics* presents an overview of the theory and application of molecular systematics, focusing on the phylogeny and evolutionary biology of birds. New, developing areas in the phylogeny of birds at multiple taxonomic areas are covered, as well as methods of analysis for molecular data, evolutionary genetics within and between bird populations, and the application of molecular-based phylogenies to broader questions of evolution. Contains authoritative contributions from leading researchers Discusses the utility of different molecular markers for questions of avian evolution, involving populations and higher-level taxa Applies molecular-based phylogenies of birds and molecular population genetics data to broad questions of organismal and molecular evolution. Compares and contrasts molecular and morphological data sets

The Neutral Theory of Molecular Evolution

Evolution: Components and Mechanisms introduces the many recent discoveries and insights that have added to the discipline of organic evolution, and combines them with the key topics needed to gain a fundamental understanding of the mechanisms of evolution. Each chapter covers an important topic or factor pertinent to a modern understanding of evolutionary theory, allowing easy access to particular topics for either study or review. Many chapters are cross-referenced. Modern evolutionary theory has expanded significantly within only the past two to three decades. In recent times the definition of a gene has evolved, the definition of organic evolution itself is in need of some modification, the number of known mechanisms of evolutionary change has increased dramatically, and the emphasis placed on opportunity and contingency has increased. This book synthesizes these changes and presents many of the novel topics in evolutionary theory in an accessible and thorough format. This book is an ideal, up-to-date resource for biologists, geneticists, evolutionary biologists, developmental biologists, and researchers in, as well as students and academics in these areas and professional scientists in many subfields of biology. Discusses many of the mechanisms responsible for evolutionary change Includes an appendix that provides a brief synopsis of these mechanisms with most discussed in greater detail in respective chapters Aids readers in their organization and understanding of the material by addressing the basic concepts and topics surrounding organic evolution Covers some topics not typically addressed, such as opportunity, contingency, symbiosis, and progress

Population Genetics and Evolution

"A text for a one-semester course in population genetics. It introduces students to classical population genetics (in terms of allele and haplotype frequencies) and modern population genetics (in terms of coalescent theory). It presents numerous applications of population genetic methods to practical problems, including testing for natural selection, detecting genetic hitchhiking and inferring the history of populations"--Provided by publisher.

Avian Molecular Evolution and Systematics

Human Population Genetics and Genomics provides researchers/students with knowledge on population genetics and relevant statistical approaches to help them become more effective users of modern genetic, genomic and statistical tools. In-depth chapters offer thorough discussions of systems of mating, genetic drift, gene flow and subdivided populations, human population history, genotype and phenotype, detecting selection, units and targets of natural selection, adaptation to temporally and spatially variable environments, selection in age-structured populations, and genomics and society. As human genetics and genomics research often employs tools and approaches derived from population genetics, this book helps users understand the basic principles of these tools. In addition, studies often employ statistical approaches and analysis, so an understanding of basic statistical theory is also needed. Comprehensively explains the use of population genetics and genomics in medical applications and research Discusses the relevance of population genetics and genomics to major social issues, including race and the dangers of modern eugenics proposals Provides an overview of how population genetics and genomics helps us understand where we came from as a species and how we evolved into who we are now

Plant Evolution

While the study of viral evolution has developed rapidly in the last 30 years, little attention has been directed toward linking the mechanisms of viral evolution to the epidemiological outcomes of these processes. This book intends to fill this gap by considering the patterns and processes of viral evolution at all its spatial and temporal scales.

Evolution From Molecules to Men

Originally published in 1970, this classic in the field of population genetics opens with elementary concepts and deals primarily with natural populations and less fully with the rather similar problems that arise in breeding livestock and cultivated plants.

Coalescent Theory

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.

Fundamentals of Mathematical Evolutionary Genetics

A thorough introduction to environmental monitoring in the oil and gas industry Analytical Techniques in the Oil and Gas Industry for Environmental Monitoring examines the analytical side of the oil and gas industry as it also provides an overall introduction to the industry. You'll discover how oil and natural gas are sourced, refined, and processed. You can learn about what's produced from oil and natural gas, and why evaluating these sourced resources is important. The book

discusses the conventional analyses for oil and natural gas feeds, along with their limitations. It offers detailed descriptions of advanced analytical techniques that are commercially available, plus explanations of gas and oil industry equipment and instrumentation. You'll find technique descriptions supplemented with a list of references as well as with real-life application examples. With this book as a reference, you can prepare to apply specific analytical methods in your organization's lab environment. Analytical Techniques can also serve as your comprehensive resource on key techniques in the characterization of oil and gas samples, within both refinery and environmental contexts. Understand of the scope of oil and gas industry techniques available Consider the benefits and limitations of each available process Prepare for applying analytical techniques in your lab See real examples and a list of references for each technique Read descriptions of off-line analytics, as well as on-line and process applications As a chemist, engineer, instructor, or student, this book will also expand your awareness of the role these techniques have in environmental monitoring and environmental impact assessments.

Evolution

This edition provides a balanced presentation of theory and observation. It introduces the principles of genetics and statistics that are relevant to population studies, and examines the forces affecting genetic variation from the molecular to the organismic level.

An Introduction to Population Genetics Theory

An integrative approach linking the causes of migration to genetic consequences for human evolution.

Human Population Genetics and Genomics

Giving a broad view of biological evolution the topics discussed here range from the history of the development of evolutionary thought, through current problems in molecular evolution and the evolution of whole organisms, to evolution of behaviour, sociobiology and man's place in evolution.

Evolution in Changing Environments

The 'Adaptive Landscape' has been a central concept in population genetics and evolutionary biology since this powerful metaphor was first formulated in 1932. This volume brings together historians of science, philosophers, ecologists, and evolutionary biologists, to discuss the state of the art from several different perspectives.

Philosophy of Biology

What are the genomic signatures of adaptations in DNA? How often does natural selection dictate changes to DNA? How does the ebb and flow in the abundance of individuals over time get marked onto chromosomes to record genetic history?

Molecular population genetics seeks to answer such questions by explaining genetic variation and molecular evolution from micro-evolutionary principles. It provides a way to learn about how evolution works and how it shapes species by incorporating molecular details of DNA as the heritable material. It enables us to understand the logic of how mutations originate, change in abundance in populations, and become fixed as DNA sequence divergence between species. With the revolutionary advances in genomic data acquisition, understanding molecular population genetics is now a fundamental requirement for today's life scientists. These concepts apply in analysis of personal genomics, genome-wide association studies, landscape and conservation genetics, forensics, molecular anthropology, and selection scans. This book introduces, in an accessible way, the bare essentials of the theory and practice of molecular population genetics.

[ROMANCE](#) [ACTION & ADVENTURE](#) [MYSTERY & THRILLER](#) [BIOGRAPHIES & HISTORY](#) [CHILDREN'S](#) [YOUNG ADULT](#) [FANTASY](#) [HISTORICAL FICTION](#) [HORROR](#) [LITERARY FICTION](#) [NON-FICTION](#) [SCIENCE FICTION](#)