

New Book: Tropical Forest Fruits, Seeds, Seedlings and Trees

A 430-page book on fruit and seed recognition, germination characteristics, seedling growth, tree architecture, and post-architectural development.

Published in October 2014 by The Forest Research Institute Malaysia (FRIM), Kepong, Selangor, Malaysia.

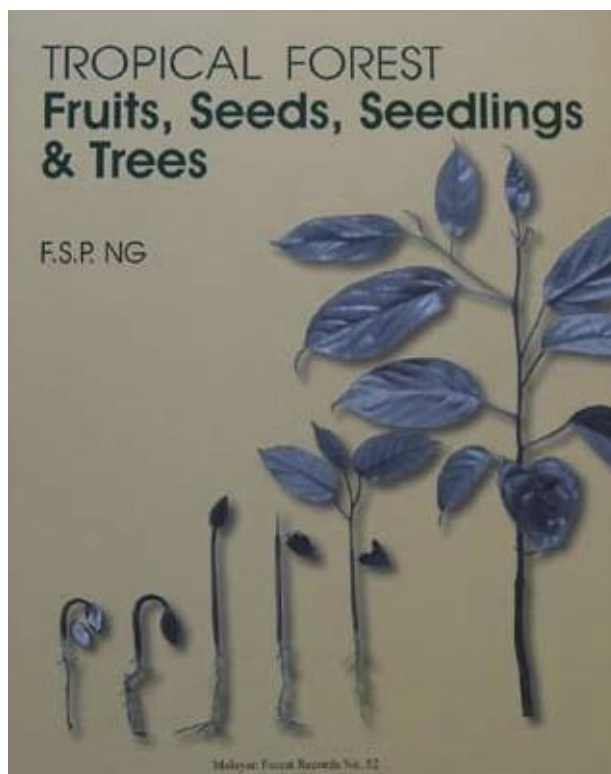
Author: F.S.P. Ng

The biggest, most majestic, and least understood of all living things are the giant trees of high forests. It has been said that we know more about the big animals like elephants and whales than about the big trees.

The idea for this book began to take shape in the 1960s when tropical forests were vast and challenging, and foresters considered it their duty to restore logged forests by collecting and germinating seeds and tending the seedlings until they grew into mature trees. This book was intended to be their reference manual. It was modelled on the monumental classic 3-volume book *Silviculture of Indian Trees*, by R.S. Troup, published in 1921.

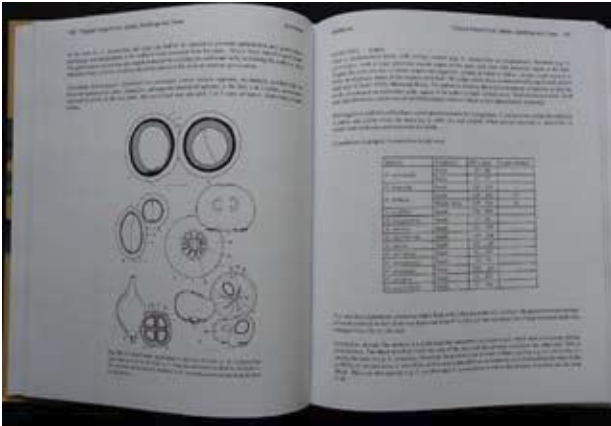
To ensure accuracy and consistency, all the relevant data were obtained first-hand by personal observation and experiment. Other sources were used to provide supplementary information. The book deals with over 600 species of tropical forest trees, representing 309 genera and 86 families. It describes the structure of their fruits and seeds, their germination characteristics, and their subsequent development.

At maturity, the big trees are characterised by towering cylindrical free-standing pillars rising 30 - 50 m or more above the ground, topped



by spreading leafy crowns. These pillars, which foresters call clear boles, provide the logs of the timber industry. Clear boles are 'clear' because all their branches have been shed and their scars smoothed over so that no traces of branching remain.

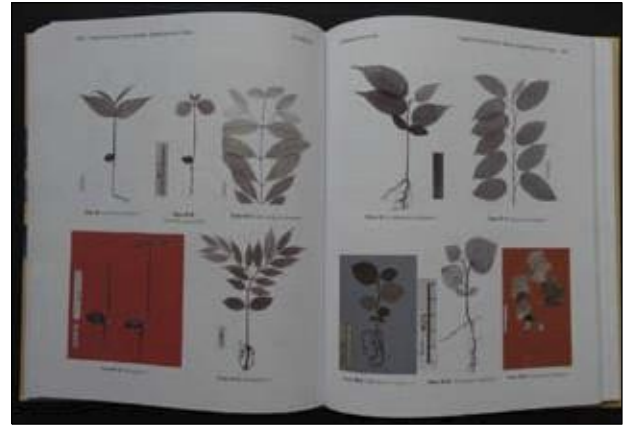
Trees are built from ground up incrementally, according to genetically predetermined programmes. These programmes were first recognised and described in the early 1970s as tree architectural models. The recognition



of these models was the exciting highlight of dendrology—the science of trees—of the 1970s and 1980s.

The elucidation of tree architectural models has greatly improved our understanding of trees, but it has also become gradually apparent that the form and structure of the canopy trees of high forests cannot be explained by tree architecture alone. As explained in this book, the architectural programmes or models specify the relationship between the leader shoot of a tree and its branches. This is an important relationship because without a clearly dominant leader shoot, it is not possible to make a tree. But to make a canopy tree, something more is needed. As the young tree reaches canopy level, its branches are cast off until all that is left of its architectural model is a clear bole.

The mature crown above the clear bole develops under a post-architectural programme in which the leader-and-branch model is replaced by a model of co-dominant limbs. Limbs are not shed cleanly like branches, and if they break, they leave behind large stubs. The development of a canopy tree requires an architectural programme to develop its sub-canopy crown,



of which the clear bole is the ultimate product, followed by a post-architectural programme to develop a mature crown of co-dominant limbs.

Through the 1970s and 1980s, forest nurseries were maintained in every forest district in Peninsular Malaysia to raise seedlings for planting. This practice is now continued strongly in Sabah, but has lapsed in the Peninsula, where forests are being left to regenerate themselves. Most forest nurseries have closed, and the ability to recognise fruits, seeds, seedlings and trees is rapidly being lost through the retirement of senior staff. Commercial nurseries have come into operation, raising forest trees for establishment in urban areas, but the range of species they grow is only a fraction of the diversity of tropical forests. The future of many species now hangs in the balance, for without greater effort to propagate and grow them to maturity, they will surely become extinct.

This book is sold at RM250 at the bookshop in FRIM, Kepong. Weighing 1.86kg, the book is 430 pages long and crammed with germination data, line drawings of fruits and seeds, photographs of seedlings, and illustrations of tree form and structure.

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