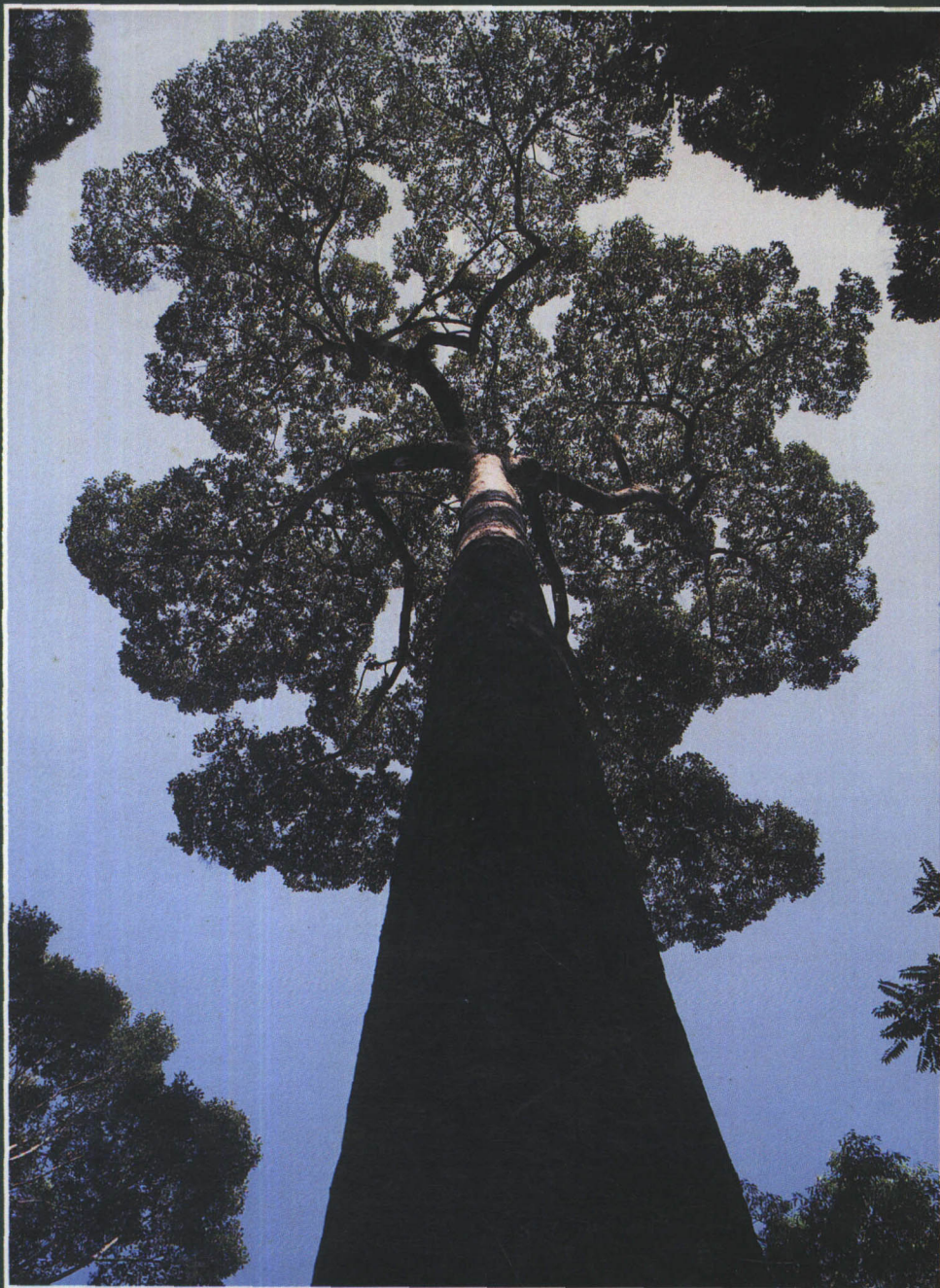


Vegetation and Vascular Flora of Doi Sutep–Pui National Park, Northern Thailand



J. F. Maxwell and Stephen Elliott

THAI STUDIES IN BIODIVERSITY

- No. 1 (1997) T. Radanachalee and J. F. Maxwell. *List of Weeds Reported in Thailand*
No. 2 (1998) P. Poonswad (ed.). *The Asian Hornbills: Ecology and Conservation*
No. 3 (1998) Y. Chaimanee. *Plio-Pleistocene Rodents of Thailand*
No. 4 (2001) C. Swennen, R. G. Moolenbeek, N. Ruttanadakul, H. Hobbelink, H. Dekker
and S. Hajisamae. *The Molluscs of the Southern Gulf of Thailand*
No. 5 (2001) J. F. Maxwell and Stephen Elliott. *Vegetation and Vascular Flora of
Doi Sutep–Pui National Park, Northern Thailand*

Thai Studies in Biodiversity Editorial Board

Warren Y. Brockelman, Chairman, Editorial Board

Visut Baimai, Director, BRT Program

Morakot Tanticharoen, Director, BIOTEC

M.R. Jisnuson Svasti, Editor, Journal of the Science Society of Thailand

Sompoad Srikosamatara, Mahidol University

Chamlong Phengklai, Royal Forestry Department

Nongluck Chomphuvises, Secretary, BRT Program

Vegetation and Vascular Flora of Doi Sutep–Pui National Park, Northern Thailand

J. F. Maxwell and Stephen Elliott

CMU Herbarium, Department of Biology, Faculty of Science,
Chiang Mai University, Chiang Mai



Published by

The Biodiversity Research and Training Program (BRT)

With support from

The Thailand Research Fund (TRF)

The National Center for Genetic Engineering and Biotechnology (BIOTEC)

The National Science and Technology Development Agency (NSTDA)

In Collaboration with

The Science Society of Thailand

Published and distributed by the Biodiversity Research and Training Program (BRT)
5th Floor, NSTDA Building, 73/1 Rama VI Road, Rajdhevee, Bangkok 10400, Thailand
Tel: (662) 644 8150-9 Fax: (662) 644 8106 E-mail: eed@biotec.or.th
<http://brt.biotec.or.th>

Copyright © 2001 by The Thailand Research Fund (TRF) and National Center for Genetic Engineering and Biotechnology (BIOTEC), National Science and Technology Development Agency (NSTDA). No part of this book may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval systems, without permission in writing from the Publisher.

Suggested method of citing: Maxwell, J.F. and S. Elliott. 2001. Vegetation and Vascular Flora of Doi Sutep-Pui National Park, Northern Thailand. *Thai Studies in Biodiversity* No. 5: 1-205.

Cover: *Dipterocarpus costatus* Gaertn. f. (Dipterocarpaceae) is one of the most obvious and spectacular indicator species of mixed evergreen + deciduous, seasonal, hardwood forest in northern Thailand. In Doi Sutep-Pui National Park it is found from 500 to 1150 m elevation, flowers from December to February, fruits during May-August, and is evergreen. Photo: Warren Brockelman, east side of Doi Sutep, along the road to Montatahn Falls, c. 700 m, April 1997.

Printed in Bangkok, Thailand

ISBN: 947-7360-61-6

Price: 10 USD

CONTENTS

	Page
Foreword	iii
Preface	v
Abstract	vii
Acknowledgements	viii
Part I—A Reassessment of the Forest Types of Thailand, by <i>J. F. Maxwell</i>	
Introduction	1
Background	1
Pioneer Work	2
Development of Regional Forest Classifications	3
Rain Forests	9
Advantages of the New Forest Classification Scheme	12
Conclusions	16
Future Research	16
Eco-Pornography	17
Part II—The Vegetation of Doi Sutep–Pui National Park, by <i>J. F. Maxwell & Stephen Elliott</i>	
Introduction	21
Etymology of ‘Sutep’	25
Geology	25
Climate	25
Previous Botanical Research on Doi Sutep–Pui	26
Initial Literature on the Flora of Doi Sutep–Pui	27
Teak Forest and Bamboo + Deciduous, Seasonal Forest	40
Deciduous Dipterocarp–Oak, Seasonal Forest	42
Mixed Evergreen + Deciduous, Seasonal Forest	45
Primary Evergreen, Seasonal Forest Without Pine	46
Primary Evergreen, Seasonal Forest With Pine	49
Summit Flora	50
Disturbed Areas and Secondary Growth	51
Cultivated Plants	52
Settlements and Home Gardens	53
Ornamental Plants	54
Comparisons Among the Forest Types	54
Part III—Annotated Enumeration of the Vascular Flora of Doi Sutep–Pui National Park, by <i>J. F. Maxwell</i>	
Enumeration	59
Summary of Collecting Results in Doi Sutep–Pui National Park (1987–2001)	59
New Species	60
New Records	60

Emended Descriptions/Notes	60
Tropophylly	61
Database	63
Part IV—Exploitation and Conservation, by <i>Stephen Elliott</i>	
Conservation Value of Doi Sutep–Pui National Park	155
Threats to the Botanical Diversity of Doi-Sutep–Pui National Park	156
Fire	158
Roads	159
Extinct, Extirpated, or Endangered Plant Species	159
Effects of Extirpation of Animal Species on Plant Communities	160
Current Conservation Management of Botanical Richness in the National Park	162
Fire Prevention	164
Controlling Access	164
Conservation and Re-introduction of Endangered or Extirpated Species	164
Management of Key Animal Species	165
Conservation Management Recommendations	165
Deforestation	165
References Cited	167
Photographs	173
Index of Taxa	179

FOREWORD

"Biodiversity" has become the catchphrase and rallying point for conservation and the environment during the last ten years, and it promises to remain so well into the next century. This is because ecologists and conservation biologists have come to the view that loss of species, their genes (through decline in population size), and their habitats is the most serious environmental problem facing us. Loss of species is irreversible over the time scale of our own species, and loss of many habitats is irreversible over our own lifetimes. Species will disappear fastest from limited, insular, or fragmented areas. The remaining natural forest areas in Thailand are highly fragmented. Surveying current species diversity in natural habitats, especially forests, and monitoring the rates of species loss over the next century are high priorities for conservation, because we need to determine which areas are most at risk and which offer the most promise.

There are few areas of significant size in Thailand for which we have a near complete list of vascular plants. Thanks to the authors of this volume, we now have such a list for Doi Sutep-Pui National Park, a forest island of about 261 km². There is no other forest area of comparable size in Thailand that is so well studied botanically, or which has such a high list of species. Incredibly, this relatively small park contains approximately 20 percent of the vascular plant species of Thailand. The secret to its high biodiversity probably lies in the broad range of elevation zones and habitats present, spanning the deciduous lowland forest to the moist subtropical to the cool, nearly temperate climate of the mountain tops. Nevertheless, one wonders how many species would be recorded in other areas if every knoll, ravine, and seep were so closely inspected for plants with the sustained, steadfast determination that Maxwell has applied to Doi Sutep-Pui.

J. F. Maxwell started his botanical career in Thailand in January of 1969, first botanizing more as a hobby, then a year later as a professional activity. Most of his career, his intense interest in collecting and learning about different species has been his prime motivation, often in spite of the need to also make a living. During 1970-75 he worked in the Herbarium, Department of Agriculture, Bangkok (BK). After nearly a year at FAO (with the TigerPaper), he became a student in botany at the University of Singapore, earning a master's degree. During 1980-84 he served as a curator of the Herbarium, Botanic Gardens of Singapore (SING). He returned to Thailand in mid-1984 to develop the herbarium at Prince of Songkla University (PSU), Hat Yai, the largest university in South Thailand. From there he moved to Chiang Mai University in July of 1987 where he established the CMU herbaria. Maxwell's publications have been profuse and continuous throughout his career and his well-known collections have been numerous and meticulous.

Stephen Elliott, another long-term resident of Thailand, obtained his Ph.D. degree from the Department of Forestry and Natural Resources of Edinburgh University in 1985, specializing in the ecology of plant-animal interactions. Following postdoctoral research projects on ethnobotany and forest ecology in Indonesia and Africa, he joined the Biology Department of Chiang Mai University where he has been teaching ecology and conservation biology. Recognizing deforestation as one of the most serious problems in northern Thailand, he has focused his research on developing techniques of restoring deforested or degraded areas. To achieve this aim, he co-founded, with Dr. Vilaiwan Anusarnsunthorn, the Forest Restoration Research Unit (FORRU), whose main work site is situated on the mountain at the national park headquarters. There, a team of workers and students work with Forest Department authorities

and local tribal people to germinate and plant seedlings of native species of trees. In this respect, the FORRU effort really deserves to be called reforestation much more than the widespread planting of monocultures of pines or non-native eucalypts.

Elliott's main contribution to the flora enumeration has been collaboration with Maxwell on forest transects on the mountain and construction of the database in which are stored species names, habit, habitat, phenology, and other useful information about each species. Without such a database the compilation would have been difficult if not impossible to complete and to publish.

The forest vegetation classification set forth by the authors offers some important differences from the one (or ones) presently in wide use in Thailand. It seems destined to raise some eyebrows and cause controversy. I have reviewed it carefully and have urged Maxwell to explain specifically in what ways his system differs from the current ones, so that further discussion can focus on productive issues. In some instances it just involves some new terminology, but in others it challenges the distinctions between the currently recognized associations. One of the important recommendations that arise is that vegetation types should be based on analysis of the entire assemblage of species and not on just a few dominant tree species important to commerce.

Ecologists in Thailand have become complacent about the current forest classification system and do not seem to care whether it makes any biological sense, is consistent, or is supported by any quantitative analysis. In fact, it was created primarily by (or for) foresters with some floristic knowledge, but no analytical tools for ecological classification, primarily for the convenience of recognizing harvestable timber. Maxwell has raised some important issues that should be discussed. I fully support his attempt to challenge the status quo, and he has plenty of field experience to justify it. But it is clear that our forest classification systems cannot be improved much without much additional analysis and better definition of the criteria used.

This landmark floristic inventory provides the most powerful argument for implementing measures for protecting the forests of Doi Sutep-Pui from continued degradation and abuse. This national park is somewhat unusual in that settlement and destruction were increasing apace when it was created; hence the existence of so many enclaves of human activity within its borders. In a sense we should be thankful that any forest at all was preserved so close to the largest city in the North. The authors have pointed out many vegetational changes and losses of species that have occurred during the last hundred years or more. Nevertheless, the biodiversity present is still outstanding in species richness and luxuriance, and most of it can be saved if we make the effort. Its proximity to Chiang Mai greatly enhances its value.

Warren Y. Brockelman
August 2001

PREFACE

This monograph on the vegetation and vascular flora of Doi Sutep–Pui National Park is the result of a collaborative effort which started in July 1987. Both myself and Dr. Elliott were new to Chiang Mai University and northern Thailand at this time and Doi Sutep–Pui was the closest and most interesting place for us to begin learning about the vegetation of the region. We were surprised to find out that a proper flora of Doi Sutep–Pui had never been written, although it was the first place in northern Thailand to be studied botanically and had also been a very popular collecting locale for both Thai and foreign botanists since the 1950's. We also quickly realized that there was no conclusive vegetational analysis of this mountain or, in fact, for the entire kingdom. In late 1988 I published a paper on the vegetation of this mountain which differed significantly from all previous papers on this subject. A series of short papers of botanical notes on plants collected on Doi Sutep–Pui and other areas in northern Thailand was started in 1989. Our first joint paper about a transect survey in the lower elevations of Doi Sutep was published in 1989. Since that time we have gained much botanical experience and expertise on Doi Sutep–Pui. In March 1992 I joined the Biology Department after being released from the Faculty of Pharmacy where the herbarium I started was discontinued. A new CMU herbarium was established at the Biology Department which today contains over 18,500 specimens. The CMU Herbaria, including slightly over 10,000 specimens at the Pharmacy Herbarium, amounts to over 28,500 specimens and has by far the largest collection of any university in Thailand. This is the third largest herbarium in Thailand and one of the most active in the kingdom. A plant database was also initiated in 1992, initially for Doi Sutep–Pui and later for many other areas, mostly in northern Thailand. The first of our M.Sc. students doing work on Doi Sutep–Pui completed her work in 1994. In November 1994, the Forest Research Restoration Unit was established on Doi Sutep. This is a joint project between Chiang Mai University and Doi Sutep–Pui National Park, which we helped to create and develop with the assistance of several specialists in nursery techniques and forest restoration. The development and operation of the unit would have been impossible without detailed knowledge of the vegetation and flora of this mountain.

Since 1992, with the development of the CMU Herbaria and botanical database, we have often been asked to provide information on the flora of Doi Sutep–Pui National Park and other areas to people with legitimate requests. We have, however, never released by publication or internet the information from Doi Sutep–Pui National Park, mainly since we have been concerned about plagiarism and the fact that we never really felt that the research was complete. By January 1999, Dr. Warren Brockelman suggested that we submit a monograph of our work in Doi Sutep–Pui National Park for publication in the new monograph series called *Thai Studies in Biodiversity* published by the Biodiversity Research and Training Program in Bangkok.

During this time it was decided that in order to properly explain the vegetation in Doi Sutep–Pui National Park it was necessary to include a chapter on the vegetation of Thailand. This proved to be more of a challenge than originally anticipated since there have been many different, often confusing, systems presented. It was, therefore, necessary to devise a new system since all previous publications on this subject were considered to be inadequate. My simplified, but concise, system is presented in Part I.

Part II includes our analysis of the vegetation of Doi Sutep–Pui National Park. It is essentially the product of our own work which is presented in detail. Although we have reviewed previous major botanical work in the national park, we have conscientiously avoided adopting or accepting most of the terminology and plant lists available. We have been surprised by the amount of incomplete and inaccurate botanical work done in this national park. It has, therefore, been our ultimate goal to present our work objectively and with high professional standards.

The third part, Part III, is an annotated enumeration of the vascular flora in Doi Sutep–Pui National Park. After over 13 years of personal observations and refinement of the botanical database, we feel that it is as close to perfection as we can make it— unless we postpone publication for another decade merely to change some minor phenological details, alter a few names, or add a few more species.

Management and conservation in the national park are critical issues affecting the vegetation of the park and are, therefore, covered in some detail in Part IV of the monograph. Problems of fire, watershed management, encroachment for agriculture, and tourism development all continue to erode biodiversity and have not yet been satisfactorily addressed by the local government, the park authorities, or local people. To prevent further loss of species and habitats, degradation of water resources, contamination of soil, and commercialization of the park, immediate measures are necessary. Some suggestions are put forward in this part. From the species listed in this monograph as having disappeared or become endangered, it is obvious that current protective measures are ineffective. Unless conservation of the national park becomes a higher priority than exploitation, the plants, animals, and other environmental resources which the park is meant to protect will continue to decline.

J.F.Maxwell
May 2001

Abstract

Many systems of forest classification have been proposed for Thailand, but almost all are impractical because of their complexity, botanical inconsistency and/or impracticability, incredibility, or ecological unsuitability. A new system is proposed in which seasonality, vegetational structure, floristic composition, and elevation are the salient parameters. The original interpretation of rain forest as ever-wet forest is adopted here; thus because of seasonality throughout Thailand, rain forests are not considered to exist in the kingdom. The results of a 13 year study of the flora and vegetation in Doi Sutep-Pui National Park are highlighted in order to explain and give credibility to the forest types of northern Thailand which are the most complex and diverse in the country.

There are two basic forest types in Thailand, viz. deciduous and evergreen. Deciduous forests, especially in northern Thailand, are found from sea level to c. 850 m. Evergreen forests can be found from sea level to 2231 m—the highest point in Thailand. The dry season in northern, central, and north-eastern Thailand lasts from about November to May, while in the peninsula it lasts for 4–8 weeks during March–May. There is a mixed evergreen + deciduous, seasonal forest in some lowland forested areas from c. sea level to c. 850 m, while in northern Thailand it is from c. 850 to 1000 m. Above 1000 m is primary, evergreen, seasonal forest. The two species of pine found in Thailand can be found from about 600 to 1800 m in northern Thailand and from lower than 100 m in the Northeast. Forest destruction along with fires in the dry season have resulted in secondary and tertiary growth throughout the country.

An annotated enumeration of 2247 species, *etc.* of vascular plants found in the national park is given. The compilation includes habit, habitat, forest type, elevation, abundance, and flowering, fruiting, and leafing phenologies.

At least 512 species, *etc.* of vascular plants have been described during the past c. 90 years, that is since the first botanists started collecting, from the national park—the most from any single locale in Thailand. The enumeration includes 457 of these species while 55 were not rediscovered. Forest destruction and excessive exploitation are the main reasons why 55 of these new species, in addition to several other species recorded earlier, have become either very rare or extirpated from the national park.

One new species (since synonymized), two new combinations, and new records of one family, two genera, and 14 species are given here, along with emended descriptions/taxonomic notes on 13 species based on specimens collected during this research in the national park.

Conservation of diminished biodiversity in the national park is discussed where various aspects of exploitation, *e.g.* deforestation, 'development,' fire, hunting, *etc.* are highlighted. Reforestation, an essential part of alleviating and rehabilitating the vast amount of environmental destruction which has occurred in the national park, is also included.

ACKNOWLEDGEMENTS

During more than thirteen years of study in Doi Sutep–Pui National Park we have been quite fortunate to have received assistance, in varying degrees, from many sources. We would like to thank all of the following for their encouragement and/or participation in our work.

Institutional support was given by the Faculty of Pharmacy, Chiang Mai University, until the end of October 1991 and by the Biology Department, Faculty of Science, Chiang Mai University, throughout the project. Some financial support was provided by Wildlife Conservation International during the beginning of our work. World Wildlife Fund U.S.A. supported establishment of the botanical database. Grirk Pakkad, our computer technician and student, has organized and maintained the CMU botanical database since its inception in 1992. Supadarath Suteepornwiroch, herbarium technician at the Faculty of Pharmacy, and Pranee Palee, herbarium technician and assistant in the Biology Department, have assisted in specimen collection and curation during our research. Mrs. Somporn Hirandramdej (Faculty of Pharmacy) and later Dr. Vilaiwan Anusarnsunthorn (Biology Department) have provided competent administrative support during our studies. Sai Jai Ngundahn has assisted us since the beginning of the project in July 1987. The administration of Doi Sutep–Pui National Park has cooperated with us throughout the project.

Professional botanical assistance, especially in specimen identification, has been received in the following families from:

Apocynaceae	<i>D. J. Middleton</i>
Araceae	<i>W. Hetterscheid</i>
Araliaceae	<i>H. J. Esser</i>
Athyriaceae	<i>P. Hovenkamp</i>
Burseraceae	<i>Rachan Pooma</i>
Cucurbitaceae	<i>B. & W. de Wilde</i>
Euphorbiaceae	<i>H. J. Esser</i>
Gesneriaceae	<i>B. L. Burtt</i>
Gramineae	<i>J. F. Veldkamp</i>
Gramineae, Bambusoideae	<i>C. Stapleton</i>
Labiatae	<i>Somran Suddee</i>
Magnoliaceae	<i>H. Nooteboom</i>
Melastomataceae	<i>S. Renner & N. Cellinese</i>
Musaceae	<i>H. Volkaert</i>
Orchidaceae	<i>G. Seidenfaden</i>
Palmae	<i>J. Dransfield</i>
Polygalaceae	<i>C. A. Pendry</i>
Zingiberaceae	<i>I. Theilade</i>

We have also been fortunate in receiving assistance, especially in literature and data acquisition, from: Warren Brockelman, Frank Almeda, J. F. Veldkamp, Kittiya Suriya, Alain Mauric, Martin v. d. Bult, Martin Greijmans, W. K. Tan, Ruth Kiew, M. Hara, I. Turner, Tom Croat, Peter Stevens, Wiwat Totirakul, Chatchai Tantasirin, Sudarat Zangkum, J. Knoll, D. Schmidt–Vogt, Rachan Pooma, C. Kuarak, Chamlong Phengklai, and Becky Scott.

The upland weed collections of Roswita Wehner and Liane Chamsai have been very useful by providing us with much supplementary information which we are grateful to have.

Dr. Warren Brockelman, a friend and collaborator of ours for many years, is especially thanked for not only encouraging the production of this opus, but also critically reviewing and editing several of its drafts. Part I could not have been satisfactorily completed without his constant assistance.

Rungtiwa Panyayod, our computer typist, is gratefully thanked for her skill and patience in dealing with our numerous additions, changes, corrections, *etc.* of the manuscript. Janice Kerby is thanked for proof reading our plus Rungtiwa's work.

We would like to thank John Milne for his tremendous job in editing and vastly improving the final version of the manuscript.

Final type setting and organization of this work was professionally done by Urai Toobhawm. We are grateful for her expertise and cooperation.

It has been our pleasure to supervise various botanical and ecological research projects in Doi Suthep-Pui National Park from which we were able to study certain areas in detail. The details of these projects are:

- Adhikari, B. P. 1996. Relationship Between Forest Regeneration and Ground Flora Diversity in Deforested Gaps in Doi Suthep-Pui National Park, Northern Thailand. M.Sc. thesis, Graduate School, Chiang Mai University; 111 pp.
- Hiranramdej, S. and J. F. Maxwell. 1991. Research Book of Study and Herbarium of Medicinal Vascular Flora of Doi Suthep-Pui. Faculty of Pharmacy, Chiang Mai University (in Thai); 229 pp.
- Kafle, S. K. 1997. Effects of Forest Fire Protection On Plant Diversity, Tree Phenology, and Soil Nutrients in a Deciduous Dipterocarp-Oak Forest in Doi Suthep-Pui National Park. M. Sc. thesis, Graduate School, Chiang Mai University; 92 pp.
- Kopachon, S. 1995. Seed Germination and Seedling Development of Dry Tropical Forest Trees: A Comparison Between Dry Season Fruiting and Rainy Season Fruiting Species. M. Sc. thesis, Graduate School, Chiang Mai University; 86 pp.
- La Karimuna. 1995. A Comparison of Ground Flora Diversity Between Forest and Plantations in Doi Suthep-Pui National Park. M. Sc. thesis, Graduate School, Chiang Mai University; 107 pp.
- Meng, M. 1997. Effects of Forest Fire Protection on Seed Dispersal, Seed Bank, and Tree Seedling Establishment in a Deciduous Dipterocarp-Oak Forest in Doi Suthep-Pui National Park. M.Sc. thesis, Graduate School, Chiang Mai University; 89 pp.
- Pakkad, G. 1997. Morphological Database of Fruits and Seeds of Trees in Doi Suthep-Pui National Park. M. Sc. thesis, Graduate School, Chiang Mai University; 204 pp.
- Phuakam, A. 1994. A Survey of Herbaceous Ground Flora on the Eastern Side of Doi Suthep, Altitude 670-750 Meters. M. Sc. thesis, Graduate School, Chiang Mai University; 2 volumes, 478 pp.
- Sharp, A. 1995. Seed Dispersal and Predation in Primary Forest and Gap on Doi Suthep. M. Sc. thesis, Graduate School, Chiang Mai University; 81 pp.
- Sopsop, G. 1996. Effect of Land Use Patterns on Soil-Inhabiting Arthropods in Doi Suthep-Pui National Park. M. Sc. thesis, Graduate School, Chiang Mai University; 72 pp.

Editor's note: The spelling of Thai proper names in this monograph follows a personalized phonetic English transliteration which generally differs from that of the Royal Institute which is used on most official Thai maps and other documents. Below are listed the official spellings (right side) corresponding to some of the authors' spellings (left).

Chamadevi (Princess)

Doi Sutep

Daht Mawk

Haripunchai

Mawk Fah

Phuping Palace

Hmong

Nong Hoy Gow

Pah Ngeub

Mayo

Chang Kian

Doi Kuhn Tan

Lamphoon Province

Wat Prataht

Chamathewi

Doi Suthep

Tat Mok

Hariphunchai

Mok Fa

Phuphing Palace

Hu-Mong

Nong Hoi Kao

Pha Ngoeb

Maeo

Chang Khian

Doi Khun Tan

Lamphun Province

Wat Phrathat

PART I

A Reassessment of the Forest Types of Thailand

J. F. Maxwell

Introduction

The purpose of this part is to provide a clear and rational system for the classification of forest types in Thailand. A historical approach is made to trace the development of forest classification schemes as well as to provide insight on why such a bewildering assemblage of terminology has developed. A new, botanically and ecologically credible, system is also presented. Much emphasis is given to northern Thailand since this region includes the largest, most complex, and most diversified forests in the country.

