fire frequency. In concert with decades of fire suppression by foresters, natural fire regimes have been dramatically altered, with concomitant changes in forest composition. Soulé argues that, because we often have no viable concept of natural baseline conditions or normal variability in forest ecosystems, the only viable strategy is to maintain all forest species and natural ecological processes, such as fire. He further asserts that large carnivores should be re-introduced to forests wherever possible, to help maintain natural abundances of their prey species.

In addition to such biological challenges, foresters are being forced to adapt to fundamental changes in the forest industry. One of the most profound changes is that, in some temperate areas, logging of native forests is being phased out altogether, in favor of wood from tree plantations. In particular, cutting of old-growth forests is declining because of intense pressures applied by conservation organizations that have initiated successful boycotts of companies that produce and use products from ancient forests. Even the famously recalcitrant Boise Cascade Corporation, labeled the 'dinosaur of the timber industry' by the Rainforest Action Network, which once floated a giant dinosaur balloon over the company's headquarters in Idaho, recently announced that it would phase out old-growth logging.

Finally, modern forestry is being rocked by the forces of globalization, as centers of production shift to where items can be produced most cheaply. In the case of rapidly expanding tree plantations, where wood fibre is produced by fast-growing exotic species, this means a dramatic rise in production from the southern hemisphere. New Zealand has already shifted completely from logging its native forests to exotic-pine plantations, and several developing countries, such as Chile, Argentina and South Africa, are also becoming major tree-farming centers. This has serious ramifications for regions such as British Columbia, where well paid forest workers formerly generated a third of the global softwood production by cutting old-growth forests. Today, demand for British Columbian timber is collapsing under an influx of cheaper, environmentally more-benign wood from southern-hemisphere plantations.

If there is one constant for modern foresters, it is that nothing is constant. Shifting markets and production centers, changing environmental demands, the looming prospect of global climatic change, and a myriad of other challenges mean that the goalposts are constantly shifting for forest managers. For those interested in the conservation and management of temperate forests, *Towards Forest Sustainability* is important reading, for the profound changes it describes will have far-reaching implications for forest ecosystems and wildlife.

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Inferring phylogenies: an epic worth the wait

Inferring Phylogenies by Joseph Felsenstein. Sinauer Press, 2004. US$59.95 (664 pages) ISBN 0 87893 177-5

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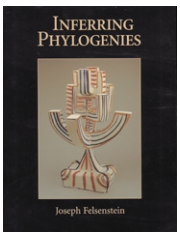

Few books in molecular systematics have been awaited with such anticipation. Rumors had been circulating for many months, even years, that Joe Felsenstein's long-promised *Inferring Phylogenies* was about to be published. Now that it has finally appeared, has it been worth the wait?

The author certainly sets out with an ambitious goal: to survey, in one book, the field of phylogenetics since computational methods entered the arena 40 years ago, and he amply delivers on this promise. The reader is taken on an engaging and varied tour of topics ranging from traditional and more recent methods for inferring, comparing and analyzing phylogenetic trees, to applications involving coalescent, alignment, biogeography and genomic data. There are chapters about the technicalities of drawing trees, and about applications of phylogenies to areas such as paleontology. Written from the author's distinctive statistical viewpoint, it is dense with references, details, examples, figures, photographs, discussion and an occasional sprinkling of humor and anecdote (such as the footnote about the only contemporary systematist to be mentioned in a Hollywood film).

Just as *Inferring Phylogenies* succeeds in providing a comprehensive overview of the field, it also highlights Felsenstein's own interests and contributions. The author is well known for pioneering applications of model-based and statistical techniques to phylogenetics. He has championed this view in research papers and sometimes in vigorous debates, particularly with his long-time intellectual rival Steve Farris and with the philosopher Elliott Sober. Two of Felsenstein's contributions in particular have had a profound effect on the field: his early insights into the possible inconsistency of maximum parsimony [1] (in a region of parameter space now dubbed the 'Felsenstein Zone') and his development of maximum likelihood methodology for phylogenetics [2]. Sections of the book also focus on more esoteric topics, such as Brownian motion models for analyzing gene frequencies, and phylogenetic invariants.

