

Phylogeography — The History and Formation of Species. John C. Avise. Harvard University Press, Cambridge, MA. 2000. Pp. 447. Price £30.95, hardback. ISBN 0 674 66638 0.

Phylogeography is a growth area of evolutionary biology. John Avise coined the term 'phylogeography' in 1987 and has been the prime mover in promoting the successful development of the field since then. It is therefore to be welcomed that he has written this book which reviews the history of phylogeography, the fundamental principles of the field and the current and future value of phylogeography within biogeography and evolutionary biology. As with Avise's previous books this volume is well-produced and written in an accessible style that will make it an excellent textbook for upper-level undergraduates and postgraduates specialising in phylogeography. The book will also be used and widely quoted by the growing community of practising phylogeographers. It provides an easy entry to the primary literature with nearly a hundred pages of references.

The only substantive difficulty I had with the book relates to the first few pages. I felt that Avise made heavy weather of defining 'phylogeography' and did not understand why he didn't begin the book by first defining biogeography, then 'ecological' and 'historical' biogeography and finally identifying phylogeography as a method of inferring historical biogeographical scenarios at the within-species level using molecular markers. Instead, the beginning of the first chapter gives the impression that phylogeography is equivalent to, rather than part of historical biogeography, despite the fact that much historical biogeographical interpretation does not need any molecular input. A further, also inappropriate, definition for phylogeography is implied by the subheading of the book 'the history and formation of species'.

I was very impressed by the manner in which Avise communicates the fundamentals of phylogeographic theory.

He introduces much of this theory early on but elegantly extends concepts as necessary later in the book. He is exceptionally clear in discussing coalescence, lineage sorting, gene trees vs. species trees, differing consequences of nuclear vs. mitochondrial markers, etc. The idea of using human case studies to introduce the empirical section of the book is excellent. All too often our own species is relegated to the end of a book such as this, even when (as in the example of phylogeography) there are particularly impressive datasets on humans. I personally would have preferred further detailed case studies on humans and other organisms, including a better coverage of studies on plants and the colonization of Europe, in place of the taxonomic survey that Avise provides, although I can see that as a reference book such a taxon-by-taxon approach has its merits.

Avise gets across the idea that a phylogeographic approach is not only applicable to analyses of colonization histories but impacts on our understanding of speciation, higher level taxonomies and units of conservation. He also discusses the way that molecular markers under selection can be identified from their genealogies. This is a taster of what will surely be a growth area of the future: phylogeography as a method for inferring ecological biogeography as well as historical. Overall this is a very good book and a worthy first text to cover the field of phylogeography. It deserves considerable success.

JEREMY B. SEARLE
Department of Biology
University of York
PO Box 373
York
YO10 5YW
U.K.

Books received

Evolutionary Genetics — From Molecules to Morphology. Rama S. Singh and Costas B. Krimbas (eds). Cambridge University Press, Cambridge. 2000. Pp. 702. Price £60.00, hardback. ISBN 0 521 57123 5.

The Triple Helix — Gene, Organism & Environment. Richard Lewontin. Harvard University Press, Cambridge, Mass. 2000. Pp. 136. Price £14.50, hardback. ISBN 0 674 00159 1.

Engineering the Human Germline. Gregory Stock and John Campbell (eds). Oxford University Press, New York. 2000. Pp. 169. Price £19.95, hardback. ISBN 0 19 513302 1.

Clinical Genetics — A Short Course. Golder N. Wilson. John Wiley & Sons, Inc., New York. 2000. Pp. 477. Price £32.50, paperback. ISBN 0 471 29806 9.