Background

The forests of Thailand can be broadly divided into two categories, *viz.* deciduous and evergreen. The salient determining factor of these two forest types is soil moisture. Evergreen forests are found where soil moisture is plentiful, while deciduous forests occur where it is depleted during the dry season. The main reason why plants lose their leaves during the dry season is a response to water loss by transpiration when soil moisture is low.

Altitude is also important because of its effects on soil moisture. At higher elevations, soil moisture is rarely depleted because rainfall is greater due to orographic precipitation and temperatures are lower, leading to lower rates of evapotranspiration. Forests, therefore, tend to be evergreen at higher elevations.

Disturbance by man also has a marked effect on the vegetation, but mostly through its effects on soil moisture. Tree felling, fire, agricultural activities, and grazing open up the forest canopy, causing the soil to dry out, and lead to soil erosion, depletion of soil nutrients, and reduced plant growth. Lower primary production leads to less organic matter entering the soil and consequently reduced soil moisture-holding capacity. Only plants that are able to survive in more exposed, drier, and less fertile conditions can persist. Evergreen plants gradually die off and are replaced by deciduous plants and weeds. On degraded sites, deciduous plants and weeds often grow at higher elevations than they can in undisturbed places.

Fire has the most destructive impact on biodiversity, soil and watershed qualities, and stability of vegetational systems. Fire destroys seeds and seedlings, damages mature plants, eradicates soil organisms, many of which are vital for nutrient recycling; vaporizes biomass, and effectively degrades entire ecosystems (Maxwell, 1993).

Deciduous vegetation is more tolerant of fire, while evergreen systems are totally susceptible to its ravages. Fire combined with primitive agricultural systems, especially slash and burn, is a major reason why so much vegetation has become degraded. These factors cause soil erosion and diminished soil quality, and reduce water availability by damaging or destroying watersheds.

Other factors such as geology, especially bedrock, aspect, and slope can also affect the distribution, extent, or quality of forest types, but are less important than soil moisture.

Pioneer Work

Hosseus (1908), the first botanist to visit and collect Thailand's northern flora, recognized that much of this flora, especially in lowland regions and on Doi Sutep, strongly resembled that found in similar areas in Burma. Kurz (1877) describes these lowland forests as being quite seasonal, where the flora is leafless during the hot-dry months of November–May. Two kinds of deciduous forest are noted by Kurz, viz. “eng* or laterite forest” on the plains and “hill eng forest” on exposed ridges. *Dipterocarpus tuberculatus* Roxb. var. *tuberculatus* (“eng,” Dipterocarpaceae) is noted to be the characteristic tree species in “eng the Burmese name for some lowland dipterocarps or laterite forest.” “Hill eng forest” includes *Dipterocarpus tuberculatus* var. *tuberculatus* with *D. obtusifolius* Teijsm. ex Miq. var. *obtusifolius* and *D. costatus* Gaertn. f. These two kinds of forest have similar floras which often intermix. Kurz also mentions “low forests,” a third deciduous category, which has fewer Dipterocarpaceae and more *Tectona grandis* L.f. (teak, Verbenaceae) components. Hosseus (1908) indicates that “eng or laterite forest” should be called Dipterocarpaceae forest and “hill eng” as Dipterocarpaceae hill forest.

Kerr (1911) also recognized this “eng jungle” on Doi Sutep where it is known locally as “pah paa.” This forest extends from c. 350 to c. 700 m. Similar vegetation was encountered by Garrett & Kerr (1925) on their ascents of what was then Doi Angka and is now known as Doi Intanon. They referred to this lowland, fire-damaged, deciduous dipterocarp-dominated forest as “pa pe”.

Kurz (1877) distinguished other kinds of deciduous forests, viz. “dry forests” and “mixed forests”, both of which in pure form are floristically different from “eng” forests. He provides detailed lists of the most common trees in both “upper” and “lower” mixed forest. Upper mixed facies occur on rocky hills, while lower mixed vegetation is found in lowland and alluvial areas. The trees found in these two categories are basically similar, but of lower stature and with different undergrowth in lower mixed areas. Some predominant trees are: *Xylia xylocarpa* (Roxb.) Taub. (Leguminosae, Mimosoideae), *Tectona grandis* L. f. (Verbenaceae, teak), *Bombax insigne* Wall. (Bombacaceae), *Eugenia cumini* (L.) Druce (Myrtaceae), *Garuga pinnata* Roxb. (Burseraceae), *Lagerstroemia tomentosa* Presl (Lythraceae), *Vitex glabrata* R. Br. (Verbenaceae), *Kydia calycina* Roxb. (Malvaceae), *Anogeissus acuminata* (Roxb. ex DC.) Guill. & Perr., and *Terminalia bellirica* (Gaertn.) Roxb. (both Combretaceae).

Dry forests include many deciduous trees that are mixed with “eng” elements. Some of these include: *Flacourtia indica* (Burm. f.) Merr. (Flacourtiaceae), *Cratoxylum neriifolium* Kurz (Guttiferae), *Melia azedarach* L. and *Chukrasia tabularis* A. Juss. (both Meliaceae), *Ziziphus nummularia* (Burm. f.) Wight & Arn. (Rhamnaceae), *Holarrhena pubescens* (Buch.–Ham.) Wall. ex G. Don (Apocynaceae), *Strychnos nux-vomica* L. (Loganiaceae), *Vitex limoniifolia* Wall. ex Kurz (Verbenaceae), and *Hymenodictyon orixense* (Roxb.) Mabb. (Rubiaceae). Kurz's “dry” forests, because they include “eng” species and lack teak, conform to degraded, fire-prone, “mixed” forests in Thailand. These “mixed” forest are best interpreted as teak-dominated vegetation (Mahidol University, 1992 and 1995). Because of extensive and excessive exploitation, both “dry” and “mixed” forests were destroyed or very degraded on Doi Sutep during the time of Hosseus and Kerr. It should be noted here that *Pinus merkusii* Jungh. & De Vriese (Pinaceae) is often found in lowland deciduous dipterocarp-dominated, i.e. “eng”, forests from c. 650 to c. 950

*the Burmese name for some lowland dipterocarps

m in some places in northern Thailand (Maxwell *et al.*, 1995). Santisuk (1977) indicates that it can be found at c. 70 m in central and eastern Thailand. This species has apparently been extirpated from many areas, including Doi Suteh, since both Hosseus and Kerr do not mention anything about it.

Kerr indicated that above “eng” forest, from c. 675 to 1000 m, there is a mixture of deciduous and evergreen tree species which he referred to as an “oak jungle.” Hosseus calls it a “mixed oak-wood forest.” This kind of forest is fire-damaged, but not as much as in “eng” areas. The valleys are more evergreen and include some of the tallest trees, 40–50 m, in the region.

Above c. 1000 m undisturbed forests in the region are primary and evergreen and extend to the summit of Doi Intanon (2565 m)—the highest peak in Thailand. *Pinus kesiya* Roy. *ex* Gord. (Pinaceae) is also found at c. 1000–1800 m, especially on exposed, well-drained, fire-prone areas. Kurz refers to evergreen forests above 1000 m as “hill forests” which are subdivided into “damp” and “drier” categories. The “drier” areas include “stunted hill forests” on exposed ridges at elevations above c. 2300 m. Pine forests are included under hill forests.

Development of Regional Forest Classifications

Craib (1931) presents a brief and very basic account of the vegetation of Thailand. By inference from the style and content of this article, plus the fact that Craib never visited Thailand (Kerr, 1933), this rarely cited paper must have been written by Kerr. In any case, it is noted that about 70% of the country was forested at that time. The basic forest types are: “pa deng” (deciduous dipterocarp–oak), which is noted to include over 50% of the forested area of the Kingdom; mixed deciduous, dry evergreen, and tropical rain forest—which is found in the SE and the lower part of the peninsula. This is the first time that tropical rain forest has been noted in Thailand. Savanna, mangrove, salt marsh, “open hill,” pine, and secondary growth facies are also mentioned. The author also indicates that logging and agriculture have destroyed much of the original vegetation in the country.

Wilhelm Credner, a German geographer, who was apparently unaware of Craib’s paper, provided more details on a basic system of vegetation classification for Thailand (Credner, 1935). Eight vegetational types are discussed, *viz.* mangrove, alluvial plains and rice fields, tropical rain forest, evergreen monsoon forest, deciduous monsoon (teak) forest, dry forest, thorn–bamboo scrub, and pine–oak forest. Credner’s divisions and especially his vegetation map of Thailand (opposite p. 113) are basically correct, except for his use of “rain forest.” “Dry forest” corresponds to what is often called “savanna” occupying most of the NE part of Thailand, while “deciduous monsoon,” mostly in northern Thailand, includes all “eng” and teak associations.

H. G. Champion devised a classification system for forests in India and Burma in 1936 (Edwards, 1950). This system is divided into two basic divisions, *viz.* deciduous and evergreen, each with many subdivisions. This system, by necessity, is quite detailed and complex since it is based not only on ecological and floristic characteristics, but also on rainfall and elevation. Edwards’s revised classification, which was intended for Burma, renamed some of Champion’s categories and reassociated others. Most of these changes involved lowland deciduous forests. The transitional forest between lowland deciduous and evergreen forest was referred to as “semi-evergreen forest” by both authors.

Credner’s system, because of its simplicity, is far more applicable to Thailand than Champion’s system, which is too detailed and in most instances inflexible. In the case of deciduous forests,

Credner has “deciduous monsoon” and “dry forest” corresponding to basically teak and “eng” forests, respectively. Champion and Edwards subdivide both of these forest types into numerous categories with regional (edaphic) examples based on the presence or absence of bamboo and varying abundances of teak and other commercially valuable deciduous hardwood trees, *e.g.* *Xylia xylocarpa* (Roxb.) Taub. (Leguminosae, Mimosoideae), *Homalium tomentosum* (Vent.) Bth. (Flacourtiaceae), *Anogeissus acuminata* (Roxb. ex DC.) Guill. & Perr. (Combretaceae), *Lagerstroemia tomentosa* Presl (Lythraceae), and *Mitragyna rotundifolia* (Roxb.) O. K. (Rubiaceae). The numerous subdivisions of deciduous forest are based on various floristic and ecological factors, which often mix and are otherwise variable, especially due to disturbance.

Two Royal Forest Department publications (1950, 1962) on forest types in Thailand, distinguish four basic kinds of evergreen forest, *viz.* tropical evergreen, hill evergreen, coniferous, and mangrove. Tropical evergreen forests extend from sea level to *c.* 1000 m, while hill evergreen forested areas are above 1000 m. Two kinds of deciduous forest are noted: mixed (teak) and deciduous dipterocarp. The term “mixed” originated with Kurz (1877) who provided a detailed explanation of exactly what this kind of forest consisted of. Champion (1936) and Edwards (1950) referred to this forest type as “mixed deciduous,” a term which has been adopted by almost all other authors writing about the vegetation of Thailand. Credner (1935), more realistically, called this “mixed” forest “deciduous monsoon” forest. Mixed deciduous forests are further divided into three categories, *viz.* moist upper, dry upper, and lower. Moist upper mixed deciduous forest is said to include evergreen trees and merge into evergreen forest, *i.e.* the upper limits of teak. Dry upper areas are dominated by teak and include bamboo. Lower mixed deciduous areas lack teak, but have bamboo. The map (1963) accompanying the 1962 publication combines all mixed deciduous forests. No distinction has been made in either the 1950 or 1962 publications for a transitional forest existing between deciduous and evergreen forests. Moist upper mixed deciduous forest is, perhaps, an approximation of this transitional zone. The tree species, excluding teak, noted for these mixed deciduous forests are similar. These cumbersome and impractical categories have been uncritically lifted from the works of Champion and Edwards.

Samapuddi (1957) divides deciduous forests into mixed and deciduous dipterocarp—both of which are noted to be monsoonal (*i.e.* seasonal). His work otherwise follows the “official” (*i.e.* standard) version of the Royal Forest Department (RFD) from 1950. Loetsch (1957, 1957/58) distinguishes deciduous forests with dry dipterocarp and mixed deciduous monsoon forest with or without teak. Dry dipterocarp forest is also often associated with coniferous forest. Evergreen forests include tropical semi-evergreen, hill evergreen, and coniferous. Ogawa *et al.* (1961) include five major types of forest vegetation in northern Thailand, *viz.* savanna, with dipterocarp-savanna and mixed savanna formations; tall deciduous or monsoon (*i.e.* teak) forest, evergreen gallery forest, an ecotone of subtropical semi-evergreen forest, and temperate (above 1000 m) evergreen forest. All of these areas are quite seasonal with a distinct and prolonged dry season. The transitional zone between deciduous and evergreen forests from *c.* 800 to 1000 m is considered as an ecotone of sub-tropical semi-evergreen forest. Their impression of this zone is that of a mixture of lowland deciduous and upland evergreen species which vary in the amount and length of deciduousness of the lowland species (*i.e.* tropophylly). They do not consider this a distinct floristic region. In their opinion the upper limit of tropical components is between 1100 and 1300 m. Evergreen gallery forests are portrayed as an edaphic climax of tall

evergreen trees along streams and in shaded ravines below 1000 m elevation. More arid locations are said to become more semi-deciduous.

The basic RFD system is presented again in a review of forest types in Thailand in a paper about the vegetation of Doi Intanon (Robbins & Smitinand, 1966.). Lowland forests include: deciduous dipterocarp, mixed deciduous (teak), mangrove, and tropical evergreen forests. Upland forests (c. 1000–2576 m) are noted to be lower montane and include hill evergreen and coniferous forests.

Neal (1967), obviously relying heavily on previous literature on the vegetation of Thailand, reintroduced Craib's and Credner's term tropical rain forest for lowland evergreen forest. Tropical rain forests were said to exist in Chantaburi and Trat Provinces as well as peninsular Thailand where the rainfall is above 2500 mm/year. He also specifically stated that these regions are monsoonal—a direct contradiction of the original definition of rain forests (see below). Neal's statistical data are more original and provide some interesting perspectives on the status of Thailand's vegetation at that time (Table 1). He estimated that approximately 60% of Thailand (321,289 km²) was forested then. This estimate also included degraded primary and secondary growth, which were not specifically mentioned. Credner's (1935) vegetation map of Thailand, which specifically includes deciduous dipterocarp ("dry forest") and thorn-bamboo scrub formations, indicates that much more than 60% of the country was forested then. Our estimation of the present amount of primary forest cover in Thailand is about 15% and declining rapidly. This figure is based on a US NOAA II satellite AVHRR (advanced, very high resolution radiometer) mosaic of images taken during the dry seasons of 1992 & 1993 plus our own observations, especially in northern Thailand.

Table 1. Kinds and amounts of different forest types in Thailand according to Neal (1967).

Forest type	km ²	% of total vegetation
beach, freshwater swamp, savanna	12,524	4.6
mangrove	1,620	0.5
deciduous forest	224,902	70
1. deciduous dipterocarp	147,000	46
2. mixed deciduous with teak	65,000	20.2
evergreen forest	96,387	30
1. tropical rain	3,620	2
2. hill evergreen and dry evergreen forests	92,767	28
coniferous forest	2,378	0.7

Williams (1967) provides a concise discussion on the four basic criteria for vegetational classification, *viz.* floristic, physiognomic, bioclimatic, and holistic. Floristic information requires the most botanical effort to categorize the species of plants found in an area, their abundances and distributions, and kind (*i.e.* stage) of growth, *i.e.* climax. primary, secondary, *etc.* Physiognomy, a common method utilized by ecologists with limited floristic skills, involves the structure or appearance of the vegetation. It typically involves determining tree heights, spacing, stratification, and canopy size. Very often other parameters are also included, *e.g.* leaf size, abundance of lianas, epiphytes, *etc.*; and soil quality. Bioclimatic parameters involve climatic variables, *viz.* the presence or absence of seasonality, deciduousness, temperature ranges, and amount of rainfall. Although not noted in this part, I would also include elevation here. The holistic approach takes into consideration all factors which have an influence on the vegetation. It is the most conclusive method since it involves all the other three criteria.

Williams includes a very comprehensive and creditable report on Thai vegetation. His approach is basically holistic with extensive information concerning floristics, structural, and climatic data for several areas in Thailand. Deciduous and evergreen forests are separated. Deciduous forests included deciduous dipterocarp and mixed deciduous forests—the latter being divided into moist mixed, which has much teak, and dry mixed, which has much bamboo without teak. In addition to savanna, Williams also includes thorn woodland which is described as being an open, scrub, mostly evergreen, spiny, microphyllous vegetation which often has bamboo. From his list of species for this kind of vegetation, it is obvious that this is a kind of degraded, fire-maintained, secondary growth which, in fact, is mostly deciduous. Bamboos, palms, and successional growth, specifically primary succession, are also discussed.

Williams divides evergreen forests into rain and seasonal categories, although his criteria for the former are weak. His example for rain forest is at Ranong, at c. 8° north latitude, which has notable dryness in February–March. Moist forest is considered by him to be synonymous with rain forest. He does note that some ecologists consider moist forest as having lower rainfall than rain forest and also having dry and rainy seasons of approximately equal length (*e.g.* Kao (Khao) Yai National Park in the central part of the country). Unfortunately a satisfactory definition of lower and upper hill evergreen forests is lacking. Dry evergreen and semi-evergreen forests, at least according to Williams' lists, include many deciduous species, often with bamboo. It is quite apparent that these are disturbed, non-climax, forested areas. His map (# 4, p. 248) includes all evergreen forests as "evergreen (rain) forest," which is scattered and patchy throughout most of the country.

Whitmore (1975) discusses in detail the kinds of forest vegetation in the tropical Far East. Monsoon forests are those that are seasonally dry, while tropical rain forests are ever-wet. Deciduous forests include dry deciduous dipterocarp and tropical moist deciduous (teak). Evergreen forests are all considered rain forests. This includes beach, mangrove, and swamp vegetation—obviously inappropriate for Thailand because of seasonality. Pine is understood to be mixed with dry deciduous dipterocarp forest at 1000 m.

Smitinand (1977) divided mixed deciduous forests into the three categories noted above in the RFD publication of 1950. He also lists "dry deciduous dipterocarp" and savanna forests. His evergreen forests include: tropical evergreen, coniferous, swamp, and beach forests—all of which are noted to be monsoonal. Tropical evergreen forests include: tropical rain forests, dry or semi-evergreen forests, and hill or lower montane forests. This system was initially presented

in 1962, but remained unpublished until 1977. His concept of tropical rain forests, which are found in SE and peninsular Thailand from sea level to c. 600 m elevation, are areas where the annual precipitation is up to 2500 mm. Dry or semi-evergreen forest is found from sea level up to c. 500 m with an average rainfall of 1000–2000 mm. Hill evergreen forest is found above 1000 m with an average rainfall of 1500–2000 mm.

Smitinand *et al.* (1978) discuss the forest types of northern Thailand where evergreen and deciduous facies are distinguished. The vegetation is noted to vary because of elevation, soil, rainfall, and land use. A sensible and basically accurate discussion of the effects of fire, shifting cultivation, watershed quality, and soil conservation is also presented for upland areas. Deciduous forests include: dry deciduous dipterocarp, dry mixed deciduous, and moist mixed deciduous. Dry deciduous dipterocarp forest is found from 300 to 1000 m elevation in areas with less than 1000 mm of rain each year. Dry mixed deciduous forested areas are noted to be found scattered in both lowland and upland areas where rainfall is 600–1000 mm per year and include teak. Moist mixed deciduous forest occurs in places up to 600 m with rainfall of 1000–1500 mm annually and also has teak.

Evergreen forests include: lower montane, dry evergreen, and coniferous. Lower montane areas are found above 1000 m and have 1500–2000 mm of rainfall each year and are said to be places with “constant high humidity.” Dry evergreen forested areas are found scattered in areas below 1000 m, which have 1000–2000 mm of rain annually. Coniferous forest is said to be edaphic, found on exposed ridges with extensive erosion, with 1000–1500 mm of rain each year. No elevation range is given for this open, presumed 3-storied habitat.

This series of botanically imprecise, confusing, and often contradictory systems is further complicated by vegetation reports of Doi Chiang Dao, Chiang Mai Province which, at 2175 m, is the highest limestone mountain in Thailand (Smitinand, 1966; Santisuk, 1985 and 1998). Smitinand (1966) based his ideas on floristics, elevation, and slope aspect. The lowlands (“350”–600 m) have dry evergreen forests, while moist upper mixed deciduous forest exists from 600 to 900 m, with *Tectona grandis* L. f. (Verbenaceae, teak) and several other deciduous tree species and bamboo at 700–850 m. A transitional zone between moist upper mixed deciduous forest and open hill evergreen (moist lower montane (rain) forest) is present at 900–1100 m. Lower hill evergreen forest is found from 1100 to 1300 m and upper hill evergreen forest at 1500–2200 m. The exposed limestone slopes and outcrops have numerous “temperate” species—many of which were described by Hosseus and Craib from collections by Hosseus and Kerr—and are known only from there (*i.e.* endemic). No mention is made about deciduous dipterocarp–oak and degraded primary forests, or secondary growth.

Santisuk (1985) follows Smitinand’s (1966) concept of lowland vegetation with mixed deciduous and semi-evergreen forests. Upland forests are divided into lower montane (hill evergreen), oak–pine, and subalpine vegetation—the latter having many presumed temperate species.

Santisuk (1998) considers moisture and elevation to be of paramount importance in his second analysis of the vegetation of Doi Chiang Dao. Lowland vegetation, *i.e.* below 1000 m, includes seasonal rain (dry evergreen) and tropical mixed deciduous forests. Montane vegetation is present above 1000 m with lower montane rain forest (1000–1900 m), lower montane oak forest (at the same elevations), and upper montane scrub (1900–2190 m). Lower montane rain forest and lower montane oak forest are found in the same elevation range with the former in more

moist and shaded places, while the latter is found in more exposed places.

From my own work on Doi Chiang Dao (Maxwell, 1992 and 1998) the lowland vegetation has extensive deciduous dipterocarp–oak (**dof**) and degraded deciduous hardwood + bamboo (*i.e.* former teak, **bb/df**) forests. A mixed evergreen + deciduous seasonal forest is present from as low as 450 m, but due to extensive forest destruction it is often only found from 850 to 1000 m, if at all. Evergreen forest is present above 1000 m with pine being common up to *c.* 1550 m and rare up to *c.* 1850 m. I do not recognize any basic difference in the structure and composition of evergreen forests there. The summit flora, *i.e.* above 1800 m, is basically evergreen hardwood with many deciduous and annual herbaceous species on the exposed ridges and outcrops.

Due to discrepancies in existing forest classifications, K  chler & Sawyer (1967) did not refer to any particular system for Doi Sutep. They divided the forest types into plant communities (phytocenoses), with descriptions of the various groups which included four types in lowland deciduous forest and five in upland areas. The term *trophophyllous* was discussed in detail. This is the phenomenon in which some tree species (*e.g.* *Dipterocarpus obtusifolius* var. *obtusifolius* and *D. tuberculatus* var. *tuberculatus* (Dipterocarpaceae) and *Anneslea fragrans* Wall. (Theaceae), normally deciduous in lowland areas, may be evergreen at higher elevations, or when all individuals drop their leaves in one year, but some individuals remain evergreen in other years. This term is not to be confused with the situation in semi-evergreen forests, which is how Ogawa *et al.* misinterpreted the situation. K  chler & Sawyer mention semi-deciduous forest, which is a mixture of deciduous and evergreen species, as found in the transitional zone by Hosseus and Kerr, but do not include this kind of forest in their survey.

Authors of various families in the Studies in the Flora of Thailand series (1961–1969) basically follow the RFD classification for forest types. Hjelmqvist (1968) includes some refinements for upland, seasonal, evergreen forests of northern Thailand. These areas with various Fagaceae are often referred to as “*Quercus* forest,” “oak forest,” “*Quercus*–dipterocarp forest,” and “*Quercus*–*Vaccinium* forest” according to the collector’s notes on the specimens he examined.

Santisuk (1988) divides deciduous forests into two categories, *viz.* tropical mixed deciduous, mostly below 800 m; and deciduous dipterocarp. He does not recognize any subcategories of tropical mixed deciduous forests, *i.e.* with or without teak and/or bamboo. His concept and terminology of evergreen forests, while imaginative, adds more confusion to several previously existing and inadequate systems of classification (Table 3). Craib (1931), Credner (1935), and Neal (1967) use the term “rain forest” for monsoonal (*i.e.* seasonal) lowland evergreen forests, which Santisuk refers to ironically as “seasonal rain forest”—a contradictory term as rain forest, in its original meaning, is the antithesis of seasonal forest. He distinguishes this kind of vegetation from tropical evergreen rain forest, which is said to exist in peninsular Thailand. “Monsoonal evergreen,” formerly referred to as semi-evergreen or dry evergreen forest by others, extends up to *c.* 900 m. This forest type includes a few deciduous, often canopy or emergent, tree species.

Montane forests replace deciduous forests at *c.* 700 m and extend to *c.* 1800 m, and are subdivided into lower montane rain forest, lower montane oak forest, lower montane pine–oak forest, and upper montane vegetation above *c.* 1800 m. The two species of pine found in northern Thailand, *viz.* *Pinus merkusii* and *P. kesiya*, are incorporated into Santisuk’s system with pine-deciduous dipterocarp, pine–oak savanna, and lower montane pine forests (Santisuk, 1997).

Smitinand’s (1989) final attempt at vegetation classification basically follows his previous

ideas, but divides mixed deciduous forests into three groups. Moist upper mixed deciduous forest is said to occur from 300 to 600 m and dry upper mixed deciduous forest on ridges at 300 to 500 m. These two kinds of forests, which are of great commercial value, include teak. Lower mixed deciduous forest, which lacks teak, is found at 50–300 m and has been extensively destroyed.

Ashton (1990) recognizes three basic forest types for Thailand, viz. seasonal evergreen–dipterocarp (dry evergreen), dry deciduous (dipterocarp), and moist deciduous forest. This classification system is too simplified and inadequate for use in Thailand. He sensibly omits the term rain forest as well as deciduous monsoon and pine forests.

Werner (1993) discusses pine forests in Thailand. Pine–deciduous dipterocarp forest is found between 440 and 1100 m, while pine savanna is present on sandstone in NE Thailand. Lower montane pine–oak forest is present at 900–1100 m and often overlaps with pine–deciduous dipterocarp facies. Pine–seasonal rain forest is said to be found in NE Thailand.

Werner & Santisuk (1993) also distinguish between deciduous and evergreen forests. Deciduous forests (up to c. 900 m) include dry deciduous dipterocarp, mixed deciduous, and pine–deciduous dipterocarp forests. Montane rain forests are found from 900–1000 to 2565 m, the summit of Doi Intanon—the highest point in Thailand. Lower montane rain forest includes almost all upland areas, while upper montane rain forest is found only on the summit area of Doi Intanon. Lower montane oak forest and lower montane pine–oak forest are said to be degraded areas with an “impoverished” flora. These authors have come to the conclusion that lower montane pine–oak forest, due to fire and poor soils, has developed mainly because of the invasion of *Pinus kesiya* Roy. ex Gord. (Pinaceae) and is, therefore, not an original, i.e. primary, forest type.

I disagree with this view, since both species of pine found in Thailand are a natural, although extensively exploited, component of some forested areas in Thailand. The reason that pines seem to invade an area is because most of the oak and related components do not reappear as readily as pines when cut or severely damaged. Pine seeds are wind dispersed and germinate readily in disturbed areas. This contrasts greatly with oaks and other components which generally have large fruits/seeds which are animal dispersed. The ruthless extermination of most seed-dispersing animals has resulted in a decrease in reestablishment of oaks and other species and an apparent increase in pines. Centuries of abuse, including fire, erosion, cutting, and grazing have severely degraded these seasonal evergreen + pines areas. Although I have no precise evidence to support this claim, it is certain that the extent and abundance of both species of *Pinus* have been drastically reduced, especially in the past century, mainly by uncontrolled forest destruction by hill tribe folk. Pines are selectively logged by hill tribe people to build their houses, since these trees are abundant and the wood easier to cut than other trees. Pines are also severely damaged and eventually killed by villagers hacking living trees for kindling wood. In Doi Sutep–Pui National Park, *Pinus merkusii* has been reduced to a single isolated population, while *Pinus kesiya*, although extensively planted, is rare in natural conditions.

