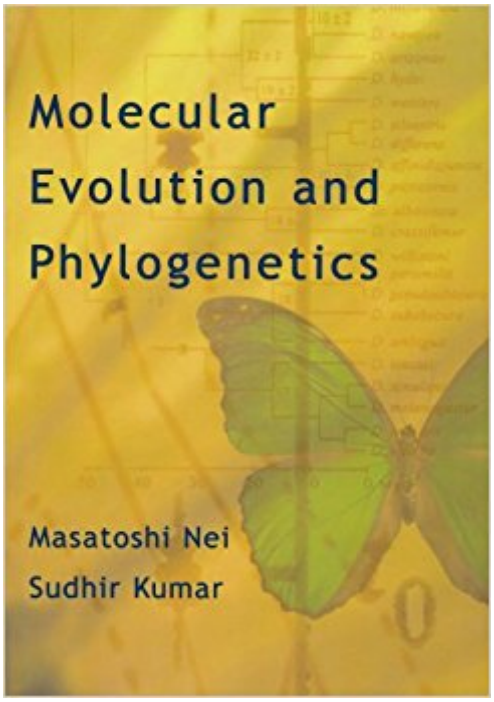
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Molecular Evolution And Phylogenetics



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Synopsis

During the last ten years, remarkable progress has occurred in the study of molecular evolution. Among the most important factors that are responsible for this progress are the development of new statistical methods and advances in computational technology. In particular, phylogenetic analysis of DNA or protein sequences has become a powerful tool for studying molecular evolution. Along with this developing technology, the application of the new statistical and computational methods has become more complicated and there is no comprehensive volume that treats these methods in depth. Molecular Evolution and Phylogenetics fills this gap and present various statistical methods that are easily accessible to general biologists as well as biochemists, bioinformatists and graduate students. The text covers measurement of sequence divergence, construction of phylogenetic trees, statistical tests for detection of positive Darwinian selection, inference of ancestral amino acid sequences, construction of linearized trees, and analysis of allele frequency data. Emphasis is given to practical methods of data analysis, and methods can be learned by working through numerical examples using the computer program MEGA2 that is provided.

Book Information

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Customer Reviews

It is worth its price * Plant Systematics and Evolution *

Masatoshi Nei is at Pennsylvania State University. Sudhir Kumar is at Arizona State University.

I took Sudhir Kumar's Comparative Genomics course at Arizona State during my last semester of my undergraduate program and this was the primary textbook that we used. It provided a suitable amount of detail to be able to discuss the main ideas during class without having any comparative genomics background. It isn't the most interesting textbook I've ever read, nor are the figures of particular artistic flare, but nonetheless the book is useful if you actually want to learn comparative genomics.I would recommend this book to anybody in the life sciences.

I bought a used one with $3.99. I've read this book, and since it is so cheap, it is not bad to have one.I couldn't even tell it is used. Guess someone just return it after buying.

The content of this book is really good! Each chapter is clear and use examples to make things even clearer. Subjects and analysis are taken step by step from the simplest to the more complex themes, so this a very good book for those who are beginning to lear about molecular evolution analysis. The book was in very good condition as stated. Delivery was on schedule.

This is heavy reading. Nothing you do on a plane, but a must have if you really want to work questions of Molecular evolution at a professional level.

This book is excellent. It completely fulfilled my expectations.

I don't look for any one book to answer all my questions. This one carries its weight, though, and maybe a bit more.The first section gives the clearest and most detailed description of nucleotide sequence comparisons I've seen. I'm no biologist, but it really got me thinking about some new ways to talk about substitution matrices.The bulk of the book covers what I hoped for originally: phylogenetic trees. The authors choose an unusual approach - it doesn't quite meet the authors' initial promise of math-minimization, but doesn't climb too far up the ivory tower, either. I find it a very practical, usable level of presentation. I'd be nervous about going beyond their formulas, since the math for real understanding isn't all there. Still, the phylogeny discussion covers a lot of material, and covers it well enough for me to write programs about most of it.The final section addresses population genetics. I have nothing against population genetics, it just never seemed to point where I'm headed. Nei and Kumar corrected my mis-impression. Population gentics is the background model, the null hypothesis, behind the functions that score population differences. It really shows what happens when the tree of life branches out.The book has some minor weaknesses. It

emphasizes nucleotide sequences at the expense of peptides; I can't fault an author for writing what they want as opposed to what I want. On page one, the authors decline an intensely mathematical approach. By page 25, they're up to Poisson and gamma distances. The typography make the section breaks into a "Where's Waldo" experience. Nei's favorite author, based on citations, is Nei. Well, false modesty is no virtue. This book seems authoritative and Nei seems to be an authority, maybe not just in Nei's opinion.This book really has given me a lot more to work with than most. Education isn't cheap these days, and this book is very educational. I just hope no one asks me to lend it any time soon.

This is practically an almanac of facts with a bunch of math where they skip many steps and they assume you know what mathematical operations were done going from step 5 to 6. Well, it has taught me very little other than just enough to help me pass my class with a B. Its a painful read but its full of useful tidbits of info, their is just no cohesive flow to the book. You can definitely tell that this book was written by a hardcore scientist whose first language was not english, and then it was edited and reviewed by another hardcore scientist. I sorta wish they had an Enlgish Lit person edit this to make it flow more, but hey, the info is there and with the extensive help of google, you can learn something with this book. Personally I do not recommend it, however your alternatives are not much better. The guy who wrote this book basically pioneered the field of evolutionary biology so at least you know that the concepts are solid, if you are able to grasp them.

If you like to understand the math behind evolution and phylogenetics it is a perfect book. But it is not for people starting to learning about it.

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