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Besides the usual variety of tree reconstruction methods (and models of sequence and protein evolution) *Inferring Phylogenies* also covers some less well known approaches, such as character compatibility, quartet-based methods and Hadamard conjugation. Several chapters deal with statistical tests (including re-sampling techniques such as the bootstrap) and tests of trees and models. Felsenstein also gives useful explanations of techniques for handling RAPDs, AFLPs and microsatellite data, and describes some of the many recent techniques for applying genomic data (such as gene order, gene duplication and unaligned sequences) in phylogenetics.

Although model-based approaches, such as maximum likelihood and related Bayesian methods, have become preferred approaches for tree reconstruction, it has not always been so. Felsenstein describes the early history and development of phylogenetics and details the often heated philosophical debates that led to ideological divisions in the field. The author is particularly critical of claims that maximum parsimony can be traced directly back to the writings of Willi Hennig, as well as attempts to justify this method by adopting various philosophical positions.

This book will appeal to a wide audience, although less as a textbook than as a repository of details, references and background. It is likely to replace the much-cited book chapter by Swofford *et al.* [3] as the standard reference on phylogenetic methodology. For researchers new to this area, the book describes contemporary methodology in a way that is both accessible and authoritative: the level of mathematics is instructive without being intimidating, and the numerous figures are also helpful. For 'old hands', it provides a wealth of background and commentary. *Inferring Phylogenies* is also likely to interest statisticians and those in related disciplines. Bioinformatics researchers who are tired of reading text thrown together for next week's conference deadline will appreciate the wit and wisdom in a book crafted over many years. Some might even discover that they or their supervisor did not invent techniques such as dynamic programming for tree-based calculations, which can be traced in various forms all the way back to Sir Isaac Newton. This attention to detail will ensure *Inferring Phylogenies* becomes a text to consult for future workers in the field.

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Ecology of a savanna

The Kruger Experience: Ecology and Management of Savanna Heterogeneity edited by J.T. Du Toit, K.H. Rogers and H.C. Biggs. Island Press 2003. US$75.00 hbk, US$40.00 pbk (492 pages) ISBN 1 55963 981 4/1 55963 982 2

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On 25 July 1902, Lt. Col. J. Stevenson-Hamilton stood '…on the edge of the last escarpment of the Drakensberg, overlooking the huddled welter of bush-clad ravines and rocky terraces which compose the foothills…'. He then drove his ox-wagons down to the land that lay between the Sabie and Crocodile Rivers, which had been declared the Sabie Game Reserve in 1898. He was to be the warden of this reserve and that of the adjacent Singwitsi Game Reserve, which were amalgamated to form the Kruger National Park in 1926, until he retired in 1946 at the age of 79. *The Kruger Experience* celebrates and summarizes our current knowledge of this vast area of semi-arid bush.

Such history is important because it brings into perspective the fact that the idea of conserving the environment and wildlife in Africa is older than many modern proponents would like to admit. Interestingly, the development of game reserves in East Africa also dates from a similar period, for the 64 750 km^2 Northern Game Reserve of the Uganda-Kenya border region was approved in 1900 and gazetted in 1902, although it was reduced to 33 670 km^2 in 1908. By contrast, the modern and well known national parks are fairly recent, the Tsavo National Park (20 898 km^2) in eastern Kenya having been gazetted in 1948, whereas the Serengeti National Park (19 485 km^2) in Tanzania, in spite of its importance, only became a protected area in 1940 and a national park in 1951, although its central area (2286 km^2) had been a Game Reserve since 1929.

It is difficult to summarize what we know about as vast an area as the Kruger National Park, but the authors have drawn on the large literature that has accumulated over such a long period of time. Although a great deal of work has informed us of the rich biodiversity of most of sub-Saharan Africa, it was not until the 1950–1960s that seminal work, such as that by Hugh Lamprey in the Tarangire Game Reserve, Tanzania addressed the all-important questions posed by the ecology of these regions. Since then, there has been an 'information explosion',

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