Rain Forests

The term “tropical rain forest” was established by the German plant geographer A. F. W. Schimper in 1898 (Richards, 1952 and 1996). This kind of vegetation is basically evergreen, dense, tall, and ever-wet, i.e. not monsoonal/seasonal. IUCN (1973) clearly distinguishes

between tropical rain forests and tropical/subtropical seasonal forests. Richards (1952) provides information on various forest types in several countries. In Trinidad a rain forest is considered to have over 1800 mm of rainfall each year with no dry season. Areas with similar rainfall, but with a dry season, are called evergreen seasonal forest

L. R. Holdridge devised a life zone system in 1947 which was intended to be a refinement of world vegetation classification (Tosi, 1964; Holdridge *et al.*, 1971). The basic premise is that climate is the most important factor in the formation and development of terrestrial ecosystems. The macroclimate is considered to be the regulating factor in all terrestrial systems. The climate in any area can be used to determine the vegetation there, that is assuming that these plant formations or natural life zones are primary and undisturbed. Each of the 120 life zones envisioned to exist on the earth by Holdridge includes particular plant associations which are unique, *i.e.* restricted, to each life zone. The most important climatic factor is air temperature—specifically designated as mean annual biotemperature. On this basis, the earth is divided into seven latitudinal regions, *e.g.* tropical, temperate, and subpolar. The amount of rainfall, potential amount of evapotranspiration, and elevation are also needed to complete the model. Evapotranspiration includes water evaporation from the soil and other surfaces, and transpiration, *i.e.* the release of water from plant tissues to the atmosphere.

The specific life zones distinguished by these variables are recognizable locally from floristics, but plant species are not the primary determinants in this system. Seasonality is treated by Holdridge as a complicating or modifying factor in the classification of world plant formations. Tropical rain forests are noted to have an annual rainfall of over 8000 mm in the tropics and over 4000 mm in the subtropics. Dry forests have an annual rainfall of 1000–2000 mm, moist forests 2000–4000 mm, and wet forests are noted as having 4000–8000 mm. From this interpretation, there is no rain forest in Thailand, since areas with the highest precipitation are considered to be wet forests.

Puping Village at c. 1375 m in Doi Sutep–Pui National Park has an annual biotemperature of 19.9 °C and an average annual rainfall of 1855 mm (Figure 3). This corresponds to moist forest in the lower montane (subtropical) “altitudinal belt” according to Holdridge’s natural life zone diagram presented by Tosi (1964).

Fosberg (1958) indicated that rain forests are evergreen and with no significant leafless period with canopy components. This is contrasted with deciduous forests, which are monsoonal. No temperature parameters are included. Van Steenis (1965) distinguishes two forms of rain forest, *viz.* areas below 1500 m elevation, which are ever-wet or have a “feeble” dry season, *i.e.* mixed lowland and hill rain forest; and montane ever-wet rain forest. Medway (1972) undertook vegetational work in an area near Kuala Lumpur, Malaysia (c. 3°N), which has an average lowland rainfall of 2000–3300 mm, with seasonal distribution, and a short dry period. He considered this to be a tropical rain forest.

The transition from tropical rain forest to deciduous monsoon forest in the Malay Peninsula occurs at about 5°N (Medway, 1972) and between 6° and 7°N (Whitmore, 1975). Monsoon areas above this latitude with over 2000 mm of rain per year are variously called tropical wet evergreen or tropical rain forest. There is, therefore, no definite agreement on a definition of rain forest. The basic concept of a rain forest includes a tall, evergreen forest with over 1800 mm of rainfall each year and no or only a very short (up to 4 weeks) dry period. With this concept in mind, the climatic and vegetational conditions throughout most of

Thailand and all of that above *c.* 8°N cannot realistically be considered rain forest. The southernmost provinces would, at best, be marginally included as rain forests. Seasonal (moist/wet) evergreen forest would be the most appropriate terminology for the forest there. Ashton (1990) refers to this kind of forest as seasonal wet evergreen and that below 5°N in the Malay Peninsula, Sumatra, Borneo, and Palawan as seasonal, mixed dipterocarp forest with edaphic and montane associates.

Whitmore (1975) gives Schimper's original definitions of rain forest and monsoon forest, and includes detailed discussions on temperature, rainfall, evapotranspiration, and the effects of seasonality in the tropics. Much of his system is inappropriate for Thailand. His concept of tropical rain forests is more suitable to more equatorial latitudes (*i.e.* below 6°) where rainfall is greater and seasonality none. His concept of tropical rain forests has 13 categories, including beach, mangrove, and swamp forest. A line from *c.* 6°N on the west coast of West Malaysia to *c.* 7°N on the east coast of Thailand is said to be a transition zone between tropical semi-evergreen rain forest to the north and tropical lowland evergreen rain forest to the south. This is an area which has a distinct dry season of at least 1 month, but does include both structural and floristic differences in the trees of the two forest types.

Whitmore (1991) defines a rain forest as an evergreen forest in which every month has at least 100 mm of rain or with a brief and irregular dry period ranging from a few days to several weeks. Monsoon forests exist where there is a regular dry period of several months with up to 60 mm of rain per month, *i.e.* tropical seasonal forest. The term tropical moist forests was established in 1976 by A. Sommer.

Walter (1985) presents a very realistic and workable classification for tropical forests based on rainfall and mean annual temperature (Table 2). This system implies that there is no rain forest in Thailand, since there is a dry season throughout the country. Evergreen seasonal forests, semi-evergreen seasonal forests, and deciduous seasonal forests are, however, present (Table 2).

Table 2. Classification of tropical forests according to Walter (1985) and Richards (1996).

Forest type	Rain forest	Evergreen seasonal forest	Semi-evergreen seasonal forest	Deciduous seasonal forest & savannas
total annual rainfall mm	more than 1800	more than 1800	1300–1800	800–1300
duration of the dry season	none	3 months, each month with 50–100 mm of rain	5 months, each month with 25–100 mm of rain	5 months, each month with under 100 mm of rain
mean annual temperature °C	23–27	24–28	24–28	24–28

Smitinand (1989) considers parts of SE and peninsular Thailand to have tropical rain forest vegetation. Although he notes that these places are seasonal, the fact that the rainfall is high, often more than 2500 mm per year, is his sole criterion for distinguishing this kind of forest. He maintains that “careful study” of this vegetation indicates that two categories are present, viz. lower, up to 600 m, and upper tropical rain forest, 600–900 m.

Zhu (1997) interprets Chinese rain forests on various floristic and ecological similarities to those found in Guiana, Brazil, Nigeria, Borneo, Singapore, *etc.* He does not consider rainfall and seasonality in his classification scheme. Southern Yunnan, his study area, at 21°N lies at the northern extreme of the tropics. His use of seasonal rain forest and wet seasonal rain forest, with mixed rain forest and dipterocarp rain forest subtypes, for forest types similar to those found in northern Thailand are definitely not accepted here.

Kinta *et al.* (1999) provide a brief description of the vegetation and flora of Doi Intanon. The mountain lies in a tropical monsoon area and includes three basic kinds of forests. Dry *Dipterocarpus* forest is deciduous and ranges in elevation from 300 to 1000 m. *Pinus kesiya* forest is present from 1000 to 1600 m and above this to the summit (2590 m) is mountain evergreen broad-leaved forest, which is also noted to be the same as hill evergreen forest. Evergreen trees growing in valleys between the middle elevations of dry *Dipterocarpus* and mountain evergreen broad-leaved forests is referred to as mixed evergreen forest. Due to forest destruction, the elevation ranges of these forest types often varies. This paper, based on field work in February 1998, is far too brief and general to be of any ecological value. The use of the term mountain evergreen broad-leaved forest instead of hill evergreen, montane, or seasonal evergreen forests is a modest improvement in terminology.

A summary of various forest classification schemes in Thailand is presented in Table 3.

Advantages of the New Forest Classification Scheme

Although most authors have recognized seasonality as an important factor in forest classification for Thailand, none have linked this with both elevation and the developmental state, (*i.e.* primary, secondary, tertiary) of the vegetation. There is really nothing particularly innovative in my system, since all of the forest types I present have been noted previously, but not in the same combination as I recognize (Tables 3 & 4). My simplified version clarifies what forest types are found in Thailand, especially the northern part.

Deciduous dipterocarp–oak forest (**dof**) has been distinguished by all authors, mostly as dry dipterocarp forest. More open, seasonally burned and flooded, grassy areas are often called savannas. The fact that these **dof** areas are a secondary, fire-dependent climax vegetation which does not develop into a primary facies (*i.e.* original vegetation) has not been noted previously.

Mixed deciduous forest, with or without teak, has caused much confusion mainly because of the fact that disturbance plus the presence of bamboo have not been adequately considered. The influence of logging as having a degrading effect on primary forest and the development of secondary growth have generally not been realized or adequately discussed. Since there is only one remaining deciduous forest with natural teak present in Thailand (Mae Yom National Park, Phrae Province); all other “mixed” forests are either severely degraded, include much deciduous secondary growth, or are being transformed into **dof** (Maxwell, 1999). Deciduous primary forest always includes prominent amounts of bamboo plus seasonal fires. It is for this reason that I have called this kind of forest bamboo + deciduous forest (**bb/df**).

Table 3. Summary of Various Forest Classification Schemes in Thailand

Author	Deciduous		Deciduous + evergreen	Evergreen hardwood		Evergreen hardwood+pine
	sea level–c. 850 m	low forest savanna		sea level–c. 1000 m	c. 1000–2565 m	
Kurz (1877)	eng. hill eng	low forest savanna	mixed forest (lower & upper), dry forest	tropical evergreen	hill evergreen	c. 1000–1800 m pine
Hosseus (1908)	dipterocarp forest, Dipterocarpaceae hill forest		mixed oak–wood		evergreen	evergreen
Kerr (1911)	eng. pah paa, pa pe		oak–jungle		evergreen	evergreen
Craib (1931)	pa deng	savanna	mixed deciduous	tropical rain forest	open hill	pine
Credner (1935)	dry forest	thorn–bamboo	deciduous monsoon	tropical rain forest	hill evergreen	coniferous
Champion & Edwards (1936, 1950)	deciduous dipterocarp		mixed deciduous	–	hill evergreen (evergreen–oak)	pine
RFD (1950, 1962) & Samapudi (1957)	deciduous dipterocarp		mixed deciduous	tropical evergreen	hill evergreen	coniferous
Loetsch (1957, 1957/58)	dry dipterocarp		deciduous monsoon with or without teak	hill evergreen	hill evergreen	coniferous
Ogawa (1961)	dipterocarp–savanna	mixed savanna	ecotone of subtropical semi-evergreen forest	evergreen gallery	temperate hill evergreen	
Smitinand (1966)			upper moist mixed deciduous	upper hill evergreen/moist lower montane (rain) forest		pine
Robbins & Smitinand (1966)	deciduous dipterocarp		mixed deciduous	evergreen gallery	hill evergreen	coniferous
Küchler & Sawyer (1967)			semi-deciduous			
Neal (1967)	deciduous dipterocarp		dry evergreen	tropical rain forest	hill evergreen	coniferous
Williams (1967)	deciduous (dry) dipterocarp	savanna	mixed deciduous with teak	rain forest, moist forest	hill evergreen (lower & upper)	coniferous
Whitmore (1975)	dry deciduous dipterocarp	savanna	mixed deciduous (dry & moist)			dry deciduous dipterocarp + pine
Smitinand (1977)	dry deciduous dipterocarp, savanna		tropical moist deciduous (teak)	semi-evergreen rain forest		coniferous
Smitinand <i>et al.</i> (1978)	dry deciduous dipterocarp, savanna		mixed deciduous	tropical evergreen (rain forest), dry evergreen	hill evergreen	coniferous
Santisuk (1988, 1997)	deciduous dipterocarp		dry & moist mixed deciduous	dry evergreen	lower montane	coniferous
			tropical mixed deciduous	seasonal rain forest	montane	pine–deciduous dipterocarp, pine–oak–savanna, lower montane pine
Smitinand (1989)	dry deciduous dipterocarp	savanna	mixed deciduous, (moist upper, dry upper, lower)	lower & upper tropical rain forest	hill evergreen	coniferous
Ashton (1990)	dry deciduous (dipterocarp)			seasonal wet evergreen	seasonal evergreen dipterocarp (dry evergreen)	
Werner (1993)		pine–deciduous dipterocarp, pine savanna				lower montane pine–oak forest, pine–seasonal rain forest
Werner & Santisuk (1993)	dry deciduous dipterocarp	pine–deciduous dipterocarp	mixed deciduous		lower & upper montane rain forest	lower montane pine–oak forest
Zhu (1997)				seasonal rain forest, wet seasonal rain forest, seasonal evergreen forest	seasonal evergreen forest	
Santisuk (1998)				seasonal rain/dry evergreen	lower montane rain forest & lower montane oak forest	
Konta <i>et al.</i> (1999)	dry <i>Dipterocarpus</i>		tropical mixed deciduous		primary evergreen broad-leaved (above 1600 m)	<i>Pinus kesiya</i> forest
Maxwell (1988, 1992, <i>etc.</i>)	deciduous dipterocarp–oak	degraded bamboo + deciduous forest	bamboo + deciduous	primary evergreen without pine forest	primary evergreen without pine forest	primary evergreen+pine forest

Mixed evergreen + deciduous forest (**mxdf**), not recognized by most authors and inadequately defined by others, is a distinct kind of vegetation, which is rapidly disappearing. It is commonly found in lowland areas, many of which have previously been considered as having lowland evergreen (“dry evergreen”) vegetation (Maxwell, 1995). It is also found in remnant areas in northern Thailand between deciduous lowland forested areas and primary, evergreen, seasonal forest in a general range from c. (600) 800–1000 m. Pristine areas include a distinct flora, however disturbances at lower elevations (c. 800–900 m) have resulted in degradation with **dof** and **bb/df**. I have also studied this kind of forest in Khong District, Champasak Province, southern Laos where the elevation range is 60 to c. 240 m (Maxwell, 2000).

Evergreen forests in Thailand are all seasonal and basically structurally similar. It is difficult, if not impossible, to clearly distinguish lowland evergreen forests from upland ones either in structure or floristics. There is no realistic basis on which to distinguish upland evergreen forests with “lower” and “upper” subdivisions. All authors have complicated the situation by assuming that the different species found in lowland evergreen forests compared with upland forests constitute a different forest type.

The use of the word “montane,” first introduced into Thai forest classification systems by Smitinand (1966), has not been interpreted correctly. Edwards (1950) includes montane forests in subtropical and temperate zones. Holdridge (Tosi, 1964) is more precise and indicates that the lower limit of montane forest is 3000 m in the tropics. Lower montane forests range from 2000–3000 m. According to his classification system, mean annual biotemperature must be taken into consideration when classifying a vegetational (life) zone. This was not done by Smitinand (1966) and others (Table 3) who have uncritically adopted this terminology. Until Holdridge’s model is properly applied for upland areas in Thailand, I cannot accept lower and certainly not upper montane categories for Thai vegetation.

More detailed and holistic ecological work needs to be done in evergreen forests throughout Thailand. Although it is possible that evergreen forests in, for example, peninsular Thailand from sea level to 1000 m and the summit area of Doi Intanon (2300–2565 m) are different, I cannot make any creditable distinctions here. The vast conceptual differences as well as ecological and botanical credibilities of past research preclude me from doing this. Until convincing evidence is available on evergreen forest ecology, I am calling these evergreen areas primary, evergreen, seasonal forest with or without pine (Table 3). From my own experiences, much of what has been called “dry evergreen” or (seasonal) evergreen forest below 1000 m is actually mixed evergreen + deciduous, seasonal forest (**mxdf**). Unfortunately, much of the original evergreen forest cover has been destroyed, therefore it will be difficult to find suitable places to conduct ecological research to resolve the question about this kind of vegetation.

In my opinion much of the confusion and inaccuracies in the classification of Thai forest could have been avoided if Schimper’s definition of rain forest had been followed. Misapplication of rain forest for lowland forests, mostly in peninsular Thailand, precludes me from including this forest type in Thailand.

There is no single standard system for forest/vegetation classification in Thailand—even in the Royal Forest Department. Since no suggested system is totally acceptable or reliable, I have developed a simplified vegetational scheme for the kingdom (Maxwell, 1988–1999; Maxwell *et al.* 1995–1999). This system was originally developed for use in northern Thailand, but was expanded to include all of the country (Table 4).

Table 4. Vegetation/Forest Types in Thailand

Forest Type	Primary Growth	Secondary/Degraded Growth (da/sg)	Tertiary Growth (da/sg)	Elevation (m)
Seasonal (Monsoonal)	Almost ever-wet ("rain forest")	evergreen scrub	bamboo thickets, grassland, cultivated areas, plantations	sea level–c. 1800
	Distinctly Seasonal	evergreen (egf)	bamboo thickets, grassland, cultivated areas	sea level–c. 1000–c. 2565*
		deciduous with bamboo (bb/df)	cultivated areas	sea level–c. 850
		mixed evergreen+deciduous (mxf)	bamboo thickets, grassland, cultivated areas	sea level–c. 1000
		evergreen+pine (eg/pine), deciduous dipterocarp-oak with pine (do/pine)	grassland, cultivated areas	c. 60–c. 1800
Saline Aquatic Fresh	mangrove	no vegetation, mangrove scrub	no vegetation	sea level–25
	lakes, ponds, swamps, marshes, rivers, etc.	scrub, grassland, cultivated areas	scrub, grassland, cultivated areas	sea level–2550
	beach vegetation	scrub, grassland	grassland, cultivated areas	sea level

*In peninsular and central Thailand egf can be found starting at or near sea level, but in northern Thailand, where the dry season is longer and more severe, it starts at about 1000 m.

Conclusions

Conventional forest classifications used by botanists, foresters, ecologists, and others have basically been unoriginal (*i.e.* adapted), confused, and in many instances inadequately defined. Mixed deciduous forest and upland evergreen hardwood forests have been especially confused by authors who have tried to split forest types on the basis of the presence or absence of various species, *e.g.*, teak and pine, or assumed differences based on elevation. Much of this has been based on inadequate or faulty botanical work. The basic system adapted by foresters for Thailand, based on the work of Champion and Edwards for India–Burma, is inappropriate here because of its complexity and inconsistency. Credner's system, with modifications, should have been used since it is more realistic and less complicated than the India–Burma system.

Deciduous forests can only realistically be divided into deciduous dipterocarp, including savanna, and taller, more diverse deciduous forest, *i.e.* bamboo + deciduous hardwood—regardless of the presence or absence of teak and/or bamboo. The transitional, seasonal forest found between lowland deciduous and evergreen hardwood forest, *c.* 800–1000 m, has been neglected by most authors. Contrary to Ogawa *et al.* (1961), this forest is not characterized by tropophylly. As far as evergreen, seasonal forest is concerned, it is impractical to subdivide this facies, regardless of elevation, latitude, rainfall, or temperature, since as a vegetation type it is quite uniform in basic structure throughout the country. When considering all structural aspects of evergreen forests in Thailand, *i.e.* from ground flora to canopy, there is an overall uniformity. Although species compositions differ, all niches occupied in, for example a peninsular forest, have a corresponding counterpart in northern forests. It is even more difficult to distinguish between “lower” and “upper” zones in upland forests of northern Thailand. I certainly recognize a difference in some of the flora above 1700–1800 m, but this does not constitute a vegetational change.

There has been an unjustifiable use of the term “rain forest” in Thailand. All authors have recognized seasonality here in their papers, but have not recognized the distinction between evergreen seasonality and rain forests, which lack seasonality. Rain forests, defined as ever-wet or briefly dry forests with over 2000 mm of rainfall each year (Schimper, 1898), do not occur in Thailand. Seasonal areas with this amount or more of rainfall should be considered as seasonal, evergreen forested areas. These authors have deviated from Schimper's original concept by neglecting the basic distinction between ever-wet and seasonal (monsoonal) climates. Some authors have erroneously concluded that rain forests exist in Thailand based on a single parameter, *e.g.* the amount of rainfall or presumed structure and composition of the vegetation in an area. The fact that the duration of the dry season is intimately linked with soil moisture and evapotranspiration has not been generally realized; thus more rainfall is required to insure available water in warmer climates or months than in cool areas or months.

Future Research

The basic problem with most of the vegetation classifications for Thailand is that a holistic approach to all ecological parameters has not been adopted. A really accurate and reliable vegetation survey will require a team effort by experienced ecologists and competent plant taxonomists as well as climatologists, soil scientists, and hydrologists. The holistic approach must include climate and physiognomy, *i.e.* the exact amount of rainfall, duration of dry period, temperature; floristics, and forest structure. Transects should be done for all aspects of the

flora, *i.e.* trees, ground flora, epiphytes; and include flowering, fruiting, and leafing phenologies. Forest structure includes the canopy height, stratification, the amount of shade, and analyses of habits, *e.g.* herb, tree, treelet, shrub, woody climber, epiphyte, *etc.* Bedrock, slope, soil, and water movement in forests should also be done to determine the amount of influence these factors have on the vegetation.

Eco-Pornography

The insidious, uncontrolled, and continuous destruction of Thailand's forest resources has resulted in dramatic ecological disasters which have caused serious reductions/disruptions in biodiversity and vegetational stability, as well as increases in flooding, erosion, and temperature throughout the country. Although sustainable use of Thailand's forests has occurred since people have lived here (*i.e.* thousands of years), the massive environmental disaster that we are confronted with today is due to rapacious commercial exploitation beginning in the 1870's by foreign loggers. The establishment of the Royal Forest Department in 1896, initially and ostensibly to regulate logging, has essentially resulted in the loss of perhaps 60% of Thai forest cover. The *c.* 15% of patchy, endangered remains of primary forested area in Thailand is vivid testimony to their effectiveness in protecting/conserving Thai forests. Population increases, especially from 1970 to 2000 when the number of Thais increased from 37 to 62 million, as well as an insatiable appetite for wealth, power, status, and influence by many Thais are contributing factors to the demise of Thai forests.

The following miscellany of ecologically repugnant, but sadly common, photos have been selected to illustrate some of the basic reasons why Thai forests have and will continue to disappear. Immediate remedial and effective restorative programmes are required for all of these environmentally devastating scenes. If this task is not done then the 21st century will include not only the disappearance of the RFD, which will not be mourned by nature, but also what little remains of Thai forests — a heritage and resource which must be preserved.

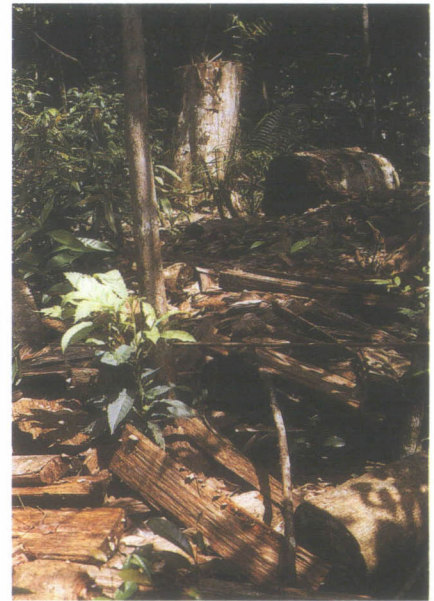


The widespread use of bottled gas in Thailand since the early 1980's has mitigated forest destruction by charcoal makers. Forest devastation caused by these people will take centuries to recover. Even after 50–60 years (or more) these charcoal-making sites still have very degraded, secondary, mostly deciduous, fire-prone vegetation with much bamboo, eroded soil, and holes in the ground.

Photo: Warren Brockelman, SE of Takhong Reservoir, Nakorn Ratchisima Province, 3 August 1976.

Aquilaria crassna Pierre ex Lec. (Thymelaeaceae, agarwood) often has rotted internal xylem (heartwood) which produces a fragrant residue used to make incense. This has become a very profitable, but environmentally destructive, industry in the central and south-eastern parts of Thailand. This species has become extirpated to very rare (as in Doi Sutep–Pui National Park) in northern Thailand and endangered in the other two parts of the country where it is naturally distributed. Exploitation of this species in Khao Yai National Park (central area) has not only disrupted ecological work and pristine primary ecosystems there, but has also led to armed conflicts. A clash there three years ago resulted in the deaths of one national park ranger and one logger. RFD officials, as usual, have been unable (unwilling?) to control subsequent encroachment.

Photo: Warren Brockelman; Khao Yai National Park, Nakorn Nayok Province; July 1999.



A monument to incredibility. Destruction of forested land for agricultural “development” has been a major cause of environmental deterioration in Thailand. Economically profitable monocultures (e.g. rice, sugar cane, corn, cabbages, etc.) require cleared, usually burned, land and high inputs of fertilizers and pesticides for maximum yields. Destruction of forest cover, ravaging of the soil, plus toxic residues in the soil, water, food webs, etc. add further insults to already crippled ecosystems.

Photo: Warren Brockelman; Chonburi Province; December 1975.

Loggers in Thailand, whether they are sawmill operators or rural villagers cutting trees to make homes, have never considered sustainability or conservation when plundering the forest. The RFD has had a thoroughly dismal record for both of these factors. Logging, etc. scandals involving the RFD have been common.

Photo: Warren Brockelman; north of Takhong Reservoir, Nakorn Ratchisima Province; 4 April 1976.



Although there are laws against illegal logging in Thailand, they are often ignored and inadequately. Protection of the remaining forests has, therefore, been minimal; thus primary forested areas in the kingdom continue to disappear. Ecologically pornographic scenes, such as this teak house in Bong District, Payao Province, are common and continuous reminders that nature conservation in Thailand is still being blatantly violated.

Photo: Mike Rodenbaugh, 12 March 2000.

Lack of respect for the environment, ignorance, and greed—all without official control, has caused remaining forested land in Thailand to shrink to less than 15% of the total land area of the country.

Photo: Kevin Woods, Bang Mah Pah District, Mae Hong Sawn Province, c. 350 m, 15 April 2000.



PART II

The Vegetation of Doi Sutep–Pui National Park

J. F. Maxwell and Stephen Elliott

Introduction

Doi Sutep–Pui¹ National Park was established on 14 April 1981. It is situated directly west of Chiang Mai City in northern Thailand at c. 18° 50' north latitude and 99° 0' east longitude, and includes an area of 261 km² (Figure 1). The main part of the national park is Doi Sutep and Doi Pui, which is a N–S aligned mountain rising from c. 350 m to 1610 m (Doi Sutep) and 1685 m (Doi Pui). The two disjunct satellite portions of the national park are lowland, mostly severely degraded, areas north of the main mountain and include Dáht Mawk and Mawk Fah waterfalls.

Doi Sutep Temple, located at 1050 m on the east side of Doi Sutep, was established over 600 years ago and is presently the major tourist attraction in the national park. Puping Palace, established by the present Royal Family in 1961, is situated at c. 1350 m on the eastside of Doi Sutep. Sahn Goo (“tomb ridge”), on the eastern summit of Doi Sutep, is the ruins of a monument/shrine that predates Doi Sutep Temple². There are four major hill tribe villages, all Hmong, in the national park. Nong Hoy Gow, situated on the southern tip of the northern section of the national park at c. 1100 m, was first settled over a century ago. Mr. Naeng Zae Zong, 50, a villager at Mae Sa Mai Village, which is directly south of Nong Hoy Gow Village, has informed us that the latter village was established several generations ago. The oldest people in his village can only recall that Nong Hoy Gow was already present when they were young and that their ancestors were the ones who lived there. Nong Hoy Gow Village was the first Hmong village to be established in the area. Mae Sa Mai, NW of Doi Pui, is situated at c. 1000 m and was established in 1947 (Photo 1). Mayo Doi Pui Village is located on the south side of Doi Sutep at c. 1000 m and was first settled in 1951. Chang Kian Village, established in 1955, is located on the east side of Doi Pui at c. 1350 m (Figure 1) (TDRI, 1996).

According to reports submitted in June 1999 by various ranger station chiefs in the national park, there are at least 4973, predominately hill tribe, people living in the National Park (Table 5). There must be at least another 500 people living in the Doi Sutep Village area, which includes Doi Sutep Temple and the national park headquarters. The total number of people living in upland, forested areas in the national park must approximate 5500. The 1999 statistics do not include any data concerning infringing lowland settlements.

All of the Hmong villages were originally established to exploit new areas for opium cultivation—the essential cash crop of these people. Much of the original forest cover was destroyed by cultivation of this crop as well as for upland rice—their main subsistence crop. While opium began to be officially curtailed in 1958 and essentially discontinued by c. 1990, various environmentally unacceptable cash crops have been offered as substitutes. The uncon-

¹ Thai: doi = mountain, sutep = beautiful angel, pui (pronounced “bui”) = like fluffy clouds

² A recently installed plaque at Sahn Goo indicates that the ruins date from the 13th century A.D.

