

**FLORA  
of  
SINGAPORE**

**Volume 1**



# FLORA OF SINGAPORE

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# FLORA of SINGAPORE

Volume 1

INTRODUCTION

Edited by

D.J. Middleton, J. Leong-Škorničková & S. Lindsay



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[www.nparks.gov.sg](http://www.nparks.gov.sg)  
[www.sbg.org](http://www.sbg.org)

Tel: 65-64717361

Fax: 65-64737983

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Front cover: *Kopsia singaporensis* Ridl.

Back cover: *Zingiber singaporensis* Škorničková (left); *Tectaria singaporiana* (Wall. ex Hook. & Grev.)  
Copel. (centre); *Riccardia singaporensis* Schiffn. (right)

All painted by Waiwai Hove. Funding for the artwork is made possible by a generous donation from Mr Tan Jiew Hoe through the Garden City Fund, a registered charity and Institution of Public Character established by the National Parks Board Singapore. For more information, visit [www.gardencityfund.org](http://www.gardencityfund.org).

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## PREFACE

*“Flora here luxuriates in endless varieties, where she finds soil, climate and everything congenial.”*

Dr William Jack  
(in a letter dated 8<sup>th</sup> June 1819 to Dr Nathaniel Wallich)

Singapore is nestled within the Malay Archipelago, which is considered to be one of the world’s richest centres of biodiversity with an estimated 45,000 plant species occurring naturally in its rain forests and other habitats. The island was described as being covered with lush, dense tropical rain forests when Sir Stamford Raffles first arrived in 1819. This marked the beginning of Singapore as a British trading port in the Far East, which not only brought about the introduction and cultivation of economically important plants such as nutmeg, cloves and cocoa, but also sparked the beginning of botanical surveys and discoveries on the island. The early botanists who collected in Singapore included Nathaniel Wallich and William Jack who described several species, such as the narrow-lidded pitcher plant (*Nepenthes ampullaria*), slender pitcher plant (*Nepenthes gracilis*) and Raffles’ pitcher plant (*Nepenthes rafflesiana*), from specimens collected in Singapore as early as 1819.

However, the change in the landscape of the island city-state also meant that the coverage of primeval vegetation would start to decline, giving way to agriculture and also to meet the demands of the growing population (Corlett, 1992). Despite the historical decline in natural vegetation, the remnant forests that are being protected in Singapore, though small in size and fragmented, are important and continue to harbour rich biodiversity (Turner et al., 1994). As a result of frequent surveys and through the research efforts of our botanists and other NParks staff in recent years, many native plant species thought to have been extirpated have been rediscovered. New records of native plants have been documented and new species of plants have been described from the pockets of forest all over Singapore, including three endemic species – *Zingiber singaporense* (the Singapore Ginger), *Hanguana rubinea* and *Hanguana triangulata*. This was most unexpected as the loss of forest habitats would have been expected to result in a corresponding significant loss of biodiversity. More importantly, this demonstrates the value of protecting and conserving the remaining forest fragments and their abundant biodiversity (Turner & Corlett, 1996). Therefore, it is timely that we embark on the Flora of Singapore project to carefully and systematically examine, document, and bring together all the botanical and taxonomic information from past and present research and surveys.

Floras give us a comprehensive account of plants found and recorded in a geographic area. The Flora of Singapore project will undoubtedly be an invaluable resource for biodiversity conservation and will lay the foundation for other areas of biological and ecological research in Singapore. Over 14 volumes, the Flora of Singapore will showcase the diversity of plants in Singapore as we continue to discover and learn more about the richness of our habitats in Singapore.

Kenneth Er  
Chief Executive Officer  
National Parks Board



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The knowledge summarised in this volume has grown from the passion and dedication of generations of botanists, conservationists, natural historians, curators, curatorial assistants, librarians, and all of the people who supported them in their work. This enthusiasm continues to the present day in the staff of the Singapore Botanic Gardens, and the rest of NParks, without whom we would not have been able to begin or continue this project. We are especially grateful to Dr Leong Chee Chiew, Deputy CEO of NParks, Dr Nigel Taylor, Group Director of the Singapore Botanic Gardens, Mr Ng Cheow Kheng, Group Director of the Horticulture and Community Gardening Division, the heads of the SBG branches, and the staff of the Research & Conservation Branch, Native Plant Centre, National Biodiversity Centre and Conservation Division, in particular Nura Abdul Karim, Zakiah bte Agil, Peter Ang, Ang Wee Foong, Parusuraman Athen, Aung Thame, Lily Chen, Li Li Chin, Sagunthera Davi, Ho Boon Chuan, Ali Ibrahim, Bazilah Ibrahim, Hassan Ibrahim, Gillian Khew, Khoo-Woon Mui Hwang, Koh Sin Lan, Koh Teng Seah, Serena Lee, Paul Leong, Derek Liew, Reuben Lim, Lim Weihao, Lua Hock Keong, Ng Xin Yi, Matti Niissalo, Juriah bte Sabudin, Christina Soh and Felicia Tay. The work has often been ably assisted by volunteers and by interns from Singapore's universities and polytechnics.

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