Human Population Genetics

John H. Relethford
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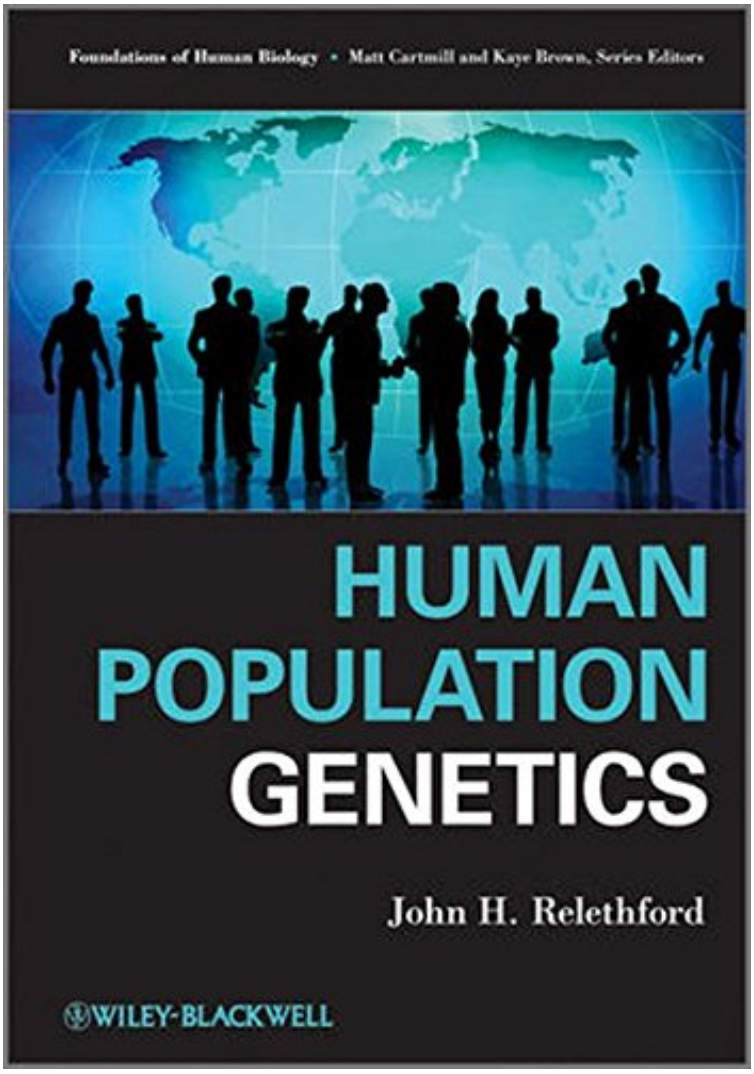

#763042 in Books 2012-03-27Original language:EnglishPDF # 1 10.00 x .70 x 7.05l, 1.20 #File Name: 0470464674300 pages | File size: 45.Mb

John H. Relethford : Human Population Genetics before purchasing it in order to gage whether or not it would be worth my time, and all praised Human Population Genetics:

13 of 13 people found the following review helpful. Informative text, but first edition needs editing.By Kindle CustomerHuman Population Genetics is a biology-focused, upper-level undergraduate text that approaches the introduction of the concept of microevolution and population genetics by emphasizing the biology while relegating the majority of derivations of the statistical models to various appendices or outside papers. A firm grasp of genetics is necessary for appreciating this material, and some exposure to molecular biology and statistics would greatly benefit anyone reading this text. While the biological examples in this text focus on human, biological anthropology, I'd

believe that the statistical models are appropriate to other diploid organisms as well, and therefore this book may be appropriate to the introduction of population genetics in general.The author spends a good deal of time introducing and describing the statistics of Hardy-Weinberg equilibrium model before discussing the various biological factors and their interactions that result in changes to this model. These factors include inbreeding, mutation, genetic drift, natural selection, gene flow, and population structure. Some of the specific terminologies discussed are identity by descent/state, coalescent theory, selective sweep, and measures of genetic similarity. While discussing these concepts, the author concentrates on carefully, detailed exposition of the mathematics in easily accessible English presumably with the goal of providing statistical models of population genetics to scientists who do not intuit the meaning and derivation of these equations. Being new to this field and despite the fact that my mathematical experiences are more advanced than what it necessary for this work, I found the rudimentary expositions of the concepts with which I was not previously familiar to be clear, informative, and engaging.However, I did not want give this book a 4-or-more star rating mainly due to poor editing. While the biology seemed solid, there are numerous errors with the mathematics primarily found in the first half of the text. Some of these errors are substantial (like typos in equations 5.2 and 6.4) while others were less major but integrated into the text (for instance, the author discusses a statistical table in chapter 2 and essentially flips the sign of a difference in mid-sentence making the sentence somewhat confusing.) While these errors will be simple for someone with similar mathematical background to me (I have a BS in mathematics) to immediately spot, I realize that most students coming upon this material for the first time will probably have more difficulty catching these errors. Since this book will most likely be used as a bridge for anthropologists/biologists into the statistics of population genetics, I foresee these errors to be major stumbling blocks for many students. However, if the reader has enough mathematical intuition to spot and correct these errors for themselves (or someone points them out before-hand), I do highly recommend this book.

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

Relethfords Human Population Geneticsis a superb attempt at facing the challenges of explaining the basics of population genetics to those with a limited background in evolutionary theory and a fear of the quantitative. (The Quarterly of Biology, 1 September 2014) For many students, and likely some instructors, who have found the mathematical underpinnings of evolutionary genetics daunting, this new volume will be a welcome addition to the bookshelf. It is an easy book to recommend either as a primary text in anthropological genetics courses, or as a recommended or adjunct text in upper division/beginning graduate courses in human biology, human genetics, or human evolution. (American Journal of Physical Anthropology, 19 September 2013) From the Back CoverIntroductory 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.