Table 5. Population statistics for people living in the uplands of Doi Sutep–Pui National Park, June 1999.

Village	Ethnic Group	Population
Nong Hoi Gow	Hmong	706
Mae Sa Mai	Hmong	1700
Mayo Doi Pui	Hmong	595
Chang Kian	Hmong	697
Huay Mae Nai	Hmong	c. 50
Puping	Thai	443
Daht Mawk Station area	Karen	10
Mawk Fa Station area (8 villages)	Lisaw	790
Doi Sutep Village area	Thai	500 (estimate)
Total		5473

Source: Headquarters, Doi Sutep–Pui National Park

trolled agricultural practices of the Hmong have rapidly destroyed much of the original forest vegetation above c. 1000 m as well as severely damaging the associated water catchment areas. Two agricultural research sites were established in 1970 by the Faculty of Agriculture, Chiang Mai University, below Doi Pui and have become greatly enlarged since that time. Site “A”, at c. 1350 m, was created for coffee research at the expense of pristine forest and an intact water catchment valley. Site “B”, at c. 1250 m, intended for other cash crops, is located at a small, abandoned Hmong village, Ban Maeo Khun Huay Mae Na Sai, near the source of Mae Nai Stream. The present effectiveness of both of these stations, especially Site “B”, in upland crop programmes is questionable, while their detrimental effects on the environment are great. Nong Hoi Gow and Mae Sa Mai villages are assisted in their agricultural activities by the Royal Project. In contrast to sites “A” and “B”, the Royal Project uses land that has already been deforested. Much of the periphery of the national park has been settled by Thais and “developed” with some places actually encroaching on national park territory.

Editor’s note: The spelling of Thai proper names in this monograph follows a personalized phonetic English transliteration which generally differs from that of the Royal Institute which is used on most official Thai maps and other documents. Below are listed the official spellings (right side) corresponding to some of the authors’ spellings (left).

Chamadevi (Princess)	Chamathewi
Doi Sutep	Doi Suthep
Daht Mawk	Tat Mok
Haripunchai	Hariphunchai
Mawk Fah	Mok Fa
Puping Palace	Phuphing Palace
Hmong	Hu-Mong
Nong Hoi Gow	Nong Hoi Kao
Pah Ngeub	Pha Ngoeb
Mayo	Maeo
Chang Kian	Chang Khian
Doi Kuhn Tan	Doi Khun Tan
Lamphoon Province	Lamphun Province
Wat Prataht	Wat Phrathat

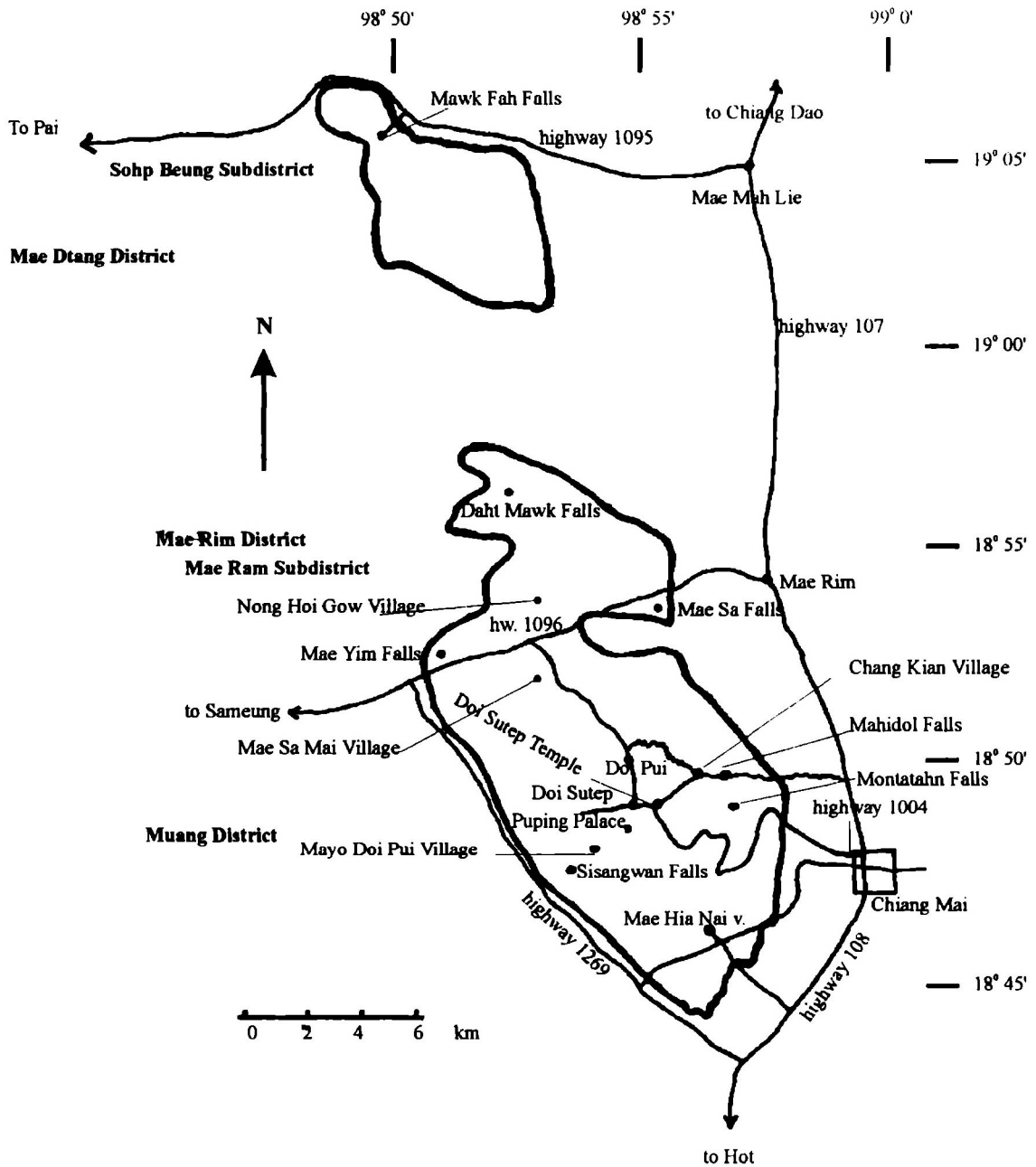


Figure 1. Doi Sutep-Pui National Park, Chiang Mai Province, Thailand

Etymology of “SuteP”

The earliest spelling of this word from botanical literature appeared as *sutap* (Hosseus, 1907a). Kerr (1911) referred to it as *sootep* and by 1914, no doubt because of a change recommended by Kerr, it was *suteP* (Craib, 1914). Craib (1925–1931) standardised all earlier *sutap* and *sootep* references to *suteP*, however botanical specific epithets spelled as *sootepensis* (*i.e.* from *sootep*), because of nomenclatural regulations, cannot be changed (*e.g.* *Desmos sootepensis* (Craib) Maxw. (Annonaceae), *Indigofera sootepensis* Craib ssp. *sootepensis* (Leguminosae, Papilionoideae), *Gardenia sootepensis* Hutch. (Rubiaceae), and *Antidesma sootepense* Craib (Euphorbiaceae). The earliest reference we have with the word spelled as *sutheP* is Samapuddhi (1957), which is the favoured spelling by Thais. We have used *suteP* throughout this work.

It is interesting to note that Hosseus, Kerr, and Cockerell never mention Doi Pui, even for species recorded from the highest point of the mountain. Apparently, the entire mountain was called Doi SuteP, with no distinction between the two highest peaks. A U. S. Army Map Service topographic map (4767 I, II), published in 1960 and K  chler’s map (1966) are the earliest references that we can find where Doi Pui is noted.

Geology

Most of the bedrock in the national park, especially Doi SuteP–Pui mountain, consists of uniform Lower Carboniferous granite which was originally formed underground *c.* 330 million years ago and has been uplifted from about 50 million years ago with the Himalayan orogeny. Outcrops of Precambrian gneiss and to a lesser extent mica schist, sandstone, and marble are found mostly in the northern part of the national park. These rocks are at least 570 million years old. The southern part of the national park has Mid-Ordovician shale, about 475 million years old (Baum *et al.*, 1982). The bedrock has had no effect on the vegetation since the latter is influenced by elevation, moisture, and land use all of which effect soil quality.

Climate

The present climate in northern Thailand is more moist and cooler than it was in the past. Hastings and Liengsakul (1984) note that prior to *c.* 4300 years ago the climate was drier with an estimated 400–500 mm less rainfall per year and with a correspondingly longer dry season. This conclusion is based on C-14 dating of a sample from the bottom of the peat layer in the *Sphagnum* bog just below (*c.* 2550 m) the summit of Doi Intanon (2565 m)—the highest point in Thailand and *c.* 50 km SW of Doi SuteP–Pui mountain. This sample was dated as being 4300 ± 160 years old. The pollen record indicates that the forest had more *Pinus* (Pinaceae) in it than at present. The present upper limit of *Pinus kesiya* Roy. *ex* Gord. is *c.* 1800 m in this region (Maxwell *et al.*, 1995). Prior to *c.* 4300 years ago, assuming that pine-dominated forest conditions are what they are now, the climate must have been cooler and drier than it is now. It is postulated that increased rainfall was caused by a reduction in world-wide glaciation, which caused an increase in water availability throughout the world. With more rainfall and decreased temperatures, pine gradually receded while seasonal evergreen forest, the present upland vegetation, became dominant.

The average amount of annual rainfall in Chiang Mai city, *i.e.* at the base of Doi SuteP–Pui mountain (*c.* 350 m), is 1067.8 mm (Figure 2). August and September have the most rain with

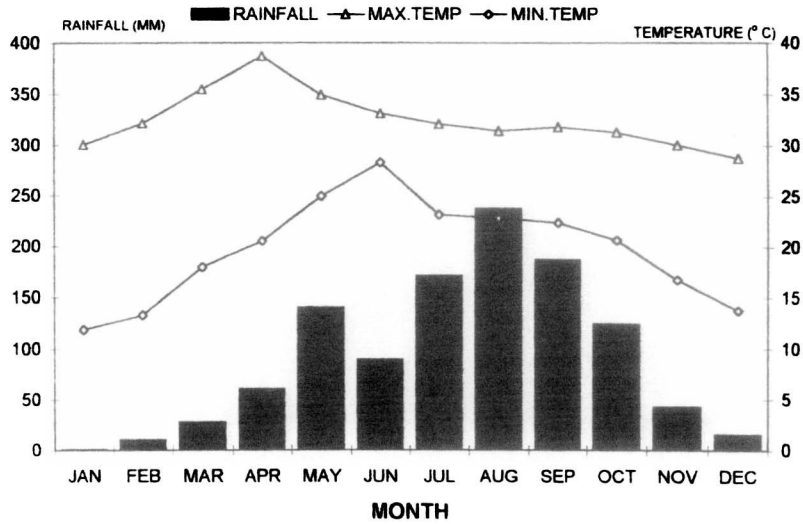


Figure 2 Rainfall and temperature averages for Chiang Mai, c. 350 m, 1952-1997
Sources: Kaosoot *et al.*, 1996, Statistical Reports, 1992-1997, Suwacherunkul & Srisawang, 1993

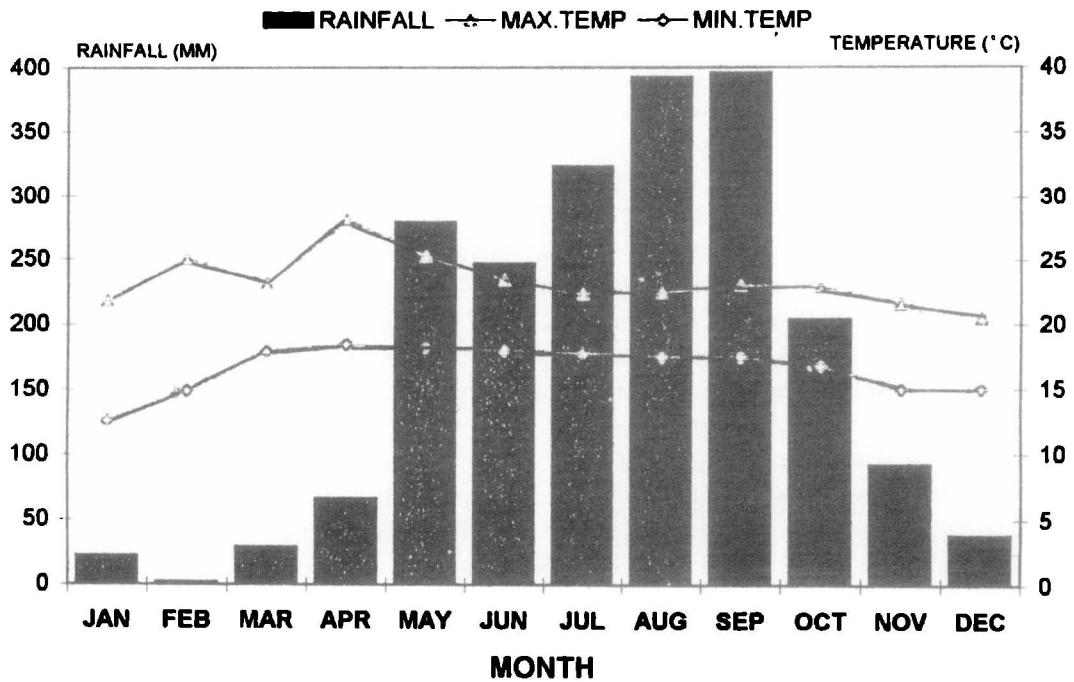


Figure 3. Rainfall and temperature averages for Paping Village, c. 1375 m; 1965-1998.
Source: Chatchai Tantasirin, Faculty of Forestry, Kasetsart University, Bangkok.

an average of 207.7 mm per month. The lowest amount of rainfall is during January–February with an average of 6.3 mm per month. Average lowland temperatures range from a low of 21.1 °C during December–January and a high of 29.0 °C during April–May.

The average amount of rainfall at the national park headquarters (c. 1050 m) is 1670.1 mm per year and 2095 mm at Puping village (c. 1375 m).

Previous Botanical Research on Doi SuteP–Pui

As noted in Part I about forest types in Thailand, Dr. Carl Hosseus (1878–1950), a privately financed German, was in 1904 the first botanist to collect on Doi SuteP–Pui mountain (Hosseus, 1908). Dr. Alfred Francis George Kerr (1877–1942), an Irish physician and initially amateur orchidologist, first arrived in Thailand in 1902. Jacobs (1962) provides the details of Kerr’s career in Thailand and notes that Kerr was appointed medical officer of the British Consulate in Chiang Mai in August 1903. He became interested in local orchids where he collected, cultivated, and drew 215 species by 1908. His first sketch was made on 15 January 1904. As far as we can determine, *Bulbophyllum kerrii* Rol. (Orchidaceae, = *Bulbophyllum hirtum* (J. E. Sm.) Lindl.) was the first of Kerr’s collections described as new from the “mountains round Chiangmai, on deciduous trees at about 2,000 feet (= c. 675 m) altitude”. Seidenfaden (1979) interprets this indefinite locality as being Doi SuteP. *Oberonia umbraticola* Rol. (Orchidaceae, = *Oberonia pachyrachis* Rchb. f. ex Hk. f.) is the first of Kerr’s orchids described as a new species with Doi SuteP (sic. Doi Govtep) noted as the collecting locality (Rolfe, 1909). Kerr, after a visit to Kew, received botanical inspiration and collecting equipment from enthusiastic botanists there in 1908 and returned to Chiang Mai in mid-December 1908 to begin serious botanical collecting. Cockerell (1929), an American entomologist, made a short trip to Doi SuteP, base to summit, in early February 1928. His report, albeit brief, indicates that the condition of the vegetation then is the same as it is now. This is especially true in his description of the summit flora of Doi SuteP where *Pteridium aquilinum* (L.) Kuhn ssp. *aquilinum* var. *wightianum* (Ag.) Try. (Dennstaedtiaceae), *Imperata cylindrica* (L.) P. Beauv. var. *major* (Nees) C. E. Hubb. ex Hubb. & Vaugh., and *Microstegium vagans* (Nees ex Steud.) A. Camus (both Gramineae) are common—all being indicators of open, fire-damaged, disturbed conditions. Other species, e.g. *Polygonum chinense* L. (Polygonaceae), *Impatiens violaeiflora* Hk. f. (Balsmainaceae), and the evergreen epiphytic herb *Aeschynanthus hildebrandii* Hemsl. (Gesneriaceae) are still there now in seasonal, primary, evergreen + pine habitat. Notable differences include *Lilium primulinum* Bak. var. *burmanicum* (W. W. Sm.) Stearn (Liliaceae) and *Pinus kesiya* Roy. ex Gord. (pine, Pinaceae) which were common then, but are quite rare now—natural populations of the latter having been subsequently removed and more recently replanted.

Kerr continued to collect periodically on Doi SuteP until 1922. After he retired in 1932, botanical activity in northern Thailand remained dormant until 1957–59 when the Thai–Danish botanical studies programme resumed collecting. Doi SuteP was extensively sampled during this time. Only a part of the c. 8000 specimens collected throughout the country during this programme were studied. Various specialists were asked to examine the material, which was distributed from the Botanical Museum, University of Copenhagen, however only a few families were ever published. These valuable papers are found in *Dansk Botanisk Arkiv* 20:1–3 (1961–1963), 23:1–4 (1963–1968), and 27:1 (1969). Doi SuteP was visited in late 1965 during a Thai–Dutch botanical expedition, however no species are listed (Hennipman & Touw, 1966).

Küchler & Sawyer (1967), American plant geographers, were the first to intensively study the vegetation on Doi Sutep–Pui. This work, conducted from February–May 1966, resulted in the compilation of a detailed vegetation map (Küchler, 1966) and a preliminary flora (Sawyer & Chermisrivathana, 1969). A total of 679 species of vascular plants are enumerated in this flora which is less than 1/3 of the now known flora on the mountain. Botanical collecting continued on Doi Sutep–Pui with expeditions, especially from Denmark, Netherlands, and Japan, in collaboration with the Royal Forest Department Herbarium, however nothing has been enumerated. Our own research in the national park started in 1987 with the vegetation being published in 1988 (Maxwell, 1988) and a detailed ecological study in 1989 (Elliott *et al.*, 1989).

Initial Literature on the Flora of Doi Sutep–Pui

Based on his collecting trip of 1904–1905 to northern Thailand, Hosseus's first paper on his collections, including those from Doi Sutep–Pui, was about Acanthaceae—which included several new species from the mountain (Hosseus, 1907). This and several subsequent papers produced until 1911 are the first lists of plants, including many new species, for northern Thailand (Hosseus, 1907a, 1907b, 1910, 1911, 1911a). W. G. Craib, then at Kew*, combined all the known plants from the country, including those collected by Hosseus as well as Kerr and collaborators, into two publications (Craib, 1911, 1912). Craib, recipient of Kerr's and other collections until 1932 when the latter retired and continued his botanical work at Kew, continued his work on the Thai flora until his death at Kew on 1 September 1933 (Jacobs, 1962). The *Florae Siamensis Enumeratio*, which is essentially a summary of Craib's botanical work on Thai plants, was continued by Kerr, and after his demise on 21 January 1942, by Euphemia Barnett (Craib, 1925–1934; Kerr, 1936–1954; Barnett, 1962). The series was discontinued with Barnett's completion of Gesneriaceae, thus ending British dominance in studies on the Thai flora. It is very unfortunate that the *Florae Siamensis Enumeratio* has remained incomplete. The information that it contains, especially the details concerning distribution, elevation, types, and collections are not included in the *Flora of Thailand* (1970–present). The information presented in the *Dansk Botanisk Arkiv* series (1961–1969) is only useful for certain families from a few areas. Most of Kerr's early collections of Orchidaceae were studied by R. A. Rolfe (1855–1921) at Kew. The earliest of these were from the “mountains round Chiangmai” and include *Bulbophyllum kerrii* Rol. (= *Bulbophyllum hirtum* (J. E. Sm.) Lindl.; Rolfe, 1906), *Cirrhopetalum papillosum* Rol. (= *Bulbophyllum thaiorum* J. J. Sm.; Rolfe, 1908), *Bulbophyllum dixonii* Rol. (= *Bulbophyllum morphologorum* Krzl.) and *Ione siamensis* Rol. (= *Sunipia australis* (Seid.) P. F. Hunt (Rolfe, 1908a). The majority of Kerr's other orchid collections were also examined by Rolfe and published posthumously by Downie (1925). Most of the new species of vascular plants found on Doi Sutep–Pui, indeed throughout Thailand, were collected by Kerr, and described by Craib. Table 6 is a list of new species, *etc.* described from Doi Sutep–Pui that have been found during our project. Approximately 1/4 of these taxa have been synonymized with previously known species described from other countries.

*Craib worked at Kew, London 1909–1915; Edinburgh, Scotland 1915–1920; and finally at Aberdeen, Scotland 1920–1933 where he was Regius Professor of Botany.

Table 6. Vascular plants described from specimens collected in Doi Sutep–Pui National Park, *i.e.* the type locality, which have been rediscovered during this project (topotypes).

Species, etc.	Type
Ranunculaceae	
<i>Clematis eichleri</i> (M. Tam.) M. Tam.	topo
<i>Clematis sikkimensis</i> (Hk. f. & Th.) Drum. ex Burk.	topo of <i>Clematis siamensis</i> Drum. & Craib
<i>Naravelia siamensis</i> Craib	topo
Dilleniaceae	
<i>Dillenia parviflora</i> Griff. var. <i>kerrii</i> (Craib) Hoogl.	topo of paratype
Magnoliaceae	
<i>Michelia floribunda</i> Fin. & Gagnep.	topo of <i>Michelia kerrii</i> Craib
Annonaceae	
<i>Desmos dumosus</i> (Roxb.) Saff. var. <i>glabrior</i> Craib	topo
<i>Desmos sootepense</i> (Craib) Maxw.	topo
<i>Fissistigma oblongum</i> (Craib) Merr.	topo
<i>Fissistigma</i> sp.	topo of <i>Melodorum affine</i> Craib
<i>Miliusa cuneata</i> Craib	topo
<i>Polyathia debilis</i> (Pierre) Fin. & Gagnep	topo of <i>Desmos dubius</i> (Craib) Craib
Menispermaceae	
<i>Cyclea barbata</i> Miers	topo of <i>Cyclea ciliata</i> Craib
<i>Stephania brevipes</i> Craib	topo
<i>Stephania oblata</i> Craib	topo, also topo of <i>Stephania kerrii</i> Craib
Berberidaceae	
<i>Mahonia nepalensis</i> DC.	topo of <i>Mahonia siamensis</i> Tak. ex Craib
Capparaceae	
<i>Capparis kerrii</i> Craib	topo
Guttiferae	
<i>Garcinia mckeaniana</i> Craib	topo
Flacourtiaceae	
<i>Casearia flexuosa</i> Craib	topo
<i>Casearia grewiaefolia</i> Vent. var. <i>grewiaefolia</i>	topo of <i>Casearia kerrii</i> Craib
<i>Flacourtia indica</i> (Burm. f.) Merr.	topo of <i>Flacourtia lenis</i> Craib
<i>Xylosma brachystachys</i> Craib	topo
Theaceae	
<i>Camellia oleifera</i> Abel var. <i>confusa</i> (Craib) Sealy	topo
<i>Eurya nitida</i> Korth. var. <i>siamensis</i> (Craib) H. Keng	topo
<i>Gordonia dalglieshiana</i> Craib	topo
<i>Schima wallichii</i> (DC.) Korth.	topo of <i>Schima brevipes</i> Craib
Dipterocarpaceae	
<i>Dipterocarpus tuberculatus</i> Roxb. var. <i>tomentosus</i> Kerr	topo
Malvaceae	
<i>Hibiscus glanduliferus</i> Craib	topo
Sterculiaceae	
<i>Byttneria aspera</i> Colebr.	topo of <i>Byttneria siamensis</i> Craib
<i>Pterospermum grandiflorum</i> Craib	topo
Tiliaceae	
<i>Colona flagrocarpa</i> (Cl.) Craib	topo of <i>Colona flagrocarpa</i> (Cl.) Craib var. <i>siamensis</i> Craib

Species, etc.	Type
Elaeocarpaceae <i>Elaeocarpus stipularis</i> Bl.	topo of <i>Elaeocarpus siamensis</i> Craib
Rutaceae <i>Euodia glomerata</i> Craib	topo
Burseraceae <i>Canarium subulatum</i> Guill.	topo of <i>Canarium kerrii</i> Craib
Icacinaceae <i>Pittosporopsis kerrii</i> Craib	topo
Celastraceae <i>Euonymus similis</i> Craib	topo
<i>Euonymus sootepensis</i> Craib	topo
Vitaceae <i>Tetrastigma cruciatum</i> Craib & Gagnep.	topo
<i>Tetrastigma quadrangulum</i> Gagnep. & Craib	topo
Leeaceae <i>Leea guineensis</i> G. Don	topo of <i>Leea dentata</i> Craib
<i>Leea macrophylla</i> Roxb. ex Horn.	topo of <i>Leea pallida</i> Craib
Sapindaceae <i>Allophyllus cobbe</i> (L.) Raeusch.	topo of <i>Allophyllus sootepensis</i> Craib
<i>Meliosma simplicifolia</i> (Roxb.) Walp. ssp. <i>fordii</i> (Hemsl. ex Forb. & Hemsl.) Beus.	topo of <i>Meliosma simplicifolia</i> (Roxb.) Walp. var. <i>sootepensis</i> Craib
Connaraceae <i>Rourea minor</i> (Gaertn.) Leenh. ssp. <i>minor</i>	topo of <i>Santaloides siamensis</i> Schellenb.
Leguminosae, Mimosoideae <i>Xylia xylocarpa</i> (Roxb.) Taub. var. <i>kerrii</i> (Craib & Hutch.) Niels.	topo
Leguminosae, Caesalpinioidaeae <i>Afzelia xylocarpa</i> (Kurz) Craib	topo of <i>Afzelia siamica</i> Craib
<i>Bauhinia ornata</i> Kurz var. <i>kerrii</i> (Gagnep.) K. & S. S. Lar.	topo
<i>Cassia bakeriana</i> Craib	topo
Leguminosae, Papilionoideae <i>Crotalaria albida</i> Hey. ex Roth	topo of <i>Crotalaria hossei</i> Craib
<i>Dalbergia lanceolaria</i> L. f. var. <i>lakhonensis</i> (Gagnep.) Niyo. & Ho	topo of paratype of <i>Dalbergia lakhonensis</i> Gagnep. var. <i>appendiculata</i> Craib
<i>Dalbergia velutina</i> Bth. var. <i>succirubra</i> (Gagnep. & Craib) Niyo.	topo
<i>Dalbergia velutina</i> Bth. var. <i>velutina</i>	topo of <i>Dalbergia abbreviata</i> Craib
<i>Desmodium longipes</i> Craib	topo
<i>Dunbaria bella</i> Prain	topo of <i>Dunbaria longeracemosa</i> Craib
<i>Flemingia sootepensis</i> Craib	topo
<i>Indigofera laxiflora</i> Craib	topo
<i>Millettia latifolia</i> Dunn	topo
<i>Mucuna bracteata</i> A. DC.	topo of <i>Mucuna brevipes</i> Craib
<i>Pueraria mirifica</i> A. S. & Suvat.	topo
<i>Pueraria stricta</i> Kurz	topo of <i>Pueraria siamica</i> Craib
<i>Spatholobus suberectus</i> Dunn	topo of <i>Spatholobus floribundus</i> Craib
<i>Tephrosia kerrii</i> Drum. & Craib	topo
<i>Teyleria barbata</i> (Craib) Lack. ex Maes.	topo

