

**Advances in Molecular Ecology** (NATO Science Series A: Life Sciences — Vol. 306). Gary R. Carvalho (ed.). IOS Press, Amsterdam. 1998. Pp. 313. Price £67.00, hardback. ISBN 90 5199 440 0.

This book contains the proceedings of a meeting of the NATO Advanced Study Institute on Advances in Molecular Ecology, held at Erice, Italy in March 1998. There are 14 chapters, beginning with an overview of the history of the subject area which Gary Carvalho traces back to the ecological genetics school of A. J. Cain, P. M. Sheppard and E. B. Ford. This useful introduction sets the whole discipline in context and provides a basis for what follows. What does follow is an eclectic range of contributions which nevertheless give something of the flavour of the current state of the art. There are some theoretical chapters, dealing with the phylogenetic analysis of population data (Hillis); the estimation of migration rates, contrasting newer coalescent approaches favourably against the more conventional methods based on  $F_{ST}$  (Beerli); parentage analysis in plants (Schnabel); the relative merits of micro- and minisatellites as markers (Estoup & Angers); and, at the end of the book, a very useful review of many of the software packages that are available for conducting different aspects of population genetic analysis (Schnabel *et al.*). Microbes are the focus of three of the chapters, dealing with aspects of present-day (Muyzer) as well as palaeo-ecology (Rollo), and bacterial speciation (Young). The evolutionary implications of clonal reproduction are treated from an animal perspective in an excellent review by Vrijenhoek. Other topics of evolutionary importance addressed include the use of molecular markers in the study of natural selection (Mitton), hybridisation (Rieseberg), and differentiation in aquatic populations, both inland (Hebert) and at sea (Hauser & Ward).

I found the sequence of chapters a little perplexing because, apart from the microbial ones being grouped, the others did not seem to occur in any particular order. Overall, there is a clear bias evident in the contributions towards zoological examples and contexts; the treatments of hybridization and parentage analysis are the only two that have a primary focus on plants. These are very minor points, however, because overall I found the book to be most informative, and I was pleased to find that many of the contributions were characterized by a significant component of review material which I found helpful.

In short, this is an excellent book and the editor and authors are to be congratulated on its appearance so soon after the conference. It should be of interest and great use to graduate students and research workers who want a quick entry into some of the most up-to-date literature on the subjects covered.

RICHARD J. GORNALL  
Department of Biology  
University of Leicester  
Leicester LE1 7RH  
U.K.

**Evolution in Health and Disease.** Stephen C. Stearns (ed.). Oxford University Press, Oxford. 1999. Pp. 328. Price £23.50, paperback. ISBN 0 19 850445 4.

This ambitious text is the result of a conference held in Switzerland in April 1997 which brought together many of those who are leading the quest for evolutionary answers to the problems of modern medicine. It aims to bring evolutionary biology to the attention of those involved in medical education and research and make doctors 'consider evolutionary thinking a standard part of their toolkit'.

The introductory chapter makes great claims for a Darwinian approach stating 'evolution combines with physics and chemistry to explain all biological phenomena and it is the only part of biology containing basic principles not implicit in physics and chemistry'. This may be true, but it will be taken by some as a further example of an ultra-Darwinian claim to exclusivity of truth and a denial of other perspectives. In fairness the majority of the book should not be taken in this way as both the benefits and limitations of an evolutionary approach are discussed.

There is great breadth in what is covered — from chapters considering parasite virulence to those on complex genetic disorders (and including the entertainingly titled 'Putting the stone age in perspective'). That there is something of interest for everyone is its strength, but some chapters (for example on psychiatric disorders) seem brief and leave you wanting more.

In the case of complex genetic diseases such as major psychiatric illness, the full benefit of an evolutionary perspective awaits the discovery of susceptibility genes. However, methodologies are being developed — such as cladistic analysis — which use an evolutionary perspective to locate such genes and illustrate the practical benefits of adopting this approach now.

There is much of interest in this book and I have no hesitation in recommending it. If not to be devoured from cover to cover, it certainly is a rich resource from which to pick chapters of interest. Evolutionary biology was not part of my medical school education in the mid-eighties and I suspect that this situation has not drastically altered. While this is clearly a serious omission, will attention to the 'ultimate causation' of evolutionary explanation lead to the major paradigm shift in medical research and practice that the authors expect? A Darwinian perspective providing 'new insights into old questions', is important but will not provide a complete account of health and disease. The truth about perspectives is that there are always others.

IAN JONES  
Division of Neurosciences  
University of Birmingham  
Queen Elizabeth Psychiatric Hospital  
Edgebaston  
Birmingham B15 2QZ  
U.K.