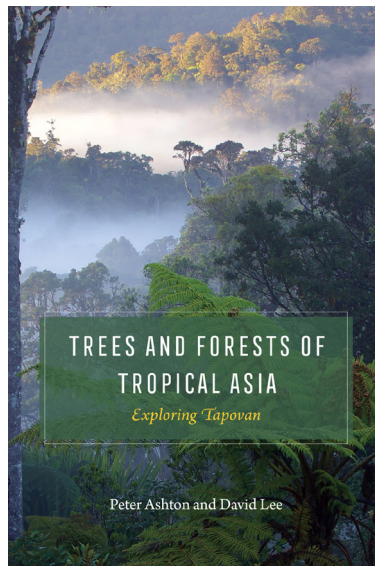


**Trees and Forests of Tropical Asia: Exploring Tapovan** by Peter Ashton and David Lee. The University of Chicago Press, Chicago, USA, 2022. 448 pp. ISBN-13 978-0-226-53569-2. Price \$45.00 (paperback).



*Trees and Forests of Tropical Asia: Exploring Tapovan (TFTA)* is a comprehensive and erudite overview of the ecology and management of some of the most magnificent and diverse ecosystems on our planet. Tapovan is Sanskrit, roughly translating as “forest wisdom” — and wisdom, born of a wealth of experience, is exactly what this significant book delivers.

The authors are both eminent forest ecologists of renowned repute, who between them have accumulated more than a century’s worth of research experience in tropical forest ecology. They first met each other at the University of Malaya in 1973, initiating an academic collaboration, which continued to develop over subsequent decades.

Peter Ashton began his infatuation with Asia’s tropical forests in 1957, when he started his career working for Brunei’s Forestry Department, where he also studied vegetation and soils for his PhD. He furthered his research on tropical trees at the University of Malaya, before becoming a Professor at Harvard University, where he directed the Arnold Arboretum from 1978 to 1987. He was also instrumental in establishing the Center for Tropical Forest Science. He retired in 2005, as Charles Bullard Professor of Forestry, Emeritus, with more than 260 publications to his name.

Following his work at the University of Malaya, David Lee moved to the Université Montpellier and then Florida International University, where he lectured for more than 30 years and performed research on functional ecology, focusing on evolution and adaptation of tropical forest plants, particularly in India and Southeast Asia. He retired in 2009, and passed away in December 2022.

*TFTA* is a shortened version of a much larger monograph: *On the Forests of Tropical Asia: Lest the Memory Fade (OTFTA)*, by Peter Ashton, published by the Royal Botanic Gardens, Kew, in 2015. The objective of *TFTA* is to make the same body of work more accessible to a wider readership, whilst also updating it with citations from the latest research. *OTFTA* is a lavishly illustrated, large-format tome of 800 pages, whereas *TFTA* is 460 pages in a smaller format; so, the contraction is considerable.

The book opens with a brief overview of the weather systems and biological diversity of tropical Asia, ending with an interesting plea for the retention of “natural history” as a source of testable hypotheses, in an age when quantitative studies and bioinformatics dominate ecological research. Chapter 2 briefly summarizes the classification of the diverse forest types in the region, whereas Chapters 3–5 present accounts of the physical conditions that support such various forest types: geology, climates and soils.

The book continues with an exploration of the unique plants that inhabit Asia’s forests, taking a “functional types” approach (Chapter 6). The subsequent two chapters contrast the distinctive features and dynamics of “lowland everwet forests” with forests of more seasonal or arid climates, concentrating on forest structure and diversity (Chapters 7–8), with a separate chapter diving deeper into the tree species composition of lowland forests (Chapter 9). Chapter 10 is dedicated to the effects of ascending altitude on forest structure and composition, describing the transition from lowland forests to sub-alpine thickets. The next two chapters are dedicated to the intricate ecological mechanisms of self-perpetuation—*trees and their mobile links*, including namely pollination, seed dispersal and tree seedling survival (Chapters 11–12). Thence follows a chapter dealing with “phylogeography”, examining the influence of plate tectonics, ice ages and sea-level fluctuations on the dispersal of plant species across the region over geological time (Chapter 13). This is followed by a highly detailed and technical discussion of the various theories proposed to explain variations in tree-species diversity across the region (Chapter 14).

The book then shifts away from the science of how forests function to consider the impacts of humans on forests, from ancient civilizations (Chapter 15), to the influences of colonialism (Chapter 16) and independence (Chapter 17), with the concluding chapter presenting various actions that the authors consider vital for securing the future of Asia’s tropical forest ecosystems (Chapter 18).

The appendices include a useful geological time chart. There’s even a 12-page practical guide for ecotourists seeking to explore the region’s forests.

The depth and comprehensiveness of the material reflects the dedication and scholarship of the authors, covering the ecology, evolution, biogeography and conservation of forest ecosystems across tropical Asia. The style is meticulous and erudite, except for the preface and the delightful, short, personal reflections at the start of each chapter, which add a refreshing autobiographical slant to this otherwise academic review. The writing is fluid and engaging, reminiscent of P. W. Richard’s famous book: *The Tropical Rain Forest* (Cambridge University Press, 1953). For students and researchers from India to Papua New Guinea, *TFTA* is a fitting companion to Richard’s classic volume.

*TFTA* is a classic “natural history” of Asia’s tropical forests. The bulk of it concentrates on intact forest ecosystems, describing their structural components and explaining relationships among them. However, in the last few chapters, the authors acknowledge the reality that the virgin forests they once knew as young researchers have been largely replaced with rubber and oil palm plantations during their lifetimes. Yet, this book is not a gloomy epitaph to

Asia's forests. The authors clearly hope that it will inspire the younger generation to restore at least some of the region's forest ecosystems to their former glory, by increasing readers' understanding of their nature and functioning. They recognize the hope, inherent in the potential for restoration, right from the dedication: "to the students of tropical Asia ... who may make the restoration of magnificent forests in tropical Asia a reality." To further this aspiration, however, it may have been useful to have included an overview of recent advances in forest-restoration techniques in the final chapter, *Future Forests*. Personally, I would have been interested to read the authors' opinions on the current debate on tree planting vs. assisted natural regeneration (aka active vs. passive restoration). A few other current topics that could have been usefully added or embellished in the final chapter include: the implications of logging bans in several Asian countries, the rise of community forestry, and the development of carbon trading as a potential funding source for forest conservation and sustainable management—all perhaps worthy of consideration when drafting the 2<sup>nd</sup> edition.

My only gripe about this book is that notes and references appear as numbered lists, in order of occurrence, at the end of each individual chapter, often referring to pages in *OTFTA* for more detailed treatments of some of the topics. Students, using the volume as a reference work to develop their research proposals, may have found a conventional full bibliography at the end of the book with references listed alphabetically by author, easier to use.

Nevertheless, this profoundly inspirational book is a must-buy for anyone interested in tropical forests. It is a major reference work, which well-deserves a place on the bookshelves of all teachers and students of tropical ecology, as well as natural history buffs across tropical Asia. On my bookshelf, it sits alongside P. W. Richards' famous work, where it deservedly belongs.

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