Species, etc.	Type
Rosaceae	
<i>Parinari anamensis</i> Hance	topo of <i>Parinarium albidum</i> Craib
<i>Prunus cerasoides</i> D. Don	topo of <i>Prunus hosseusii</i> Diels
<i>Sorbus verrucosa</i> (Decne.) Rehd. var. <i>verrucosa</i>	topo of <i>Pyrus granulosa</i> Bertol. var. <i>siamensis</i> Craib
Escalloniaceae	
<i>Itea puberula</i> Craib	topo
Combretaceae	
<i>Terminalia glaucifolia</i> Craib	topo
<i>Terminalia mucronata</i> Craib & Hutch.	topo
Myrtaceae	
<i>Eugenia tetragona</i> Wight	topo of <i>Eugenia subviridis</i> Craib
Melastomataceae	
<i>Memecylon plebejum</i> Kurz	topo of syntypes of <i>Memecylon plebejum</i> Kurz var. <i>siamense</i> Craib and <i>Memecylon plebejum</i> Kurz var. <i>symplocinum</i> Craib
<i>Osbeckia chinensis</i> L. var. <i>chinensis</i>	topo of <i>Oxyspora parva</i> Gedd.
<i>Osbeckia stellata</i> Ham. ex Ker–Gawl. var. <i>crinita</i> (Bth. ex Naud.) C. Han.	topo of <i>Osbeckia paludosa</i> Craib, <i>Osbeckia pulchra</i> Gedd., and <i>Osbeckia pulchra</i> Gedd. var. <i>rubra</i> Craib
<i>Osbeckia stellata</i> Ham. ex Ker–Gawl. var. <i>marginulata</i> (Cl.) C. Han.	topo of <i>Osbeckia racemosa</i> Craib
<i>Sonerila erecta</i> Jack	topo of <i>Sonerila nisbetiana</i> Craib
<i>Sonerila griffithii</i> Cl.	topo of <i>Sonerila kerrii</i> Craib & Stapf
Lythraceae	
<i>Lagerstroemia cochinchinensis</i> Pierre var. <i>ovalifolia</i> Furt. & Mont.	topo of paratype
<i>Lagerstroemia macrocarpa</i> Kurz var. <i>macrocarpa</i>	topo of <i>Lagerstroemia hossei</i> Koeh. and <i>Lagerstroemia intermedia</i> Koeh. var. <i>oblonga</i> Craib
<i>Lagerstroemia venusta</i> Wall. ex Cl.	topo of <i>Lagerstroemia collettii</i> Craib
<i>Rotala diversifolia</i> Koeh.	topo
Passifloraceae	
<i>Adenia pinnasecta</i> (Craib) Craib var. <i>pinnasecta</i>	topo
<i>Passiflora siamica</i> Craib	topo of paratype
Cucurbitaceae	
<i>Gynostemma laxum</i> (Wall.) Cogn.	topo of <i>Gynostemma siamensis</i> Craib
<i>Neoalsomitra integrifoliola</i> (Cogn.) Hutch.	topo of <i>Gynostemma angustipetala</i> Craib and <i>Alsomitra angustipetala</i> (Craib) Craib
Begoniaceae	
<i>Begonia acetosella</i> Craib	topo
<i>Begonia siamensis</i> Gagenp.	topo
<i>Begonia yunnanensis</i> Lev.	topo of <i>Begonia sootepensis</i> Craib
Umbelliferae	
<i>Hydrocotyle siamica</i> Craib	topo
<i>Seseli siamicum</i> Craib	topo
Nyssaceae	
<i>Nyssa javanica</i> (Bl.) Wang.	topo of <i>Nyssa bifida</i> Craib
Caprifoliaceae	
<i>Viburnum inopinatum</i> Craib	topo

Species, etc.	Type
Rubiaceae	
<i>Argostemma ebracteolatum</i> Gedd.	topo of <i>Argostemma pubescens</i> Gedd.
<i>Gardenia sootepensis</i> Hutch.	topo
<i>Hedyotis nalampooni</i> Fuku.	topo
<i>Hedyotis tenelliflora</i> Bl. var. <i>kerrii</i> (Craib) Fuku.	topo
<i>Hyptianthera bracteata</i> Craib	topo
<i>Ixora butterwickii</i> Hole var. <i>lepida</i> Craib	topo of paratype
<i>Ixora cibdela</i> Craib var. <i>cibdela</i>	topo
<i>Ixora kerrii</i> Craib	topo
<i>Morinda angustifolia</i> Roxb. var. <i>scabridula</i> Craib	topo of paratype
<i>Mussaenda kerrii</i> Craib	topo
<i>Mussaenda parva</i> Wall. ex G. Don	topo of <i>Mussaenda sootepensis</i> Hoss. and <i>Mussaenda neosootepeensis</i> Craib
<i>Mussaenda sanderiana</i> Ridl.	topo of <i>Mussaenda sutepensis</i> Hoss. and <i>Mussaenda hossei</i> Craib ex Hoss.
<i>Mycetia glandulosa</i> Craib	topo
<i>Mycetia gracilis</i> Craib	topo
<i>Mycetia rivicola</i> Craib	topo
<i>Ophiorrhiza ridleyana</i> Craib	topo
<i>Paederia pilifera</i> Hk.f.	topo of <i>Paederia pilifera</i> Hk. f. var. <i>siamensis</i> Craib
<i>Paederia wallichii</i> Hk.f.	topo of <i>Paederia kerrii</i> Craib
<i>Pavetta fruticosa</i> Craib	topo
<i>Psychotria siamica</i> (Craib) Hutch.	topo
<i>Rothmannia sootepensis</i> (Craib) Brem.	topo
<i>Rubia siamensis</i> Craib	topo
<i>Wendlandia tinctoria</i> (Roxb.) DC. ssp. <i>floribunda</i> (Craib) Cowan	topo
Compositae	
<i>Blumea hossei</i> Craib ex Hoss.	topo
<i>Camchaya eberhardtii</i> (Gagnep.) Kit.	topo of <i>Iodocephalus glandulosus</i> Kerr
<i>Gynura longifolia</i> Kerr	topo
<i>Lactuca parishii</i> Craib ex Hoss.	topo
<i>Vernonia silhetensis</i> (DC.) Craib var. <i>silhetensis</i>	topo of <i>Vernonia silhetensis</i> (DC.) Craib var. <i>subserrata</i> (Hoss.) Craib
<i>Vernonia sutepensis</i> Kerr	topo
Ericaceae	
<i>Agapetes hosseana</i> Diels	topo
<i>Rhododendron moluainense</i> Hk.	topo of <i>Rhododendron siamensis</i> Diels
Primulaceae	
<i>Lysimachia lancifolia</i> Craib	topo
Myrsinaceae	
<i>Ardisia attenuata</i> Wall. ex A. DC.	topo of paratype of <i>Ardisia garrettii</i> Flet.
<i>Ardisia kerrii</i> Craib	topo

Species, etc.	Type
<i>Embelia impressa</i> Flet.	topo
<i>Embelia oblongifolia</i> Hemsl.	topo <i>Embelia impressa</i> Flet. var. <i>serrata</i> Flet.
<i>Embelia sessiliflora</i> Kurz	topo of <i>Embelia stricta</i> Craib
<i>Embelia sootepensis</i> Craib var. <i>sootepensis</i>	topo
Symplocaceae <i>Symplocos macrophylla</i> Wall. ex DC. ssp. <i>sulcata</i> (Kurz) Noot. var. <i>sulcata</i>	topo of <i>Symplocos kerrii</i> Craib var. <i>kerrii</i> and <i>Symplocos rajaniana</i> Craib
Styracaceae <i>Stryax benzoides</i> Craib	topo
Oleaceae <i>Jasminum funale</i> Decne. ssp. <i>sootepense</i> (Craib) P. S. Green	topo
<i>Chionanthus sutepensis</i> (Kerr) P. S. Green	topo
<i>Olea oblanceolata</i> Craib	topo
<i>Olea rosea</i> Craib	topo
Apocynaceae <i>Aganosma siamensis</i> Craib	topo
<i>Alyxia siamensis</i> Craib	topo
<i>Melodinus cochinchinensis</i> (Lour.) Merr.	topo of <i>Melodinus henryi</i> Craib
<i>Trachelospermum gracilipes</i> Hk. f.	topo of <i>Trachelospermum siamensis</i> Craib
Asclepiadaceae <i>Ceropegia sootepensis</i> Craib	topo
<i>Dischidia singularis</i> Craib	topo
<i>Gymnema griffithii</i> Craib	topo
<i>Heterostemma siamicum</i> Craib	topo
<i>Hoya engleriana</i> Hoss.	topo
<i>Hoya kerrii</i> Craib	topo
<i>Hoya siamica</i> Craib	topo
<i>Tylophora sootepensis</i> Craib	topo
Gentianaceae <i>Exacum sutapense</i> Hoss. ex Craib	topo
Boraginaceae <i>Tournefortia intonsa</i> Kerr	topo
Convolvulaceae <i>Argyreia henryi</i> (Craib) Craib	topo
<i>Argyreia kerrii</i> Craib	topo
<i>Ipomoea siamensis</i> Craib	topo
Lentibulariaceae <i>Utricularia caerulea</i> L.	topo of <i>Utricularia kerrii</i> Craib and <i>Utricularia sootepensis</i> Craib
Gesneriaceae <i>Aeschynanthus hildebrandii</i> Hemsl.	topo of <i>Aeschynanthus persimilis</i> Craib
<i>Aeschynanthus hosseusii</i> Pell.	topo of <i>Aeschynanthus macrocalyx</i> Hoss.
<i>Didymocarpus aureoglandulosus</i> Cl.	topo, also topo of <i>Didymocarpus rodgeri</i> W. W. Sm. & Ban. var. <i>siamensis</i> W.W. Sm.
<i>Didymocarpus kerrii</i> Craib	topo, also topo of <i>Didymocarpus squamosus</i> Craib

Species, etc.	Type
<i>Paraboea kerrii</i> (Craib) Burtt	topo
<i>Petrocosmea kerrii</i> Craib	topo
<i>Streptocarpus orientalis</i> Craib	topo
Acanthaceae	
<i>Asystasia hispida</i> Imlay	topo
<i>Asystasia salicifolia</i> Craib	topo
<i>Barleria strigosa</i> Willd.	topo of <i>Barleria siamensis</i> Craib
<i>Choresthes lanceolaria</i> (T. And.) B. Han.	topo of <i>Asystasia kerrii</i> Craib and <i>Choresthes racemiflora</i> Brem. var. <i>racemiflora</i>
<i>Justicia procumbens</i> L.	topo of <i>Rostellularia chiengmaiensis</i> Brem.
<i>Perilepta siamensis</i> (Cl.) Brem.	topo of syntype
<i>Pseuderanthemum parishii</i> (T. And.) Lindau	topo of paratype of <i>Pseuderanthemum siamensis</i> Im.
<i>Rungia parviflora</i> (Retz.) Nees var. <i>ciliata</i> Brem.	topo
<i>Strobilanthes apricus</i> (Hance) T. And. var. <i>pedunculatus</i> (Craib) Ben.	topo
<i>Strobilanthes consors</i> Cl. ex Hoss.	topo
<i>Strobilanthes imbricatus</i> Nees	topo of <i>Parasymphysis kerrii</i> Brem.
<i>Strobilanthes viscidus</i> Im.	topo of paratype
<i>Thunbergia similis</i> Craib	topo
Verbenaceae	
<i>Clerodendrum disparifolium</i> Bl.	topo of <i>Clerodendrum garrettianum</i> Craib
<i>Premna fulva</i> Craib	topo
Labiatae	
<i>Colquhounia elegans</i> Wall. var. <i>tenuiflora</i> Prain	topo of <i>Stachys siamensis</i> Musch.
<i>Elsholtzia winitiana</i> Craib	topo
<i>Gomphostemma lucidum</i> Wall. ex Bth.	topo of <i>Gomphostemma intermedium</i> Craib
<i>Platostoma siamense</i> (Murata) A. J. Paton	topo of paratype of <i>Geniosporum siamense</i> Murata
<i>Plectranthus hispidus</i> Bth.	topo of paratype of <i>Isodon nigropunctatus</i> Murata
<i>Plectranthus ternifolius</i> D. Don	topo of <i>Plectranthus hosseusii</i> Musch.
Aristolochiaceae	
<i>Aristolochia grandis</i> Craib	topo
<i>Aristolochia kerrii</i> Craib	topo
<i>Aristolochia pierrei</i> Lec.	topo of <i>Aristolochia hookeriana</i> Craib
<i>Sapria himalayana</i> Griff.	topo of <i>Richtofenia siamensis</i> Hoss.
Lauraceae	
<i>Potameia siamensis</i> Kosterm.	topo of paratype
Thymelaeaceae	
<i>Linostoma persimile</i> Craib	topo
Loranthaceae	
<i>Dendrophthoe curvata</i> (Bl.) Mig.	topo of <i>Loranthus kerrii</i> Craib
<i>Ginallia siamica</i> Craib	topo
<i>Macrosolen avenis</i> (Bl.) Dans.	topo of <i>Elytranthe affinis</i> Craib
<i>Scurrula atropurpurea</i> (Bl.) Dans.	topo of <i>Loranthus cultarum</i> Craib
<i>Scurrula ferruginea</i> (Roxb. ex Jack) Dans.	topo of <i>Loranthus sootepensis</i> Craib

Species, etc.	Type
Santalaceae	
<i>Scleropyrum wallichianum</i> (A. DC.) Arn. var. <i>siamensis</i> H. Lec.	topo
Euphorbiaceae	
<i>Acalypha kerrii</i> Craib	topo
<i>Antidesma buniu</i> (L.) Spreng.	topo of <i>Antidesma collettii</i> Craib
<i>Antidesma sootepense</i> Craib	topo
<i>Baliospermum siamense</i> Craib	topo
<i>Breynia glauca</i> Craib	topo
<i>Bridelia affinis</i> Craib	topo
<i>Glochidion acuminatum</i> M.-A. var. <i>siamense</i> A. S.	topo
<i>Glochidion kerrii</i> Craib	topo
<i>Macaranga kurzii</i> (O. K.) Pax & Hoffm.	topo of syntype of <i>Macaranga andersonii</i> Craib
<i>Ostodes paniculata</i> Bl.	topo of <i>Ostodes kerrii</i> Craib
<i>Phyllanthus roseus</i> (Craib & Hutch.) Beille	topo, also topo of <i>Phyllanthodendron album</i> Craib & Hutch., <i>Phyllanthodendron roseum</i> Craib & Hutch. var. <i>glabrum</i> Craib ex Hoss. and var. <i>siamensis</i> (Pax & Hoffm.) Craib
<i>Phyllanthus sootepensis</i> Craib	topo
<i>Sauropus bicolor</i> Craib var. <i>bicolor</i>	topo, also topo of <i>Sauropus rigidus</i> Craib
<i>Sauropus bicolor</i> Craib var. <i>minor</i> A. S.	topo
<i>Sauropus orbicularis</i> Craib var. <i>orbicularis</i>	topo
<i>Sauropus similis</i> Craib	topo
Urticaceae	
<i>Boehmeria Chiangmaiensis</i> Yaha.	topo of paratype
<i>Boehmeria pseudotomentosa</i> Yaha.	topo
<i>Boehmeria thailandica</i> Yaha.	topo of paratype
Fagaceae	
<i>Lithocarpus aggregatus</i> Barn.	topo
<i>Lithocarpus craibianus</i> Barn.	topo
<i>Lithocarpus finetii</i> (Hick. & A. Camus) A. Camus	topo of paratype of <i>Lithocarpus intermedius</i> Barn.
<i>Lithocarpus garrettianus</i> (Craib) A. Camus	topo
<i>Lithocarpus sootepensis</i> (Craib) A. Camus	topo
<i>Quercus kerrii</i> Craib var. <i>kerrii</i>	topo
<i>Quercus kerrii</i> Craib var. <i>pubescens</i> Barn.	topo
<i>Quercus kingiana</i> Craib	topo
Triuridaceae	
<i>Sciaphila thaidanica</i> K. Lar.	topo
Commelinaceae	
<i>Aneilema discretum</i> Craib	topo
Zingiberaceae	
<i>Amomum siamense</i> Craib	topo
<i>Curcuma ecomata</i> Craib	topo
<i>Globba kerrii</i> Craib	topo
<i>Globba nisbetiana</i> Craib	topo

Species, etc.	Type
<i>Globba nuda</i> K. Lar.	topo
<i>Globba purpurascens</i> Craib	topo
<i>Globba reflexa</i> Craib	topo
<i>Zingiber bradleyanum</i> Craib	topo
<i>Zingiber kerrii</i> Craib	topo
<i>Zingiber smilesianum</i> Craib	topo
Liliaceae	
<i>Aspidistra sutepensis</i> K. Lar.	topo
<i>Chlorophytum intermedium</i> Craib var. <i>intermedium</i>	topo
<i>Disporopsis longifolia</i> Craib	topo
<i>Ophiopogon longifolius</i> Decne.	topo of <i>Ophiopogon brevipes</i> Craib
<i>Peliosanthes teta</i> Andr. ssp. <i>humilis</i> (Andr.) Jess.	topo of <i>Ophiopogon gracilipes</i> Craib
<i>Tupistra albiflora</i> K. Lar.	topo
Smilacaceae	
<i>Smilax zeylanica</i> L. ssp. <i>hemsleyana</i> (Craib) T. Koy.	topo
Araceae	
<i>Amorphophallus corrugatus</i> N. E. Br.	topo of <i>Thomsonia sutepensis</i> Hu
<i>Amorphophallus krausei</i> Engl.	topo of <i>Amorphophallus sutepensis</i> Gagnep.
<i>Amorphophallus macrorhizus</i> Craib	topo, also topo of <i>Amorphophallus longituberosus</i> (Engl.) Engl. & Gehrm. var. <i>robustus</i> Hu
<i>Amorphophallus yunnanensis</i> Engl.	topo of <i>Amorphophallus kerrii</i> N.E. Br.
<i>Arisaema erubescens</i> (Wall.) Schott	topo of <i>Arisaema hypoglaucum</i> Craib and <i>Arisaema kerrii</i> Craib
<i>Arisaema praseri</i> Hk. f.	topo of <i>Arisaema sootepensis</i> Craib
<i>Colocasia fallax</i> Schott	topo of <i>Colocasia kerrii</i> Gagnep.
<i>Typhonium hirsutum</i> (Hu) Mur. & Mayo	topo
<i>Typhonium horsfieldii</i> (Miq.) Steen.	topo of <i>Typhonium larsenii</i> Hu
Stemonaceae	
<i>Stemona kerrii</i> Craib	topo
Dioscoreaceae	
<i>Dioscorea arachidna</i> Prain & Burk. var. <i>arachidna</i>	topo
<i>Dioscorea glabra</i> Roxb. var. <i>glabra</i>	topo of <i>Dioscorea glabra</i> Roxb. var. <i>vera</i> Pr. & Burk. and <i>Dioscorea siamensis</i> R. Kunth
<i>Dioscorea hispida</i> Denn. var. <i>neo-scaphoides</i> Prain & Burk.	topo
<i>Dioscorea kamoonsensis</i> Kunth var. <i>straminea</i> Prain & Burk.	topo
<i>Dioscorea kerrii</i> Prain & Burk.	topo
<i>Dioscorea pentaphylla</i> L. var. <i>communis</i> Prain & Burk.	topo
Palmae	
<i>Calamus kerrianus</i> Becc.	topo
<i>Plectocomia kerrana</i> Becc.	topo
Pandanaceae	
<i>Pandanus penetrans</i> St. John	topo
Orchidaceae	
<i>Anoectochilus repens</i> (Dow.) Seid. & Smit.	topo
<i>Anoectochilus siamensis</i> Schltr.	topo
<i>Aphyllorchis caudata</i> Rol. ex Dow.	topo

Species, etc.	Type
<i>Aphyllorchis montana</i> Rchb. f.	topo of <i>Aphyllorchis unguiculata</i> Rol. ex Dow.
<i>Brachcorythis helferi</i> (Rchb. f.) Summ.	topo
<i>Brachycorythis henryi</i> (Schltr.) Summ.	topo
<i>Bulbophyllum bittnerianum</i> Schltr.	topo of <i>Bulbophyllum bractescens</i> Rol. ex Kerr
<i>Bulbophyllum morphologorum</i> Krzl.	topo of <i>Bulbophyllum dixonii</i> Rol.
<i>Bulbophyllum propinquum</i> Krzl.	topo of <i>Bulbophyllum chlorostachys</i> Schltr.
<i>Bulbophyllum retusiusculum</i> Rchb. f.	topo of <i>Calanthe hosseusiana</i> Krzl.
<i>Calanthe cardioglossa</i> Schltr.	topo
<i>Cleisostoma arietinum</i> (Rchb. f.) Gar.	topo of <i>Sarcanthus recurvus</i> Rol. ex Dow.
<i>Cleisostoma fuerstenbergianum</i> Krzl.	topo of <i>Sarcanthus flagelliformis</i> Rol. ex Dow.
<i>Crepidium acuminatum</i> (D. Don) Szlach.	topo of <i>Microstylis siamensis</i> Rol. ex Dow.
<i>Crepidium biauratum</i> (Lindl.) Szlach.	topo of <i>Microstylis sutepensis</i> Rol. ex Dow.
<i>Crepidium orbicularum</i> (W. W. Sm. & Jeff.) Seid.	topo of <i>Microstylis tenebrosa</i> Rol. ex Dow.
<i>Cymbidium dayanum</i> Rchb. f.	topo of <i>Cymbidium sutepense</i> Rol. ex Dow.
<i>Cymbidium lancifolium</i> Hk.	topo of <i>Cymbidium kerrii</i> Rol. ex Dow.
<i>Cymbidium siamense</i> Rol. ex Dow.	topo
<i>Cyrtosia nana</i> (Rol. ex Dow.) Garay	topo
<i>Dendrobium compactum</i> Rol. ex W. Hack.	topo
<i>Dendrobium sutepense</i> Rol. ex Dow.	topo
<i>Dendrobium wilmsianum</i> Schltr.	topo
<i>Didymoplexiella siamensis</i> (Rol. ex Dow.) Seid.	topo
<i>Disperis siamensis</i> Rol. ex Dow.	topo
<i>Drymoda siamensis</i> Schltr.	topo
<i>Eria siamensis</i> Schltr.	topo
<i>Eria sutepensis</i> Rol. ex Dow.	topo
<i>Eulophia nuda</i> Lindl.	topo of <i>Eulophia burkei</i> Rol. ex Dow.
<i>Eulophia siamensis</i> Rol. ex Dow.	topo
<i>Galeola integra</i> Rol. ex Dow.	topo
<i>Gastrodia exilis</i> Hk. f.	topo of <i>Gastrodia siamensis</i> Rol. ex Dow.
<i>Geodorum siamense</i> Rol. ex Dow.	topo
<i>Goodyera fumata</i> Thw.	topo
<i>Habenaria amplexicaule</i> Rol. ex Dow.	topo
<i>Habenaria humistrata</i> Rol. ex Dow.	topo
<i>Habenaria limprichtii</i> Schltr.	topo
<i>Habenaria lucida</i> Wall. ex Lindl.	topo of <i>Habenaria recurva</i> Rol. ex Dow.
<i>Habenaria medioflexa</i> Turr.	topo of <i>Habenaria trichochila</i> Rol. ex Dow.
<i>Habenaria stenopetala</i> Lindl. var. <i>stenopetala</i>	topo of <i>Habenaria sutepensis</i> Rol. ex Dow.
<i>Liparis paradoxa</i> (Lindl.) Rchb. f.	topo of <i>Liparis odorata</i> Lindl. var. <i>longiscapa</i> Rol. ex Dow.
<i>Liparis regnieri</i> Fin.	topo of <i>Liparis craibiana</i> Kerr
<i>Liparis siamensis</i> Rol. ex Dow.	topo
<i>Liparis sutepensis</i> Rol. ex Dow.	topo
<i>Liparis wrayi</i> Hk. f.	topo of <i>Liparis fimbriata</i> Kerr

Species, etc.		Type
<i>Luisia thailandica</i> Seid.		topo of paratype
<i>Oberonia acaulis</i> Griff.		topo of <i>Oberonia hosseusii</i> Schltr. ex Hoss.
<i>Oberonia pachyrachis</i> Rchb. f. ex Hk. f.		topo of <i>Oberonia umbraticola</i> Rol.
<i>Peristylus tentaculatus</i> (Lindl.) J. J. Sm.		topo of <i>Habenaria garrettii</i> Rol. ex Dow.
<i>Polystachya concreta</i> (Jacq.) Garay & Sweet		topo of <i>Dendrobium parvum</i> Seid.
<i>Staurochilus loratus</i> (Rol. ex Dow.) Seid.		topo
<i>Tainia angustifolia</i> (Lindl.) Bth. & Hk. f.		topo of <i>Tainia sutepensis</i> (Rol. ex Dow.) Seid. & Smit.
<i>Tainia hookeriana</i> King & Pantl.		topo of <i>Ascotainia siamensis</i> Rol. ex Dow.
<i>Vanilla siamensis</i> Rol. ex Dow.		topo
<i>Zeuxine affinis</i> (Lindl.) Bth. ex Hk. f.		topo of <i>Zeuxine sutepensis</i> Rol. ex Dow.
Cyperaceae		
<i>Carex doisutepensis</i> T. Koy.		topo
<i>Carex indica</i> L. var. <i>microcarpa</i> T. Koy.		topo
<i>Carex speciosa</i> Kunth ssp. <i>latifolia</i> T. Koy.		topo
<i>Carex tricephala</i> Boeck.		topo of <i>Carex plesiocephala</i> Turr.
<i>Fimbristylis eragrostis</i> (Nees & Mey.) Hance		topo of <i>Fimbristylis tortispica</i> Turr.
<i>Fimbristylis straminea</i> Turr.		topo
<i>Scleria kerrii</i> Turr.		topo
Gramineae		
<i>Digitaria siamensis</i> Henr.		topo
<i>Eulalia siamensis</i> Bor		topo
<i>Hyparrhenia rufa</i> (Nees) Stapf var. <i>siamensis</i> Clayton		topo
Gramineae, Bambusoideae		
<i>Dendrocalamus nudus</i> Pilg.		topo
Cycadaceae		
<i>Epicycas tonkinensis</i> (L. Lind. & Rod.) de Laub.		topo of <i>Cycas micholitzii</i> Dyer var. <i>simplicipinna</i> Smit.
Aspleniaceae		
<i>Asplenium rockii</i> C. Chr.		topo
Athyriaceae		
<i>Diplazium siamense</i> C. Chr.		topo
totals: topotypes of current sp., var.	topotypes of synonymous sp., var.	total number of topotypes
322	135	457

Table 7 lists species whose type locality is Doi Sutep–Pui which have not been found during our field work. Some of these may eventually become synonyms of other species, while habitat loss and exploitation, especially for Orchidaceae, may have caused others to become very rare or extirpated from the national park. As far as we can determine, a total of 512 species, subspecies, and varieties of vascular plants have been described from Doi Sutep–Pui National Park. Among, these, 457 species, etc. have been collected during our research there. These two lists, while not exhaustive, indicate that more species of vascular plants have been described from Doi Sutep–Pui than anywhere else in Thailand. The second most prolific area is Doi Chiang Dao from where less than 100 species, etc. have been described.

Table 7. Vascular plants described from specimens collected in Doi Sutep–Pui National Park, *i.e.* the type locality, which have not been rediscovered during this project. The elevation for each entry is according to the protolog of the species.

Family	Species	Elevation (m)
Theaceae	<i>Camellia connata</i> (Craib) Craib	1500–1650
Rutaceae	<i>Paramignya surasiana</i> Craib	1650
Celastraceae	<i>Euonymus colonoides</i> Craib	1670
Leguminosae, Papilionoideae	<i>Dalbergia suthepensis</i> Niyo.	1200
	<i>Indigofera sootepensis</i> Craib ssp. <i>sootepensis</i>	480–900
Rosaceae	<i>Rubus rufus</i> Focke, topotype of <i>Rubus kerrii</i> Rol. ex Craib	720
Melastomataceae	<i>Osbeckia chinensis</i> L. var. <i>pusilla</i> (Zoll.) Triana, topotype of <i>Osbeckia parva</i> Gedd.	1330
Cucurbitaceae	<i>Siraitia siamensis</i> (Craib) C. Jeff. ex S. Q. Zhong & D. Fang, topotype of <i>Thladiantha siamensis</i> Craib	c. 660
Begoniaceae	<i>Begonia discreta</i> Craib	1350
Compositae	<i>Blumea hossei</i> Craib ex Hoss.	900
Rubiaceae	<i>Argostemma stellatum</i> Gedd.	400
	<i>Diplospora siamica</i> Craib	1650
	<i>Fagerindia</i> sp., topotype of <i>Randia plumbea</i> Craib	1050–1400
	<i>Lasianthus kerrii</i> Craib	1250
	<i>Psychotria sempervirens</i> Gedd.	900–1250
Ericaceae	<i>Rhododendron surasianum</i> Balf. f. & Craib	1560
Ebenaceae	<i>Diospyros kerrii</i> Craib	660–900
	<i>Diospyros truncata</i> Zoll. & Mor., topotype of <i>Diospyros viridis</i> Craib	1670
Apocynaceae	<i>Aganosma breviloba</i> Kerr	750
	<i>Anodendron paniculatum</i> A. DC., topotype of <i>Anodendron sutepense</i> Kerr	1650
Asclepiadaceae	<i>Brachystelma kerrii</i> Craib	360
	<i>Tylophora kerrii</i> Craib	1350
Gentianaceae	<i>Gentiana timida</i> Kerr	1500
Solanaceae	<i>Porana sutepensis</i> Kerr	900
Scrophulariaceae	<i>Limnophila villifera</i> Miq. ssp. <i>gracilipes</i> (Craib ex Hoss.) Yama.	330 (marsh)
Gesneriaceae	<i>Didymocarpus purpureo-pictus</i> Craib	700
Santalaceae	<i>Henslowia sessilis</i> Craib	1050(–1500)
Lauraceae	<i>Litsea pseudo-umbellata</i> Kosterm.	1200–1250
Euphorbiaceae	<i>Antidesma kerrii</i> Craib	1200
	<i>Sauropus siamensis</i> T. Chakrab. & Gang.	c. 730
Zingiberaceae	<i>Globba yeatsiana</i> Craib	960
Smilacaceae	<i>Heterosmilax pertenuis</i> (T. Koy.) T. Koy.	?

Family	Species	Elevation (m)
Orchidaceae	<i>Aerides flabellata</i> Rol. ex Dow.	360
	<i>Anoectochilus molumeinensis</i> (Par. & Rchb. f.) Seid., topotype of <i>Anoectochilus multiflorus</i> Rol. ex Dow.	1650
	<i>Bulbophyllum craibianum</i> Kerr	1200–1500
	<i>Bulbophyllum hirtum</i> (J. E. Sm.) Lindl., topotype of <i>Bulbophyllum kerrii</i> Rol.	675
	<i>Bulbophyllum sutepense</i> (Rol.) Seid. & Smit.	600–750
	<i>Bulbophyllum thaiorum</i> J. J. Sm., topotype of <i>Cirrhopetalum papillosum</i> Rol.	600
	<i>Ceratostylis siamensis</i> Rol. ex Dow.	1560
	<i>Cleisostoma duplicilodum</i> (J. J. Sm.) Garay, topotype of <i>Sarcanthus carinatus</i> Rol. ex Dow.	450–750
	<i>Dienia ophrydis</i> (Koen.) Orm. & Seid., topotype of <i>Microstylis carnulosa</i> Rol. ex Dow.	900 (–1450)
	<i>Diploproa truncata</i> Rol. ex Dow.	1650
	<i>Galeola cathcartii</i> Hk. f., topotypes of <i>Galeola kerrii</i> Rol. ex Dow. and <i>Galeola siamensis</i> Rol. ex Dow.	900
	<i>Galeola siamensis</i> Rol. ex Dow.	960
	<i>Gastrochilus pseudosistichus</i> (King & Pantl.) Schltr.,	1650
	<i>Gastrochilus sutepensis</i> (Rol. ex Dow.) Seid. & Smit.	1400
	<i>Gastrochilus yunnanensis</i> Schltr., topotype of <i>Sacciolabium monticolum</i> Rol. ex Dow.	1500
	<i>Habenaria marginata</i> Colebr., topotype of <i>Habenaria</i> <i>auranticea</i> Rol. ex Dow.	350
	<i>Liparis tenuis</i> Rol. ex Dow.	960 (–1100)
	<i>Pecteilis henryi</i> Schltr., topotype of <i>Platanthera lacei</i> Rol. ex Dow.	660
	<i>Schoenorchis spatulata</i> (Rol. ex Dow.) Seid. & Smit.	1350–1650
	<i>Sunipia andersonii</i> (King & Pantl.) P. F. Hunt, topotype of <i>Ione purpurata</i> Braid	1550–1670
	<i>Sunipia australis</i> (Seid.) P. F. Hunt, topotype of <i>Ione siamensis</i> Rol.	?
	<i>Thrixspermum stuepense</i> (Rol. ex Dow.) Tang & Wang	1500–1650

Total : 55 species

Teak Forest And Bamboo + Deciduous Seasonal Forest (bb/df)

Before the advent of large scale commercial logging in northern Thailand, about a hundred years ago, vast forests, dominated by teak (*Tectona grandis* L. f. (Verbenaceae), covered most of the lowlands and foothills up to an elevation of about 900 m. Today teak forest survives only in Mae Yom National Park (Mahidol University, 1992; Maxwell, 1999). Everywhere else, teak is absent or reduced to a minor component of degraded bamboo + deciduous forest, or deciduous secondary growth. Many of these destroyed teak forests have developed into deciduous dipterocarp-oak facies (dof), most of which have been subsequently degraded. Kurz (1877) referred to what I call **bb/df** as “mixed” forest and since that time almost every author, especially those in the Royal Forest Department, has called this kind of forest “mixed deciduous”. This type of forest has often been segregated from teak forest, but this is impracticable and has caused considerable confusion. Kurz provides detailed lists of what constitutes upper and lower mixed forests which, in my opinion, can hardly be considered distinct. There is no question that the ‘mixed deciduous’ forests in Thailand are very similar to those described by Kurz (Mahidol University, 1992 & 1995). “Mixed deciduous” forest, which is included here under **bb/df**, is in no way related to mixed evergreen + deciduous, seasonal, hardwood forest (**mxsf**), which is discussed below.

Tree species richness is relatively high in bamboo + deciduous forest (173 compared with only 99 in deciduous dipterocarp-oak forest). Removal of the previously dominant teak has released other tree species from competition and allowed more of them to achieve maturity. In bamboo + deciduous forest, the main canopy trees are up to 20–30 m tall. Deciduous trees comprise more than 80 % of individual trees. No single tree species approaches dominance. Buttresses, cauliflory, ramiflory, and palms are rare, but woody climbers can be abundant. Dense thickets of bamboo, which, as the name suggests are characteristic of this forest type, are a sign of disturbance because they are far more abundant than in the original teak forest at Mae Yom. Although they grow up when canopy cover is reduced by tree felling or fire, they can persist even after over-topped by trees and they can inhibit tree seedling regeneration by their shade. Epiphytes are moderately common. The shrub layer is dense and the ground layer consists mostly of mixed dicot herbs and grasses, especially where affected by fire.

Of the 173 tree species which occur in bamboo + deciduous forest, 125 (72 %) are deciduous and 31 are common or abundant. Valuable commercial tree species are still present, though in much reduced numbers *e.g.* teak (*Tectona grandis* L. f. (Verbenaceae), *Xylia xylocarpa* (Roxb.) Taub. var. *kerrii* (Craib & Hutch.) Niels. (Leguminosae, Mimosoideae), *Dalbergia cultrata* Grah. ex Bth. and *Pterocarpus macrocarpus* Kurz (both Leguminosae, Papilionoideae), *Lagerstroemia cochinchinensis* (Lythraceae), *Chukrasia tabularis* A. Juss. (Meliaceae), and *Azelia xylocarpa* (Kurz) Craib (Leguminosae, Caesalpinioideae). Logging favoured other less valuable species. Particularly characteristic are *Colona flagrocarpa* (Cl.) Craib (Tiliaceae), *Schleichera oleosa* (Lour.) Oken (Sapindaceae), *Terminalia chebula* Retz. var. *chebula* and *T. mucronata* Craib & Hutch. (Combretaceae), and *Sterculia pexa* Pierre (Sterculiaceae). Others include *Spondias pinnata* (L. f.) Kurz (Anacardiaceae), *Alstonia scholaris* (L.) R. Br. var. *scholaris* (Apocynaceae), *Protium serratum* (Wall. ex Colebr.) Engl. (Burseraceae) and, especially near streams, *Metadina trichotoma* (Zoll. & Mor.) Bakh. f. (Rubiaceae). Common understorey trees include: *Vitex canescens* Kurz and *V. limoniifolia* Wall. ex Kurz (both Verbenaceae), *Cassia fistula* L. (Leguminosae, Caesalpinioideae), *Antidesma acidum* Retz. and *Phyllanthus emblica*

L. (both Euphorbiaceae), *Stereospermum neuranthum* Kurz and *Oroxylum indicum* (L.) Kurz (both Bignoniaceae). Particularly characteristic deciduous understory treelets include *Desmodium laxiflorum* DC. ssp. *laxiflorum* and *D. pulchellum* (L.) Bth. (both Leguminosae, Papilionoideae).

Woody climbers (lianas), often quite large, are a notable feature of this forest type. There are 55 species of which 65% are deciduous. They include: *Millettia cinerea* Bth. and *M. extensa* (Bth.) Bth. ex Bak. (Leguminosae, Papilionoideae), *Combretum latifolium* Bl. (Combretaceae), and *Congea tomentosa* Roxb. var. *tomentosa* (Verbenaceae).

There are 30 shrub species, of which 63 % are deciduous. Shrubs are represented by many species in bamboo + deciduous forest. Some typical examples are: *Helicteres elongata* Wall. ex Boj. and *Helicteres hirsuta* Lour. (Sterculiaceae), *Desmodium gangeticum* (L.) DC. and *Desmodium velutinum* (Willd.) DC. ssp. *velutinum* var. *velutinum* (Leguminosae, Papilionoideae), *Sericocalyx quadrafarius* (Wall. ex Nees) Brem. (Acanthaceae), *Phyllanthus sootepensis* Craib, and *Sauropus hirsutus* Beille (both Euphorbiaceae). Bamboos (Gramineae, Bambusoideae) are abundant, especially in more disturbed areas e.g. *Bambusa membranacea* (Munro) Stap. & Xia, *Bambusa tulda* Roxb., and *Dendrocalamus nudus* Pilg.

Bamboo + deciduous forest supports 38 species of epiphytes, most of which are perennial and 58 % of which are evergreen. They mostly belong to 3 groups: Moraceae (figs, many of which begin their lives as epiphytes), Orchidaceae (orchids), and Pteridophytes (ferns). Species particularly characteristic of bamboo + deciduous forest include: *Ficus heterophylla* L. f. var. *heterophylla*, an evergreen woody climber; *Ficus microcarpa* L. f. var. *microcarpa* forma *microcapra* (Moraceae), an evergreen tree; *Cymbidium aloifolium* (L.) Sw. (Orchidaceae), a succulent evergreen herb; *Platyserium wallichii* Hk. and *Drynaria bonii* C. Chr. (both deciduous Polypodiaceae). The evergreen hemiparasitic epiphyte, *Scurrula atropurpurea* (Bl.) Dans. (Loranthaceae) is also restricted to bamboo + deciduous forest. Epiliths include 12 species, usually restricted to rocks in streams, including ferns such as *Selaginella kurzii* Bak. (Selaginellaceae) and *Pteris decrescens* Christ (Pteridaceae) and several species of the family Gesneriaceae, such as *Chirita hamosa* Wall. ex R. Br. and *Streptocarpus orientalis* Craib.

The ground is mostly bare during the dry season (November–April). The first herbs to appear are ginger (e.g. *Globba nuda* K. Lar. and *Kaempferia rotunda* L. (Zingiberaceae)), orchids (e.g. *Geodorum siamense* Rol. ex Dow., *Nervilia aragoana* Gaud. and *N. plicata* (Andr.) Schltr. (Orchidaceae), and aroids (e.g. *Amorphophallus macrorrhizus* Craib (Araceae)), all of which flower in April before their leaves appear. After the first rains have fallen in May, more species appear and flower e.g. *Curcuma parviflora* Wall. (Zingiberaceae), *Stemona burkillii* Prain (Stemonaceae, a vine), *Geodorum recurvum* (Roxb.) Alst., *Habenaria thailandica* Seid., and *Peristylus constrictus* (Lindl.) Lindl. (all Orchidaceae). By about July, many other herbs have matured, including many fern allies, e.g. *Selaginella ostenfeldii* Hier. (Selaginellaceae) and ferns such as *Aniscocampium cumingianum* Presl and *Kuniwatsukia cuspidata* (Bedd.) Pichi-Ser. (both Athyriaceae). By August, the ground is covered with a diverse herbaceous vegetation which dies back and later burns with the onset of the following dry season. *Dryopteris cochleata* (D. Don) C. Chr. (Dryopteridaceae), with its bimorphic fronds, is a characteristic fern among the ground flora. The grass most characteristic of the ground flora in bamboo + deciduous forest is *Oryza meyeriana* (Zoll. & Mor.) Baill. var. *granulata* (Watt) Duist. (Gramineae). Other common grasses, which also occur in other habitats, are *Microstegium vagans* (Nees ex Steud.) A. Camus and *Panicum notatum* Retz. (both Gramineae). They are a serious problem for forest regeneration, since they

are very combustible. Man-made fires, to clear the ground vegetation for gathering mushrooms and hunting, are common in such forest. A total of 316 herb species have been recorded in bamboo + deciduous forest, of which 294 are ground herbs. Of those, 65% are perennial.

Deciduous Dipterocarp–Oak Seasonal Forest (dof)

In seasonally dry or degraded areas, from the lowlands up to about 800–900 m elevation, deciduous dipterocarp–oak forest replaces bamboo + deciduous forest. It is a secondary, fire climax forest which merges with bamboo + deciduous forest, but is never replaced with mixed evergreen + deciduous forest (Photo 2).

Evidence for this claim comes from Maxwell's participation in an ecological survey of Mae Yom National Park, Prae Province, which is the last remaining, albeit rapidly disappearing, teak forest in Thailand (Mahidol University, 1992; Maxwell, 1999). Twenty transect lines spaced 2 km apart were established from the Yom River west following *Tectona grandis* L.f. (Verbenaceae, teak) to its upper limit. The lower 18 transects included **bb/df** facies, while the upper two lines, in clear-cut areas, were **dof**. An area between transects 18–19 was mixed **bb/df** and **dof**. The **dof** had no **bb/df** components. This shows that **dof** is secondary vegetation, since there was no trace of it in the lower part of the forest. It was not until this evidence was realized that definite conclusions concerning the origin, in this case from destroyed **bb/df**, could be made. Since **dof** is so abundant in NE Thailand, as well as in the lowlands of northern Thailand, it must be assumed that the original vegetation was primary, *i.e.* lowland evergreen, **bb/df**, and **mx**f (Table 4). In Khong District, Champasak Province, southern Laos, the original vegetation was mixed evergreen + deciduous seasonal forest (**mx**f) with an elevation range of 60– c. 239 m. Destruction of this vegetation has resulted in regrowth of **dof** (Maxwell, 2000). It is interesting to note that **dof**, when maintained by annual fire plus constant degradation by man, does not regenerate into its original facies. The soil in **dof** is generally more exposed, very eroded, and of inferior fertility than that found in **egf**, **bb/df**, and **mx**f.

Typically, **dof** occurs in lowlands and along dry ridges with little or no top soil, alternating with bamboo + deciduous forest in the moister gullies. Fires are very common in this forest type (Photo 4). Where they occur frequently, oaks (Fagaceae) may be rare or absent, but if such areas are protected from fire for 30 years or more, they can slowly re-establish themselves, provided mature, seed-producing trees survive nearby (*e.g.* *Quercus kerrii* Craib var. *kerrii*, *Castanopsis diversifolia* King ex Hk. f., and *Lithocarpus elegans* (Bl.) Hatus. ex Soep. (Fagaceae) (Kafle, 1997 and Meng, 1997)). In burnt areas at the upper elevation limits of this forest type, pine (*Pinus kesiya* Roy. ex Gord. (Pinaceae)) sometimes grows with the dipterocarps. Such forest is termed deciduous dipterocarp–oak + pine forest (Photo 5). *Pinus merkusii* Jungh. & De Vriese, formerly abundant from as low as c. 600 m, can only be found in one place on the southern side of Doi Sutep at 1200 m. This species, as well as *P. kesiya*, have been nearly extirpated because of logging, damage to mature trees by resin and kindling collectors, and habitat destruction (Photo 6).

As noted above, **dof** grows in places where the original primary forest, *i.e.* lowland evergreen, **bb/df**, and **mx**f; has been destroyed. Another possible source of **dof** is in lowland areas that originally included *Pinus merkusii*, *i.e.* **dof** + pine forest. There are a few remnant areas where **dof** + pine forest is still found in lowland areas, *e.g.* the Wiang Haeng area in Chiang Dao District, Chiang Mai Province and at Doi Kuhn Tan National Park, Lamphun–Lampang Provinces (Maxwell *et al.*, 1995). In late February 2000, Maxwell had an opportunity to visit an area in

Toong Hoa Chang District, Lampoon Province, where *Pinus merkusii* was found, albeit sparsely, at 550 m in **dof**. The removal of *Pinus merkusii*, which has probably happened extensively in the past, could also be another reason for the development of **dof**. As far as Doi Sutep–Pui National Park is concerned, there is no evidence for the origin of **dof**, but it is assumed that both the destruction of **bb/df** and removal (to the point of extirpation below 1000 m) of *Pinus merkusii* are involved. The original extent of **bb/df** in northern Thailand is well known, since most of this kind of forest has been destroyed in the past 100 years (De' Ath, 1992). Similar information for *Pinus merkusii* is lacking, but it is certain that it has been exploited for centuries and its original distribution and abundance have been reduced considerably. Both original teak-dominated **bb/df** and lowland **dof** with *Pinus merkusii* are absent in the national park.

In **dof**, most of the tree species which have been recorded there (82%) are completely deciduous, shedding their leaves in the dry season and flushing green again, usually before the onset of the rainy season. The trees are much shorter (rarely exceeding 20 m) than in bamboo + deciduous forest and the canopy is open or irregular. This allows a distinctive ground layer to develop, dominated by grasses and sedges which, along with dead leaves falling from the trees in the dry season, provide ample fuel for ground fires. Woody climbers are rare in this forest type and the shrub layer consists mainly of the saplings of the common tree species. Large bamboos are generally absent. Although the ground flora of deciduous dipterocarp–oak forest tends to be quite similar to that of bamboo + deciduous forest, the trees are very different.

With only 99 tree species, of which 24 are common or abundant, deciduous dipterocarp–oak forest has a relatively low tree species richness compared with the other forest types. In many of the most degraded areas, especially along ridge crests the tree *Dipterocarpus tuberculatus* Roxb. var. *tuberculatus* (Dipterocarpaceae) approaches dominance, but on gentle slopes or in slightly moister areas, this species tends to be replaced by *D. obtusifolius* Teijsm. ex Miq. var. *obtusifolius*. Other dominating tree species of the Dipterocarpaceae include *Shorea obtusa* Wall. ex Bl. and *S. siamensis* Miq. var. *siamensis* (Dipterocarpaceae). The most characteristic members of the Fagaceae are *Quercus kerrii* Craib var. *kerrii*, *Q. aliena* Bl., *Q. brandisiana* Kurz, and *Castanopsis argyrophylla* King ex Hk. f. (the last is one of the very few evergreen tree species in deciduous dipterocarp–oak forest). The small, fire resistant palm, *Phoenix loureiri* Kunth var. *loureiri* (Palmae), is an easily recognized indicator species of this forest type. Another particularly characteristic tree is *Ochna integerrima* (Lour.) Merr. (Ochnaceae). Also common are *Buchanania lanzan* Spreng. and *B. glabra* Wall. ex Hk. f., (both Anacardiaceae), *Craibiodendron stellatum* (Pierre) W. W. Sm. (Ericaceae), *Eugenia cumini* (L.) Druce (Myrtaceae), *Dalbergia cultrata* Grah. ex Bth. (Leguminosae, Papilionoideae), *Gluta usitata* (Wall.) Hou (Anacardiaceae), *Symplocos racemosa* Roxb. (Symplocaceae, Photo 7), and *Strychnos nux-vomica* L. (Loganiaceae). Two tree species exhibit rapid leaf turnover, flushing new leaves at the same time as the old leaves are shed, viz. *Tristaniaopsis burmanica* (Griff.) Wils. & Wat. var. *rufescens* (Hance) Parn. & Lug. (Myrtaceae), which is abundant and highly characteristic of this forest type, and *Anneslea fragrans* Wall. (Theaceae), which is also found in other forest types. At higher elevations (650–800 m) these two species, along with *Aporosa villosa* (Lindl.) Baill. (Euphorbiaceae), become very common (Elliott, Maxwell, & Beaver, 1989).

Deciduous dipterocarp–oak forest supports only 14 species of woody climbers, but the deciduous species *Spatholobus parviflorus* (Roxb.) O.K. (Leguminosae, Papilionoideae), *Aganosma marginata* (Roxb.) G. Don (Apocynaceae), and *Celastrus paniculatus* Willd. (Celastraceae) can be easily found.

Shrubs (29 species) and treelets (48 species) are abundant. Some common examples are: *Helicteres isora* L. (Sterculiaceae), *Grewia abutilifolia* Vent. ex Juss. and *Grewia lacei* Drum. & Craib (Tiliaceae), *Desmodium motorium* (Houtt.) Merr., *Desmodium triangulare* (Retz.) Merr., and *Indigofera cassioides* Rottl. ex DC. (all Leguminosae, Papilionoideae); *Gardenia obtusifolia* Roxb. ex Kurz and *Pavetta fruticosa* L. (both Rubiaceae), *Strobilanthes apricus* (Hance) T. And. var. *pedunculatus* (Craib) Ben. (Acanthaceae), *Premna herbacea* Roxb. and *Premna nana* Coll. & Hemsl. (Verbenaceae), *Breynia fruticosa* (L.) Hk. f., *Breynia glauca* Craib, *Sauropus bicolor* Craib var. *bicolor*, and *Sauropus quadrangularis* (Willd.) M.-A. var. *quadrangularis* (all Euphorbiaceae). *Pueraria wallichii* DC. (Leguminosae, Papilionoideae) grows as a deciduous shrub, which is often scandent, while *Mussaenda parva* Wall. ex G. Don (Rubiaceae, Photo 24) can be found as a deciduous vine, woody climber, or scandent shrub.

Vines are also common with *Dunbaria bella* Prain (Leguminosae, Papilionoideae), *Solena amplexicaulis* (Roxb.) Ghandi (Cucurbitaceae), *Streptocaulon juvenas* (Lour.) Merr. (Asclepiadaceae), and *Argyreia henryi* Craib (Convolvulaceae) commonly found in open, often burned, areas.

Forty-seven of the recorded vascular plant species in dof live as epiphytes. Some of the most characteristic are evergreen, succulent, vines and creepers in the Asclepiadaceae, viz. *Dischidia major* (Vahl) Merr., which has two kinds of leaves, i.e. normal and bladder-like ones which have a symbiotic relationship with ants; *Dischidia nummularia* R. Br. (Photo 3), and *Hoya kerrii* Craib, which is less common than *Hoya verticillata* (Vahl) G. Don var. *verticillata*. Numerous, succulent, evergreen and deciduous *Orchidaceae* (orchids) are also found, but as with the Asclepiadaceae taxa noted above, have been severely reduced in abundance by excessive collection for their commercial horticultural value. Some of these include: *Cleisomeria lanata* (Lindl.) Lindl., *Cleisostoma arietinum* (Rchb. f.) Garay, *Cymbidium ensifolium* (L.) Sw., *Dendrobium lindleyi* Steud., *Dendrobium porphyrophyllum* Guill., *Dendrobium secundum* (Bl.) Lindl., *Eria acervata* Lindl., *Eria pannea* Lindl., *Rhynchogyna saccata* Seid. & Garay, and *Vanda brunnea* Rchb. f. Two deciduous Polypodiaceae (ferns), both with characteristically distinct growth forms, are also frequently seen in dof, viz. *Drynaria rigidula* (Sw.) Bedd. and *Platyterium wallichii* Hk.

Of the 274 ground herbs which have been recorded in dof, 111 (40 %) are annuals. Some of the more common examples are: *Polygala longifolia* Poir. (Polygalaceae), *Biophytum umbraculum* Welw. (Oxalidaceae), *Crotalaria alata* D. Don, *C. albida* Hey. ex Roth, *C. neriifolia* Wall. ex Bth., *Indigofera hirsuta* L., *Uraria lacei* Craib (all Leguminosae, Papilionoideae), *Blumea lacera* (Burm. f.) DC., *Gynura integrifolia* Gagnep., and *Pluchea polygonata* (DC.) Gagnep. (all Compositae). Robust, deciduous Gramineae (grasses) dominate and are all very combustible during the hot-dry season, especially March-May. Some of the more common representatives are: *Apluda mutica* L., *Aristida cumingiana* Trin. & Rupr., *Arundinella setosa* Trin. var. *setosa*, *Capillipedium assimile* (Steud.) A. Camus, *Eulalia siamensis* Bor, *Heteropogon contortus* (L.) P. Beauv. ex Roem. & Schult., *Polytoca digita* (L. f.) Druce, and *Schizachyrium sanguineum* (Retz.) Alst. Cyperaceae (sedges) are also common in this fire-prone habitat with *Bulbostylis barbata* (Rottb.) Cl., *Carex continua* Cl., *Cyperus cuspidatus* Kunth, *Fimbristylis straminea* Turr., *Rhynchospora rubra* (Lour.) Mak., *Scleria kerrii* Turr., and *Scleria levis* Retz. as typical examples. Members of the Zingiberaceae (gingers) are quite common with *Curcuma ecomata* Craib, *Curcuma parviflora* Wall., *Curcuma zedoaria* (Berg.) Rosc., *Globba nuda* K. Lar., *Globba villosula* Gagnep., and *Kaempferia rotunda* L.—all of which are deciduous. Other common

ground herbs include *Barleria cristata* L. (Acanthaceae), *Geniosporum coloratum* (D. Don) O.K. (Labiatae), *Striga masuria* (B.-H. ex Bth.) Bth. (Scrophulariaceae), and *Aeginetia indica* Roxb. (Orobanchaceae)—the latter two being parasitic on the roots of other plants. *Selaginella ostenfeldii* Hiern. (Selaginellaceae) is a common, deciduous, ground fern ally while *Adiantum philippense* L., *A. zollingeri* Mett. ex Kuhn, and *Cheilanthes tenuifolia* (Burm. f.) Sw. (all Parkeriaceae) are common ferns of this forest type.

Mixed Evergreen + Deciduous, Seasonal Forest (mxf)

From about 800 m elevation (600 m near permanent streams) to about 1000 m, there is a mixture of deciduous and evergreen trees. Mixed evergreen + deciduous forest is a transitional zone between evergreen and deciduous forest types, but supports many species which do not occur in the other forest types. Such forest has exceptionally high tree species richness, up to 90 trees per hectare with a dbh of 10 cm or more (Elliott, Maxwell, & Beaver, 1989). In general, canopy height varies from 20 to 30 m, but emergent trees exceeding 30 m are fairly common. Canopy cover is usually complete, though less dense than in evergreen forest. Epiphytes are relatively common. Bamboos are present, but less prevalent than in bamboo + deciduous forest. There is usually a dense ground layer of herbs and tree seedlings. Grasses occasionally dominate the ground layer where fire has occurred.

A total of 217 tree species have been recorded in mixed evergreen + deciduous forest, of which only about 43% are deciduous. There are strong similarities between the tree floras of mixed evergreen + deciduous forest and bamboo + deciduous forest. Of the 38 tree species, common or abundant in the former, 21 (55%) are shared with the latter. The most easily recognized evergreen canopy tree species, characteristic of this forest type, are the tall, emergent, evergreen, dipterocarps, viz. *Dipterocarpus costatus* Gaertn. f. (Photo 8) and *D. turbinatus* Gaertn. f. (Dipterocarpaceae). Their massive grey trunks, small leaves, and open, broad crowns readily distinguish them from the large-leaved dipterocarps of deciduous dipterocarp–oak forest. *Mangifera caloneura* Kurz (Anacardiaceae) and *Eugenia albiflora* Duth. ex Kurz (Myrtaceae) are also common, while *Balakata baccata* (Roxb.) Ess. (Euphorbiaceae) is shared with evergreen forest. *Duabanga grandiflora* (Roxb. ex DC.) Walp. (Sonneratiaceae) and *Irvingia malayana* Oliv. ex Benn. (Irvingiaceae) are tall evergreen species which are also found in this habitat. Some common deciduous canopy trees are *Lagerstroemia cochinchinensis* Pierre var. *ovalifolia* Furt. & Mont. and *L. tomentosa* Presl (Lythraceae), *Spondias pinnata* (L. f.) Kurz (Anacardiaceae), *Terminalia mucronata* Craib & Hutch. (Combretaceae), and *Engelhardia serrata* Bl. var. *serrata* (Juglandaceae). Common evergreen understorey trees include *Garcinia speciosa* Wall. (Guttiferae), *Lithocarpus elegans* (Bl.) Hatus. ex Soep. (Fagaceae), *Scleropyrum wallichianum* Arn. var. *siamensis* H. Lec. (Santalaceae), *Turpinia pomifera* (Roxb.) Wall. ex DC. (Staphyleaceae), *Knema laurina* (Bl.) Warb. (Myristicaceae), *Cinnamomum iners* Reinw. ex Bl. (Lauraceae), and *Baccaurea ramiflora* Lour. (Euphorbiaceae), while *Bauhinia variegata* L. (Leguminosae, Caesalpinioideae) is deciduous.

Seventy-one treelet and 19 shrub species have been recorded in mxf. Treelets and shrubs frequently seen include *Millettia caerulea* Grah. ex Bak. (Leguminosae, Papilionoideae), which is deciduous and *Ixora cibdela* Craib var. *puberula* Craib and *Psychotria opioxyloides* Wall. (both Rubiaceae), both of which are evergreen.

Woody climbers are common. Sixty two species have been recorded in **mx**f, including *Combretum trifoliatum* Vent., *C. latifolium* Bl. (Combretaceae), and *Ventilago denticulata* Willd. (Rhamnaceae), all of which are deciduous; while *Combretum sundaicum* Miq. (Combretaceae), *Rhamnus nipalensis* (Wall.) Laws. (Rhamnaceae), and *Tetrastigma laoticum* Gagnep. (Vitaceae) are common evergreen representatives, especially along streams.

Fifty-seven of the vascular plant species recorded in **mx**f grow as epiphytes. The most specious groups are the figs (Moraceae, many of which are epiphytes only when young), orchids, and Pteridophytes, but the Gesneriaceae and Loranaceae are also represented. Epiphytes, particularly characteristic of **mx**f include, *Bulbophyllum congestum* Rol. and *B. propinquum* Krzl. (Orchidaceae) and the hemiparasites *Helixanthera pulchra* (DC.) Dans. and *Dendrophthoe pentandra* (L.) Miq. (both Loranaceae).

The ground flora is diverse and includes both annual, perennial, deciduous and evergreen species. Of the 278 ground herbs recorded in **mx**f, 25 % are annuals. Common deciduous herbs include *Strobilanthes anfractuosa* Cl. ex Hoss. and *Ruellia siamensis* Im. (both Acanthaceae), *Begonia integrifolia* Dalz. (Begoniaceae), and *Zingiber kerrii* Craib and *Globba villosula* Gagnep. (both Zingiberaceae). Evergreen herb species are more common (comprising 60% of ground perennials) and include: *Tacca chantrieri* Andr. (Taccaceae), *Amomum uliginosum* Koen. (Zingiberaceae), while *Thelypteris arida* (D. Don) Mort. (Thelypteridaceae) and *Cibotium barometz* (L.) J. Sm. (Dicksoniaceae) are typical ferns. Seedlings, saplings, and immature herbs are also common constituents of the ground flora, especially in areas that are shaded and less disturbed.

Primary, Evergreen, Seasonal Forest Without Pine (egf)

The upper part of the mixed evergreen + deciduous forest usually merges with the lower part of the evergreen forest at c. 900–950 m elevation. The vascular flora of evergreen forest is quite distinct. The main canopy of evergreen forest is higher and denser than that of the other forest types, often exceeding 30 m in height. Emergent trees sometimes occur and beneath the main canopy there is usually a lower story, comprised of smaller trees, treelets, and shrubs. Woody climbers are common. The high abundance of epiphytes is an obvious feature of evergreen forest, especially on exposed slopes and near summits, where in addition to the vascular plants mentioned below, bryophytes and lichens encrust tree trunks and branches. Tall bamboos are scarce. The ground flora is often dense and consists of tree seedlings and herbs, including several which have a saprophytic or parasitic way of life. Grasses only invade into burnt or otherwise disturbed areas. Fires are less common in evergreen than in deciduous forests, but evergreen forest is less resilient of fire damage than deciduous forest. In particular shrubs and the ground flora take many years to recover after burning.

Evergreen forest supports more tree species than any of the other forest types, 250 have been recorded, of which only 67 (27%) are deciduous. Although no species or genus dominates, several families tend to be better represented there than in the deciduous forest types e.g. Lauraceae, Fagaceae, Theaceae, Moraceae, Magnoliaceae, etc. Most canopy trees tend to be evergreen. Characteristic ones include *Alseodaphne andersonii* (King ex Hk. f.) Kosterm., *Beilschmiedia* aff. *intermedia* Allen, and *Cryptocarya amygdalina* Nees (all Lauraceae), *Artocarpus lanceolata* Trec., and several gigantic “strangling” figs, e.g. *Ficus altissima* Bl. and *F. benjamina* L. var. *benjamina* (all Moraceae). Of the Fagaceae, *Quercus vestita* Rehd. & Wils., *Q. glabricupula* Barn., *Q. incana* Roxb., and *Q. lineata* Bl. are all highly characteristic, while *Castanopsis* spp. tend to be shared

with other forest types, e.g. *Castanopsis acuminatissima* (Bl.) A. DC. and *Castanopsis armata* (Roxb.) Spach. Other characteristic evergreen trees include *Pyrenaria garrettiana* Craib (Theaceae), *Garcinia mckeaniana* Craib (Guttiferae), *Casearia grewiifolia* Vent. var. *gelonioides* (Bl.) Sleum. (Flacourtiaceae), *Chionanthus sutepensis* (Kerr) P. S. Green (Oleaceae), *Elaeocarpus prunifolius* Wall. ex C. Muell. (Elaeocarpaceae), *Dysoxylum* aff. *hamiltonii* Hiern (Meliaceae), *Ostodes paniculata* Bl. (Euphorbiaceae), and *Diospyros marlabarica* Cl. (Ebenaceae). Very few deciduous tree species are truly characteristic of evergreen forest. Most also occur in the deciduous forest types. A few of the larger deciduous canopy species include *Michelia champaca* L. var. *champaca* and *Michelia baillonii* Pierre (both Magnoliaceae), *Homalium ceylanicum* (Gardn.) Bth. (Flacourtiaceae), *Melia toosendan* Sieb. & Zucc. (Meliaceae), and *Morus macroura* Miq. (Moraceae). Some of the deciduous trees which are restricted to evergreen forest are rather rare e.g. *Hovenia dulcis* Thunb. (Rhamnaceae), *Acrocarpus fraxinifolius* Wight & Arn. (Leguminosae, Caesalpinioideae), and *Litsea zeylanica* (Nees) Nees (Lauraceae). Other deciduous trees more typical of deciduous forest types sometimes spread up into evergreen forest where disturbance, especially fire, has occurred. Common tree species shared with other forest types include *Balakata baccata* (Roxb.) Ess. (Euphorbiaceae), *Schima wallichii* (DC.) Korth. (Theaceae), *Gluta obovata* Craib (Anacardiaceae), *Duabanga grandiflora* (Roxb. ex DC.) Walp. (Sonneratiaceae), and *Mischocarpus pentapetalus* Radlk. (Sapindaceae).

The understorey is denser than that of forests at lower elevations and is especially diverse in stream valleys. Understorey trees include: *Phoebe lanceolata* (Wall. ex Nees) Nees (Lauraceae), *Acronychia pedunculata* (L.) Miq. (Rutaceae), *Sarcosperma arboreum* Bth. (Sapotaceae), and *Diospyros glandulosa* Lace (Ebenaceae). *Styrax benzoides* Craib (Styracaceae) and *Maesa ramentacea* Wall. ex Roxb. (Myrsinaceae) are also common, but grow in disturbed places. Some understory trees species, rarely exceeding 15 m tall, include *Elaeocarpus prunifolius* Wall. ex C. Muell. (Elaeocarpaceae), *Semecarpus cochinchinensis* Engl. (Anacardiaceae), *Turpinia pomifera* (Roxb.) Wall. ex DC. (Staphyleaceae), *Eugenia fruticosa* (DC.) Roxb. (Myrtaceae), *Actinodaphne henryi* Gamb. (Lauraceae), and *Helicia nilagirica* Bedd. (Proteaceae)—all of which are evergreen. *Spondias axillaris* Roxb. (Anacardiaceae) and *Engelhardia spicata* Lechen. ex Bl. var. *spicata* (Juglandaceae) are deciduous representatives.

Treelets and shrubs (91 and 22 recorded species, respectively) are numerous. Characteristic treelets include *Vernonia volkameriifolia* DC. var. *volkameriifolia* (Compositae), *Glochidion kerrii* Craib (Euphorbiaceae), *Debregeia longifolia* (Burm. f.) Wedd. (Urticaceae), *Archidendron glomeriflorum* (Kurz) Niels. (Leguminosae, Mimosoideae), the palm *Areca laosensis* Becc. (Palmae), and *Litsea salicifolia* (Roxb. ex Nees) Hk. f. and *L. cubeba* (Lour.) Pers. var. *cubeba* (both Lauraceae). Characteristic evergreen shrubs include *Psychotria ophioxylodes* Wall. (Rubiaceae) and *Phlogacanthus curviflorus* (Wall.) Nees var. *curviflorus* (Acanthaceae) in wet places. *Pandanus penetrans* St. John (Pandanaceae) and *Musa itinerans* Cheesm. (Musaceae) are particularly characteristic of shaded, undisturbed stream valleys. Also common are *Clerodendrum serratum* (L.) Moon var. *wallichii* Cl. (Verbenaceae), *Ardisia virens* Kurz (Myrsinaceae), and *Euodia triphylla* DC. (Rutaceae).

A high species richness of woody climbers (78 species) is a notable feature of evergreen forest. Some characteristic evergreen examples include: *Toddalia asiatica* (L.) Lmk. (Rutaceae), *Ficus parietalis* Bl. (Moraceae), *Bauhinia glauca* (Wall. ex Bth.) Bth. ssp. *tenuiflora* (Watt ex Cl.) K. & S.S. Lar. (Leguminosae, Caesalpinioideae), *Combretum punctatum* Bl. ssp. *squamosum* (Roxb.

ex G. Don) Exell (Combretaceae), and *Uncaria macrophylla* Wall. (Rubiaceae). Also common are several species of *Tetrastigma* (e.g. *T. laoticum* Gagnep. and *T. obovatum* (Laws.) Gagnep. (Vitaceae)) and *Mucuna macrocarpa* Wall. (Leguminosae, Papilionoideae, Photo 23), which also occur in mixed evergreen + deciduous forest. Rattans (Palmae) include three species which, because of extensive human exploitation and loss of habitat, are much less common than they used to be. *Calamus kerrianus* Becc. and *Plectocomia kerrana* Becc., both evergreen woody climbers and originally described from specimens collected on Doi Sutep, are continually destroyed for their valuable stems (“cane”), which are used for many purposes. Although *Calamus kerrianus* is frequently seen immature, it is rarely found mature and even less so in flower or fruit. Its range is from c. 700–1525 m in mainly **mx** and **egf**. *Plectocomia kerrana* is a much more robust species and is only known from the upper part of Chang Kian Valley, 1350–1400 m, where it is severely threatened by people living in the area. *Calamus arborescens* Griff., a treelet or shrub, is only known from the middle of Chang Kian Valley at 1050 m.

Epiphytes abound in evergreen forest. The 82 species recorded there include trees, shrubs, vines, and herbs. The trees include the so-called “strangling” figs which begin life as epiphytes, e.g. *Ficus superba* (Miq.) Miq. var. *superba* (Moraceae), and the very rare *Sorbus verrucosa* (Decne.) Rehd. var. *verrucosa* (Rosaceae). Characteristic epiphytic shrubs include *Rhododendron vietichianum* Hk. (Ericaceae), several evergreen hemiparasitic species of the family Loranthaceae, e.g. *Macrosolen cochinchinensis* (Lour.) Tiegh., *Viscum ovalifolium* Wall. ex DC., and *V. orientale* Willd.; and the very rare *Fagraea ceilanica* Thunb. (Loganiaceae). Characteristic epiphytic vines include the rather uncommon species *Rhaphidophora glauca* (Wall.) Schott (Araceae) and *Hoya siamica* Craib (Asclepiadaceae). Epiphytic herbs are nearly all perennials. Species particularly characteristic of evergreen forest include: *Hedychium ellipticum* Ham. ex J. Sm. (Zingiberaceae), orchids, e.g. *Bulbophyllum bittmerianum* Schltr., *Coelogyne schultesii* Jain & Das., and *Trichotosia dasyphylla* (Par. & Rchb. f.) Krzl. (Orchidaceae); ferns, e.g. *Lepisorus nudus* (Hk.) Ching (Polypodiaceae) and *Davallodes membranulosum* (Hk.) Copel. (Davalliaceae), and members of the Gesneriaceae e.g. *Didymocarpus wattianus* Craib and *Aeschynanthus hosseusii* Pell.

The herbaceous ground flora (321 recorded species) is very diverse and includes numerous species of dicots, monocots, and ferns. Some of the most characteristic ferns of this forest type are *Brainea insignis* (Hk.) J. Sm. (Blechnaceae) and *Dicranopteris linearis* (Burm. f.) Underw. var. *linearis* (Gleicheniaceae), in open, fire-damaged places; while *Arachnoides henryi* (Christ) Ching and *Tectaria herpetocaulos* Holtt. (both Dryopteridaceae), *Thelypteris subelata* (Bak.) K. Iw. (Thelypteridaceae), and *Diplazium dilatatum* Bl. (Athyriaceae) are in shaded, mostly pristine areas. Some common dicots are: *Impatiens violaeiflora* Hk. f. (Balsaminaceae), *Hydrocotyle siamica* Craib (Umbelliferae), *Ophiorrhiza hispidula* Wall. ex G. Don var. *hispidula* and *Geophila repens* (L.) I.M. John. (both Rubiaceae), *Wedelia montana* (Bl.) Boerl. var. *wallichii* (Less.) H. Koy. (Compositae), and *Pilea trinervia* Wight (Utricaceae). Frequently encountered herbaceous monocots are: *Aneilema sinicum* Lindl., *Commelina diffusa* Burm. f., and *Murdannia gigantea* (Vahl) Bruck (all Commelinaceae); *Globba kerrii* Craib, *G. villosula* Gagnep., and *Zingiber smilesianum* Craib (all Zingiberaceae), *Acorus gramineus* Sol. ex W. Ait., an epilithic rheophyte, and *Amorphophallus corrugatus* N.E. Br. (both Araceae), the very rare *Vanilla siamensis* Rol. ex Dow. (Orchidaceae, a vine), and *Carex baccans* Nees (Cyperaceae). Parasitic or saprophytic members of the ground flora include several *Balanophora* species, viz. *B. abbreviata* Bl. and

B. fungosa J. R. & G. Forst. ssp. *indica* (Arn.) B. Han. var. *indica* (Balanophoraceae), *Aeginetia indica* Roxb. (Orobanchaceae, Photo 9), *Sapria himalayana* Griff. (Rafflesiaceae), and rare orchids, e.g. *Epipogium roseum* (D. Don) Lindl. and *Stereosandra javanica* Bl. (Orchidaceae).

Primary Evergreen, Seasonal Forest With Pine (eg/pine)

On fire-prone, exposed ridges at elevations of about 950–1,800 m *Pinus kesiya* Roy. ex Gord. (Pinaceae, pine) grows together with other evergreen forest tree species and in some places it dominates the forest. The canopy of evergreen forest with pine tends to be more open than that of evergreen forest. Some species more commonly found with *Pinus kesiya* than elsewhere, mostly due to the lower pH of the soil, include *Viburnum inopinatum* Craib (Caprifoliaceae), *Helicia nilagirica* Bedd. (Proteaceae), *Myrica esculenta* B.-H. ex D. Don (Myricaceae); *Castanopsis argyrophylla* King ex Hk. f., *Quercus brandisiana* Kurz, which is deciduous, and *Q. leticellata* Barn. (all Fagaceae). Where fires are particularly frequent, plants of deciduous dipterocarp–oak forest spread up into the pine forests at much higher elevations than is typical, e.g. *Craibiodendron stellatum* (Pierre) W.W. Sm. and *Vaccinium sprengelii* (D. Don) Sleum. (Photo 10) (both Ericaceae), *Anneslea fragrans* Wall. (Theaceae), and *Aporosa villosa* (Lindl.) Baill. In such areas, trees of the Fagaceae family are also common, e.g. *Castanopsis armata* (Roxb.) Spach, *C. tribuloides* (Sm.) A. DC., *Lithocarpus elegans* (Bl.) Hatus. ex Soep., *L. fenestratus* (Roxb.) Rehd., and *Quercus vestita* Rehd. & Wils. Altogether 99 tree species have been recorded in eg/pine, of which only 27 (27%) are deciduous.

The ground flora includes 263 recorded herb species, both annuals (32%) and perennials (68%). Annual herbs include: *Blumeopsis flava* (DC.) Gagnep. and *Anaphalis margaritacea* (L.) Bth. & Hk. f. (both Compositae), *Lobeia nicotianaefolia* Roth ex Roem. & Schult. (Campanulaceae) and *Exacum pteranthum* Wall. ex Colebr. (Genitanaceae). Some deciduous, perennial counterparts are *Inula cappa* (Ham. ex D. Don) DC. forma *cappa* (Compositae), *Pratia begoniifolia* (Wall. ex Roxb.) Lindl. (Campanulaceae), a creeper, *Anthogonium gracile* Wall. ex Lindl. (Orchidaceae), *Oleandra undulata* (Willd.) Ching (Oleandraceae), and *Kuniwatsukia cuspidata* (Bedd.) Pic.–Ser. (Athyriaceae).

Epiphytes (86 recorded species) are especially conspicuous and include both evergreen species (68%) and annual or deciduous ones (32%). Epiphytic, hemi-parasitic Loranthaceae, all evergreen shrubs, are common with *Dendrophthoe pentandra* (L.) Miq., *Helixanthera parasitica* Lour., *Macrosolen avenis* (Bl.) Dans., *Scurrula ferruginea* (Roxb. ex Jack) Dans., and *Viscum ovalifolium* Wall. ex DC.. Autotrophic evergreen, epiphytic and epilithic shrubs are frequently encountered with *Agapetes hosseana* Diels (Ericaceae), *Aeschynanthus hildebrandii* Hemsl. and *Aeschynanthus hosseusii* Pell. (Gesneriaceae). Some common evergreen epiphytic and epilithic herbs are: *Vittaria flexuosa* Fee (Vittariaceae), *Elaphoglossum yoshinagae* (Yat.) Mak. (Lomariopsidaceae), *Lepisorus bicolor* (Tag.) Ching, and *Pyrrosia stigmosa* (Sw.) Ching (both Polypodiaceae). Deciduous representatives include *Didymocarpus aureoglandulosus* Cl., *Didymocarpus kerrii* Craib (Gesneriaceae, Photo 11), *Araiostegia pulchra* (D. Don) Copel. (Davalliaceae); *Crypsinus cruciformis* (Ching) Tag., *Crypsinus oxylobus* (Wall. ex O.K.) Sledge, *Drynaria propinqua* (Wall. ex Mett.) J. Sm. ex Bedd. and *Microsorium membranaceum* (D. Don) Ching (all Polypodiaceae).

Epiphytic Orchidaceae, all of which have been extensively exploited for the horticulture market, are now much less common than they were 25 years ago. Some evergreen examples

are: *Cleisostoma fuerstenbergianum* Krzl., *Coelogyne trinervis* Lindl., *Dendrobium christyanthum* Rchb. f., *Dendrobium cariniferum* Rchb. f., *Pholidota articulata* Lindl., and *Trichotosia dasyphylla* (Par. & Rchb. f.) Krzl. Some deciduous representatives are: *Bulbophyllum secundum* Hk. f., *Bulbophyllum suavisimum* Rol., *Dendrobium falconeri* Hk., *Dendrobium heterocarpum* Lindl., *Diploprora championi* (Lindl.) Hk. f., and *Oberonia pachyphylla* King & Pantl. *Zeuxine affinis* (Lindl.) Bth. ex Hk. f., a delicate, deciduous, saprophytic ground herb is still commonly found in **eg/pine** areas. *Phaius tankervilleae* (Banks ex L'Her.) Bl., a particularly showy, evergreen ground orchid has perhaps become extirpated from the park, while the deciduous *Tainia viridifusca* (Hk.) Bth. & Hk. f., with highly conspicuous inflorescences, has become extremely rare.

Thirty-five vine species have been recorded in **eg/pine**, including: *Codonopsis javanica* (Bl.) Hk. f. (Campanulaceae), an evergreen species, while *Clitoria mariana* L. and *Shuteria involucrata* (Wall.) Wight & Arn. var. *involucrata* (both Leguminosae, Papilionoideae) are deciduous.

Summit Flora

Hosseus and Kerr collected many specimens in the summit areas (1500–1685 m) of Doi Sutep and Doi Pui, many of which were described as new species. This summit flora, because of the peculiar habitats it requires, includes many species that are not found or are found in less abundance at lower elevations. The original forest was **eg/pine** with a dense **egf** flora in the upper water catchment valleys. Unfortunately, the upper summit area, c. 1600–1685 m, was cleared in 1957 and replanted with *Cupressus torulosa* D. Don (Cupressaceae), which is native to the Himalayas, and *Pinus kesiya* Roy. ex Gord. (Pinaceae), a native tree. Although these trees are now mature, much of the original flora has been extirpated. Some surviving relicts of the past can still be found there, but are mixed with weeds, secondary growth, and invading components of **do/pine**.

Table 7 lists 55 species described from Doi Sutep–Pui National Park (type locality) which were not found during our research. Nineteen of these species were originally found at or above 1500 m, while twelve of them were found above 1650 m. It is quite reasonable to assume, especially with those species with a woody habit (e.g. *Camellia connata* (Craib) Craib (Theaceae), *Paramignya surasiana* Craib (Rutaceae), and *Euonymus colonoides* Craib (Celastraceae)), that most, if not all, of them are no longer present in the national park. Other species, e.g. *Hoya engleriana* Hoss. (Asclepiadaceae) and *Dendrobium sutapense* Rol. ex Dow. (Orchidaceae), both epiphytic and type locality species, have not been seen since the early days of our work and might also have become extirpated. It is only by visiting other nearby mountains with intact vegetation at elevations above 1650 m that we have been able to get an idea of what the upper summit areas were originally like. These mountains are Doi Intanon (2565 m), Doi Chang (1975 m), and Doi Lahng Gah (2031 m). With the disastrous clearing of the summit area of Doi Pui, along with centuries-old destruction of the summit of Doi Sutep, both places have become more open, drier, and fire-prone. It is most unlikely that the original flora will ever be able (? centuries) to re-establish itself, since a seed source for many of the extirpated plants no longer exists nearby (Photo 12).

Some of the original epiphytic flora has returned to the summit of Doi Pui with *Agapetes hosseana* Diels (Ericaceae), *Aeschynanthus lineatus* Craib (Gesneriaceae), *Cheristylis griffithii* Lindl. and *Trichotosia dasyphylla* (Par. & Rchb.f.) Krzl. (both Orchidaceae); *Crypsinus cruciformis* (Ching) Tag., *Crypsinus oxylobus* (Wall. ex O.K.) Sledge, *Lepisorus heterolepis* (Rosenst.) Ching,

Microsorium membranaceum (D. Don) Ching, and *Polypodium amoenum* (J. Sm. ex Hk. & Grev.) Mett. (all Polypodiaceae). In addition to obvious habitat changes, the soil pH on the summit area of Doi Pui has become reduced to below the original **eg/pine** conditions, thus much of the original ground flora has not reappeared. Some evergreen herbs which have returned, albeit in diminished populations, include: *Hydrocotyle siamica* Craib (Umbelliferae), *Strobilanthes anfractuosa* Cl. ex Hoss., *Strobilanthes consors* Cl. ex Hoss. (Acanthaceae), and *Aspidistra suturepis* K. Lar. (Liliaceae). Deciduous herbs are more common with: *Elsholtzia winitiana* Craib (Labiateae), *Globoea clarkei* Baker (Zingiberaceae), *Hypoxis aurea* Lour. (Amaryllidaceae), *Arisaema erubescens* (Wall.) Schott (Araceae), *Asparagus filicinus* Ham. ex D. Don and *Paris polyphylla* J. E. Sm. (both Liliaceae); *Crepidium acuminatum* (D. Don) Szlach., *Crepidium orbicularum* (W. W. Sm. & Jeff.) Seid., and *Habenaria stenopetala* Lindl. var. *stenopetala* (all Orchidaceae).

Nine plant species, all of which are rare or down to a few individuals, are entirely restricted to summit areas between 1620 and 1685 m above sea level. They are *Poa annua* L. (Gramineae), *Hedychium villosum* Wall. (Zingiberaceae), *Thalictrum foliolosum* DC. (Ranunculaceae), *Aeschynanthus lineatus* Craib (Gesneriaceae), *Strobilanthes consors* Cl. ex Hoss. (Acanthaceae), *Alpinia blepharocalyx* K. Sch. (Zingiberaceae) and *Cleisostoma rolfeanum* (King & Pantl.) Garay, *Cymbidium tracyanum* O'Brien, and *Dendrobium suturepense* Rol. ex Dow. (all Orchidaceae).

Disturbed Areas and Secondary Growth (da/sg)

Due to extensive and uncontrolled exploitation of the vegetation disturbed areas and secondary growth are common at all elevations. Logging, fire, bulldozing, and various other deleterious effects of development, e.g. construction of villages, roads, check dams (Photo 13), and expansion of the agricultural and tourism industries, have added to the degradation of the natural vegetation. Siltation, flash floods, erosion, exposure, fire, soil removal, trash dumping (Photo 18), grazing, etc. are becoming increasingly serious problems.

In recent decades, that is after all the original lowland deciduous forests were logged and almost all upland pines were cut, agricultural activities by Hmong settlers destroyed vast areas of the forest above 1000 m elevation (Photo 14). This resulted in rapid invasion by noxious, herbaceous weeds, many of which are naturalized exotics. This represents the initial stage of plant succession, which, if left undisturbed, would allow woody secondary growth to develop. After a decade, or so, of secondary growth many primary species would begin to appear. However, regeneration to the original degree of biodiversity takes considerably longer—perhaps a century and cannot occur at all, unless a source of seeds of primary forest trees is available nearby (Photo 15).

A total of 288 species of ground herbs survive in disturbed areas or secondary growth, of which exactly half are annuals and half perennials. Annual herbaceous weeds, i.e. tertiary growth, all of which require exposure to sunlight for germination and growth, are numerous. Some of the more common representatives found at all elevations include: *Urena lobata* L. ssp. *lobata* var. *lobata* (Malvaceae) *Triumfetta rhomboidea* Jacq. (Tiliaceae), *Mimosa pudica* L. var. *hispida* Bren. (Leguminosae, Mimosoideae), *Passiflora foetida* L. (Passifloraceae); *Borreria laevis* (Lmk.) Griseb., *Hedyotis corymbosa* (L.) Lmk., and *Mitracarpus villosus* (Sw.) DC. (all Rubiaceae); *Ageratum conyzoides* L., *Bidens pilosa* L. var. *minor* (Bl.) Sherff, *Conyza sumatrensis* (Retz.) Walk., *Crassocephalum crepioides* (Bth.) S. Moore, *Eupatorium odoratum*

L., *Spilanthes paniculata* Wall. ex DC., *Synedrella nodiflora* (L.) Gaertn., and *Vernonia cinerea* (L.) Less. var. *cinerea* (all Compositae); *Physalis angulata* L. (Solanaceae), *Scoparia dulcis* L. (Scrophulariaceae), *Justicia procumbens* L. (Acanthaceae); *Euphorbia heterophylla* L., *E. hirta* L., *Phyllanthus amarus* Schum. & Thonn., and *P. urinaria* L. (all Euphorbiaceae)—all of which are dicots.

Monocot weeds are also diverse and abundant. Some common examples are: *Commelina diffusa* Burm.f. (Commelinaceae); *Cyperus cyperoides* (L.) O.K., *C. kyllingia* Endl., *Fimbristylis dichotoma* (L.) Vahl spp. *dichotoma* (all Cyperaceae); *Arundinella setosa* Trin. var. *setosa*, *Cyrtococcum accrescens* (Trin.) Stapf and *C. oxyphyllum* (Steud.) Stapf, *Digitaria setigera* Roth ex Roem. & Schult. var. *setigera*, *Eragrostis nigra* (Nees ex Steud.) A. Camus, *Paspalum conjugatum* Berg., *Sacciolepis indica* (L.) Chase, *Setaria palmifolia* (Koen.) Stapf var. *palmifolia*, *Setaria parviflora* (Poir.) Kerg., and *Sporobolus diander* (Retz.) P. Beauv. (all Gramineae). Robust perennial Gramineae (grasses) are especially common in upland areas and include: *Apluda mutica* L., *Imperata cylindrica* (L.) P. Beauv. var. *major* (Nees) C.E. Hubb. ex Hubb. & Vaugh., *Pennisetum pedicellatum* Trin., *Phragmites vallatoria* (Pluk. ex L.) Veldk., *Themeda triandra* Forssk., and *Thysanolaena latifolia* (Roxb. ex Horn.) Honda.

Eupatorium adenophorum Spreng. (Compositae) and *Pteridium aquilinum* (L.) Kuhn ssp. *aquilinum* var. *wightianum* (Ag.) Try. (Dennstaedtiaceae) are robust, evergreen, and very persistent weeds in open, fire-damaged, upland areas. *Mimosa pigra* L. (Leguminosae, Mimosoideae), *Solanum verbascifolium* L. (Solanaceae), and *Lantana camara* L. (Verbenaceae), all naturalized woody weeds, often dominate open, disturbed areas.

Secondary growth treelets and trees are both conspicuous and common and number 36 and 81 recorded species respectively. If left undisturbed, they will be replaced by primary forest trees. Some typical examples are: *Albizia chinensis* (Osbeck) Merr. and *Leucaena leucocephala* (Lmk.) De Wit, which is both introduced and cultivated and often becomes locally naturalized (both Leguminosae, Mimosoideae); *Rhus chinensis* Mill. (Anacardiaceae), *Callicarpa arborea* Roxb. var. *arborea* (Verbenaceae); *Glochidion sphaerogynum* (M.-A.) Kurz, *Macaranga denticulata* (Bl.) M.-A., *Mallotus paniculatus* (Lmk.) M.-A., and *M. philippensis* (Lmk.) M.-A. (all Euphorbiaceae); *Ficus fistulosa* Reinw. ex Bl. and *F. hispida* L. f. var. *hispida* (Moraceae), and *Trema orientalis* (L.) Bl. (Ulmaceae).

Cultivated Plants

Before official curtailment in 1958, *Papaver somniferum* L. (Papaveraceae, opium poppy) and *Cannabis sativa* L. (Cannabaceae, cannabis) were the main cash crops for upland farmers throughout northern Thailand. These two profitable and environmentally “friendly” crops have been suppressed by the dictates of western developed nations because they contain legally unacceptable narcotics. Since that time, many cash crop substitutes have been introduced, studied, and implemented. Unfortunately, most of these plants are environmentally “unfriendly”, not only because they are introduced, but also because they require massive amounts of fertilizers and pesticides—which opium and cannabis do not need. Because of uncontrolled use of fertilizers and pesticides in northern Thailand the environment has suffered because of chemical contamination, while many food products are a public health hazard.

Various cultivars of *Brassica oleracea* L. var. *capitata* L. and *B. rapa* L. (cauliflowers, cabbages, and kale; Cruciferae); *Fragaria vesca* L. (strawberry, Rosaceae), *Apium graveolens*

L. cultivars (celery, Umbelliferae), *Petroselinum crispum* (Mill.) A. W. Hill (parsley, Umbelliferae), cultivars of *Cucurbita moschata* (Duch. ex Lmk.) Duch. ex Poir. and *C. pepo* L. (gourds, pumpkins, squashes; Cucurbitaceae), cultivars of *Allium cepa* L. (onions, shallots) and *A. sativum* L. (garlic, both Liliaceae) are all commonly grown, most of which are highly contaminated, both externally and internally, with extremely toxic pesticide residues.

More traditional crops, i.e. those that have been used as both subsistence and cash crops before prohibition of opium and cannabis, include cultivars of *Oryza sativa* L. (rice) and *Zea mays* L. (corn, both Gramineae), *Gossypium barbadense* L. var. *acuminatum* (Roxb.) Mast. (cotton, Malvaceae), *Glycine max* (L.) Merr. (soy bean; Leguminosae, Papilionoideae), *Lycopersicon lycopersicum* (L.) Karst. (tomato, Solanaceae), *Nicotiana tabacum* L. (tobacco, Solanaceae), and *Citrullus lanatus* (Thunb.) Mats. & Nakai (watermelon, Cucurbitaceae).

Various temperate fruit trees have also been planted, none of which have become economically successful, and include *Prunus persica* (L.) Bat. (peach), *Pyrus lindleyi* Rehd. (pear), and *Malus doumeri* (Bois.) Chev. (apple, all Rosaceae); *Diospyros kaki* Thunb. (persimmon, Ebenaceae), *Persea americana* L. (avocado, Lauraceae), and *Coffea canephora* Pierre ex Froh. var. *robusta* (Lind. & De Wildem.) Chev. (robusta coffee, Rubiaceae). *Camellia sinensis* (L.) O. K. var. *assamica* (Mast.) Kita. (*miang*, tea; Theaceae), which is native to northern Thailand and is also the only successful agroforestry crop system in Thailand, has not been developed in Doi Sutep–Pui National Park. *Dimocarpus longan* Lour. ssp. *longan* var. *longan* (longan, Sapindaceae), a native tree, and *Litchi chinensis* Sonn. ssp. *chinensis* (litchi, Sapindaceae), from China, are the most extensive and economically rewarding fruit trees grown in the region.

Settlements and Home Gardens

Due to the massive influx of people living in Doi Sutep–Pui National Park at temples, settlements, stations, and Puping Palace, many cultivated plants in residential areas and home gardens have been introduced. These plants are desired because of their ornamental, medicinal, and food values. Common shade trees include *Samanea saman* (Jacq.) Merr. (rain tree; Leguminosae, Mimosoideae) and *Ficus religiosa* L. (*bo* tree, Moraceae), while *Mangifera indica* L. (mango, Anacardiaceae), *Tamarindus indica* L. (tamarind; Leguminosae, Caesalpinioideae), and *Artocarpus heterophyllus* Lmk. (jackfruit, Moraceae) also provide edible fruits/seeds. *Carica papaya* L. (papaya, Caricaceae), *Citrus grandis* (L.) Osb. (pomelo) and *C. limon* (L.) Burm. f. (lemon, Rutaceae), and *Psidium guajava* L. (guava, Myrtaceae) are small trees which produce edible fruit. *Ceiba pentandra* (L.) Gaertn. (kapok, Bombacaceae) is cultivated for its useful seed fibre, *Hibiscus rosa-sinensis* L. (Malvaceae) is a shrub which has showy flowers, and *Bougainvillea spectabilis* Willd. (Nyctaginaceae) is scandent with colourful inflorescences. *Oroxylum indicum* (L.) Kurz (Bignoniaceae) has flowers and young fruits which are edible, while *Jatropha curcas* L. and *Ricinus communis* L. (castor, both Euphorbiaceae) have medicinal uses.

Many herbs are also grown for a variety of useful purposes. *Capsicum annuum* L. (chili, Solanaceae) has spicy fruits, *Eryngium foetidum* L. (Umbelliferae) grows edible leaves, while the leaves of *Piper betel* L. (betel pepper, Piperaceae) are chewed. *Canna hybrida* Hort. ex Back. (Cannaceae) has large, colourful flowers throughout the year. *Musa paradisiaca* L. (banana, Musaceae) and *Ananas comosus* (L.) Merr. (pineapple, Bromeliaceae) have delicious fruits. *Mentha arvensis* L. (mint) and *Ocimum basilicum* L. (basil, both Labiatae), *Cymbopogon citratus* (DC.) Stapf (lemon grass, Gramineae), and *Zingiber officinale* Rosc. (ginger, Zingiberaceae) are all cultivated for their spice properties.

Ornamental Plants

Since the construction of the first road to Doi Sutep Temple in 1935 and the establishment of the national park in April 1981, many kinds of ornamental and home garden plants have been planted in the national park. Most of these plants are introduced or exotic and, fortunately, have not spread. In addition to *Tectona grandis* and *Pinus kesiya*, which have mostly been planted for commercial purposes under the guise of reforestation or watershed protection, several other trees are frequently seen, especially along roadsides and at stations and tourist areas. Some of these exotics are: *Bauhinia purpurea* L., *Delonix regia* (Boj. ex Hk.) Raf., and *Senna spectabilis* (DC.) Irw. & Barne. (all Leguminosae, Caesalpinioideae), *Lagerstroemia speciosa* (L.) Pers. var. *speciosa* (Lythraceae), and *Jacaranda obtusifolia* H. B. K. ssp. *rhombifolia* (Meij.) Gent. (Bignoniaceae). *Tithonia diversifolia* (Hemsl.) A. Gray (Compositae) and *Euphorbia pulcherrima* Willd. ex Klot. (Euphorbiaceae), both of which have large, colourful inflorescences, have now escaped cultivation and are extirpating native species.

Comparisons Among The Forest Types

Figure 4 compares species richness among the various forest types. With 930 species, **egf** is clearly the most valuable forest type in terms of species richness. **bb/df** and **mx****f** are also highly diverse habitats, with similar numbers of species of 740 and 755 respectively. Habitats characteristic of disturbed or degraded areas generally support the lowest number of plant species with **dof**, **eg/pine** and **da/sg** supporting only 533, 540 and 534 species, respectively.

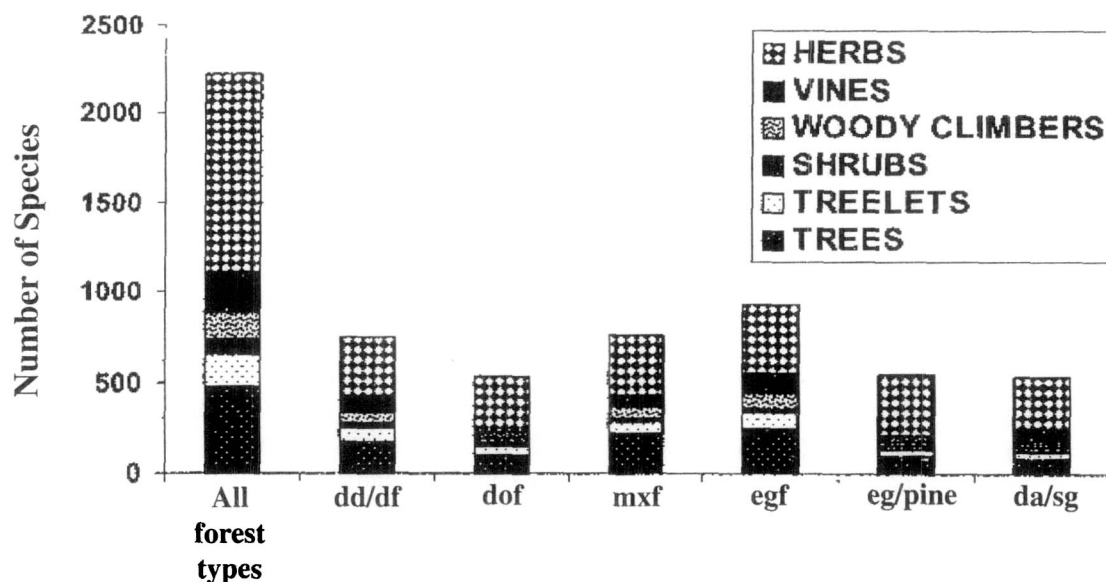


Figure 4. Species richness of the various forest types

Table 8. Relative percentages of plant species of different habits in the floras of each forest type

	All forest types	bb/df	dof	mx	egf	eg/pine	da/sg
Trees	21.6	23.4	18.6	28.7	26.9	18.3	15.2
Treelets	7.8	9.7	9.0	9.4	9.8	6.1	6.7
Shrubs	3.5	4.1	5.4	2.5	2.4	3.9	1.9
Woody Climbers	6.7	7.4	2.6	8.2	8.4	3.5	4.3
Vines	10.3	12.7	6.9	8.2	11.4	6.5	17.6
Herbs	50.1	42.7	57.4	42.9	41.2	61.7	54.3

Table 8 shows that the distribution of species among the various plant habits is remarkably consistent among the various forest types. Only one of the percentage values for each habitat differs more than 10% from the combined values for all forest types. Some differences might be large enough to indicate significant differences in ecosystem structure. For example, the flora of **bb/df** has a relatively low percentage of herb species, while that of **dof** and **eg/pine** has much higher than average percentage of herbs. This is probably due to the more open nature of the latter two forest types, allowing greater niche space for the establishment of a wider range of herb species. In **mx** and **egf**, tree species make up a greater percentage of the flora than average and herbs contribute less. This is probably a reflection of the denser canopies of these two forest types. Disturbed areas and secondary growth are poor in tree species (undoubtedly due to chopping and burning), while vines make up a higher percentage of the flora than for any other vegetation type.

Sorensen's index is :

$$\frac{2C}{A+B}$$

where C = number of species common to both communities, A = total number of species in one community and B = total number of species in the other community. It is a convenient measure of similarity between two plant communities. The index varies from 1 for identical communities to 0 for communities with no species in common.

Table 9 shows no values of Sorensen's index greater than 0.5, indicating that all the forest types identified in this monograph are sufficiently different to justify being classified as separate forest types. The greatest similarity is between **mx**f and **eg**f, which merge with each other at 900–1100 m elevation. These two forest types share 412 species. Other adjacent forest types are also relatively similar. **dof**–**bb/df** and **bb/df**–**mx**f share 255 and 320 species, respectively. Not surprisingly, forest types that are topographically furthest apart exhibit lowest similarity *e.g.* **dof**–**eg**f shared only 77 species.

Table 9. Sorensen's index of overlap between the main forest types

Forest type	dof	mx	eg	eg/pine	da/sg
bb/df	0.40	0.43	0.19	0.17	0.27
dof		0.19	0.10	0.17	0.15
mx			0.49	0.26	0.22
eg				0.34	0.26
eg/pine					0.34

Table 10 provides some indication of the distinctiveness of the various forest types. The first column lists the numbers of species that have been recorded in only a single forest type. It indicates the numbers of species that would become extirpated if each forest type were degraded or destroyed. Evergreen forest clearly supports the most habitat-restricted vascular plant species. In contrast, **mx**f supports the least habitat-restricted species. This is also confirmed by the total Sorensen's index, which indicates that **mx**f has the greatest total similarity with the other forest types. The data also indicate that **dof** is one of the most distinctive forest types, with more than 28% of its species occurring nowhere else on the mountain.

Table 10. Measures of the distinctiveness of the various forest types

Forest type	Number of species restricted to each forest type	Percentage of total species in each forest type	Total Sorensen's index
bb/df	141	19.0%	1.46
dof	150	28.1%	1.01
mx	58	7.7%	1.59
eg	230	24.7%	1.38
eg/pine	120	22.2%	1.28
da/sg	102	19.1%	1.24

Table 11 shows, once again the high conservation value of **egf**, due to the large number of rare species or those threatened with extirpation that grow there. Conversely, it also shows that degraded areas support mostly ubiquitous or common species and are therefore of low conservation value.

Table 11. Numbers of rare species or those in danger of extirpation in each forest type

Forest type	Number of rare or endangered species	Percentage of total species in each forest type
bb/df	153	20.7
dof	121	22.7
mxh	147	19.5
egf	314	33.8
eg/pine	141	26.1
da/sg	83	15.5

Analyses such as this can help national park managers direct limited resources (*e.g.* labour, funds, *etc.*) to conserve the greatest biodiversity. In the case of Doi Sutep–Pui, it is clear that **egf** has the greatest conservation value, both in terms of species richness, rare species, and habitat restricted species and should receive the highest priority for conservation action. Conservation of **egf** alone, however, would ignore the considerable and distinctive botanical richness of **dof**, which is not shared with the other forest types. Although **bb/df** and **mxh** both have relatively high species richness, they share a relatively large proportion of their botanical diversity with **egf** or **dof**. In addition the analysis shows the relatively low conservation value of **da/sg**. Converting such areas back into forest would, therefore, significantly increase the value of Doi Sutep–Pui National Park for the conservation of biodiversity.

PART III

Annotated Enumeration of the Vascular Flora of Doi Sutep–Pui National Park

J. F. Maxwell

Enumeration

The families, as in the CMU Herbarium, are arranged according to the Bentham & Hooker system, which is based on morphology. Both Dicotyledoneae (dicots) and Monocotyledonae (monocots) are listed from what is presumed to be least advanced morphologically to most advanced. This is the system that Craib (1911, 1912) used for his work on the flora of Thailand which is very useful for understanding family relationships. The Pteridophytes are entered in a similar fashion (Tagawa & Iwatsuki, 1979–1989). Genera are listed alphabetically under each family, with species, etc. similarly arranged under the genera. I have not included any taxa in the enumeration that I have not actually seen or collected. Many species not included in this list have been reported for Doi Sutep–Pui National Park. I have not included these taxa, especially old records based on Kerr's collections, since there is much probability that many of them are no longer present in the national park. More modern records are often based on imperfect identifications or have not been properly revised, thus these likewise have been excluded. As more families are completed for the *Flora of Thailand* as well as generic revisions involving Thai plants are accomplished, many of the species, etc. listed here will have to be changed. I have made a determined effort to present the most up to date names, often with synonyms, here. All notes on habit, habitat, elevation, and phenologies are based on our research. Previous information, due to being out of date or unconfirmed, has been avoided. Aside from a few common roadside ornamentals and planted tree monocultures, I have not included cultivated plants here.

Specimens collected during this project have been distributed from CMU, where the initial specimens are kept, to: Rijksherbarium, Leiden, Netherlands (L); Harvard University Herbaria, U. S. A. (A); California Academy of Sciences, California, U. S. A. (CAL); and Herbarium, Royal Forest Department, Bangkok (BKF).

Summary of collecting results in Doi Sutep–Pui National Park (1987–2000)

Division	Subdivision	Class	Families	Species, etc.
Spermatophyta (seed plants)	Angiospermae (flowering plants)	Dicotyledonae	138	1497
		Monocotyledonae	25	568
	Gymnospermae (cone plants)	Cycadatae	5	8
Pteridophyta (fern allies & ferns)			27	174
total			195	2247

The following botanical records are included:

New species:

Dendrobium parvum Seid. (Orchidaceae), Op. Bot. 124 (1995) 30 and fig. 17 (p. 31), based on Maxwell 87–1022 (Observatory, 850 m, 19 Sept. 1987) was reduced to a synonym of *Polystachya concreta* (Jacq.) Garay & Sweet by Seidenfaden (personal communication with Maxwell).

New combinations:

Desmos sootepense (Craib) Maxw. (Annonaceae) (Maxwell, 1989)

Dischidia obcordata (N. E. Br.) Maxw. & Donk. (Asclepiadaceae) (Maxwell, 1991)

New records:

Family: Lardizbalaceae (Maxwell, 1989)

Genera: *Parvatia brunoniana* Wall. ex Dcne. (Lardizbalaceae) (Maxwell, 1989)

Hovenia dulcis Thunb. (Rhamnaceae) (Maxwell, 1994)

Species: *Tetrastigma laoticum* Gagnep. (Vitaceae) (Maxwell, 1989)

Crotalaria prostrata Rottl. ex Willd. (Leguminosae, Papilionoideae) (Maxwell, 1989)

Crotalaria zanzibarica Bth. (Leguminosae, Papilionoideae) (Maxwell, 1991)

Macrotyloma uniflorum (Lmk.) Verdc. var. *uniflorum* (Leguminosae, Papilionoideae) (Maxwell, 1991)

Spatholobus spirei Gagnep. (Leguminosae, Papilionoideae) (Maxwell, 1989)

Agapetes variegata Wall. ex G. Don (Ericaceae) (Maxwell, 1989)

Dischidia obcordata (N. E. Br.) Maxw. & Donk. (Asclepiadaceae) (Maxwell, 1991)

Hoya thomsonii Hk. f. (Asclepiadaceae) (Maxwell, 1999a)

Ipomoea sinensis (Desr.) Choisy (Convolvulaceae) (Maxwell, 1992)

Torenia benthamiana Hance (Scrophulariaceae) (Maxwell, 1989)

Torenia thorelii Bon. (Scrophulariaceae) (Maxwell, 1989)

Orthosiphon marmortis Dunn (Labiatae) (Maxwell, 1991)

Acalypha brachystachya Horn. (Euphorbiaceae) (Maxwell, 1989)

Polygonatum kingianum Coll. & Hemsl. (Liliaceae) (Maxwell, 1998)

Emended descriptions/notes:

Miliusa cuneata Craib (Annonaceae), fruits described (Maxwell, 1991)

Garcinia mckeaniana Craib (Guttiferae), fruits described (Maxwell, 1991)

Acer garrettii Craib (= *A. laurinum* Hassk., Aceraceae), fruits described (Maxwell, 1991)

Gynostemma angustipetala Craib (Cucurbitaceae), note (Maxwell, 1991) (= *Neoalsomitra angustipetala* (Craib) Hutch).

Diospyros coetanea Flet. (Ebenaceae), fruits described (Maxwell, 1992)

Cordia mhaya Kerr (Boraginaceae), general amplification (Maxwell, 1991)

Strobilanthes viscidus Im. (Acanthaceae), fruits and seeds described (Maxwell, 1991)

Premna fulva Craib (Verbenaceae), general amplification (Maxwell, 1992)

Linostoma persimile Craib (Thymelaeaceae), fruits described (Maxwell, 1992)

Polygonatum kingianum Coll. & Hemsl (Liliaceae), fruits described (Maxwell, 1998)

Stemona burkillii Prain (Stemonaceae), general amplification (Maxwell, 1991)

Stemona kerrii Craib (Stemonaceae), general amplification (Maxwell, 1991)

Calamus kerrianus Becc. (Palmae), fruits described (Maxwell, 1992)

Tropophylly

As noted in Part I, K  chler & Sawyer (1967) provide the most accurate account of tropophylly for Thailand. Tropophylly (Greek “tropos” = turn, “phyllon” = leaf) is the situation where some plants drop all their leaves, but at irregular times and remain leafless for varying periods. This phenomenon can occur for all individuals of a species or only certain ones. Table 12 includes the 10 known tropophyllous woody species, mostly trees, found in the national park. Variations in deciduous phenologies are dependent on water availability, temperature, and elevation in the dry season. The best example of tropophylly in Doi Sutep–Pui National Park is *Anneslea fragrans* Wall. (Theaceae), which is found in **dof**, **mx**, **eg**, **eg/pine** and **do/pine** forests from 400 to 1650 m. This species is generally leafless in **dof** during February, especially during extremely dry and hot years. Above 1000 m it is usually evergreen, except when its **eg/pine** or **do/pine** habitats are particularly open, dry, or have been burned. In such instances the trees of this species are briefly deciduous in February or change their leaves while remaining evergreen. Tropophylly is not as common or extreme in the national park as K  chler and Sawyer (1967) indicate. In most instances their use of the term tropophyllous is synonymous with deciduous. *Anneslea fragrans*, because of its habitat and elevation ranges, is also unusual in having distinct variation in its flowering and fruiting phenologies. The flowering and fruiting phenologies at different elevations are not constant or simultaneous. For example, on 16 March 1989 at Pah Ngeub (c. 450 m, **dof**) this species was in full flower, while on the summits of Doi Sutep and Doi Pui (1610 and 1685 m, **eg/pine**) the trees were in fruit. The overall range of flowering is, therefore, from November to March and fruiting from March–May for this species. As far as I can determine, the other tropophyllous species do not have such varying phenologies as *Anneslea fragrans*, mainly because their elevations are not as extreme.

Table 12. Known tropophyllous trees (except *Viburnum inopinatum*, which is a treelet) in Doi Sutep–Pui National Park. These species are generally evergreen above c. 1000 m and are usually deciduous during the dry season at lower elevations.

Species	Elevation (m)	Leafy period
<i>Dipterocarpus obtusifolius</i> Teijsm. ex Miq. var. <i>obtusifolius</i> (Dipterocarpaceae)	400–1100	May–March
<i>Dipterocarpus tuberculatus</i> Roxb. var. <i>tuberculatus</i> (Dipterocarpaceae)	400–900	April–February
<i>Anneslea fragrans</i> Wall. (Theaceae)	400–1650	March–January
<i>Schima wallichii</i> (DC.) Korth. (Theaceae)	600–1625	December–October
<i>Nyssa javanica</i> (Bl.) Wang. (Nyssaceae)	550–1400	April–March
<i>Viburnum inopinatum</i> Craib (Caprifoliaceae)	550–1125	April–February
<i>Alstonia scholaris</i> (L.) R. Br. var. <i>scholaris</i> (Apocynaceae)	350–1150	March–February
<i>Callicarpa arborea</i> Roxb. var. <i>arborea</i> (Verbenaceae)	375–1250	May–March
<i>Bischofia javanica</i> Bl. (Euphorbiaceae)	525–1250	March–February
<i>Mallotus khasianus</i> Hk. f. (Euphorbiaceae)	1000–1400	March–January

Table 13. Annotated enumeration of the vascular plants of Doi Sutep–Pui National Park. A key to abbreviations used in the table is given below.

Habit	t	tree	Month	ja	January
	l	treelet		fb	February
	s	shrub		mr	March
	h	herb		ap	April
	v	vine		my	May
	wc	woody climber		jn	June
	sc	scandent		jl	July
	cr	creeping		ag	August
Phenology	a	annual		sp	September
	pe	perennial evergreen		oc	October
	pd	perennial deciduous		nv	November
	ped	perennial evergreen–deciduous		dc	December
Life mode	aqu	aquatic			
	cul	cultivated			
	epl	epiphyte			
	epl	epilithic			
	gro	ground			
	hemipar	hemiparasite			
	int	introduced, not native			
	nat	naturalized, not native			
	par	parasite			
	rhe	rheophyte			
	str	strangler			
Abundance	0	probably extirpated			
	1	down to a few individuals, in danger of extirpation			
	2	rare			
	3	medium abundance			
	4	common, but not dominant			
	5	abundant			
Habitat	bb/df	degraded teak & bamboo + deciduous forest			
	cult	cultivated areas			
	da	disturbed areas, overgrown places			
	dof	deciduous dipterocarp-oak forest			
	do/pine	pine + dipterocarp forest			
	egf	primary evergreen forest			
	eg/bb	evergreen forest with bamboo			
	eg/pine	evergreen forest with pine			
	mx	mixed evergreen + deciduous, seasonal forest			
	pon	ponds			
	sg	secondary growth			
	wa	wet areas			

Database

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Angiospermae, Dicotyledoneae										
Ranunculaceae										
<i>Clematis buchananiana</i> DC.	v	pe	3	gro	egf egf/pine	1000–1685	dc–fb	ja–mr	ja–dc	topotype, stream valleys
<i>Clematis eichleri</i> (M. Tam.) M. Tam.	v	pd	1	gro	bb/df mx f egf da	600–1075	nv–dc	fb	my–fb	topotype of <i>Clematis siamensis</i> Drum.
<i>Clematis sikkimensis</i> (Hk. f. & Th.) Drum. ex Burk.	v	pe	3	gro	egf mx f egf/pine sg	700–1685	dc–fb	ja–mr	ja–dc	& Craib; basionym = <i>Clematis acuminata</i> DC. var. <i>sikkimensis</i> Hk. f. & Th.
<i>Clematis smilacifolia</i> Wall.	v	pe	3	gro the	streams in dof & mx f	400–850	nv–ja	ja–mr	ja–dc	syns. = <i>Clematis subpeltata</i> Wall., <i>Clematis smilacifolia</i> Wall. var. <i>angustifolia</i> M. Tam.
<i>Clematis subumbellata</i> Kurz	v	pe	3	gro	egf	1050–1050	nv–ja	mr–ap	ja–dc	
<i>Delphinium siamense</i> (Craib) Munz	h	pd	2	ep l gro	cliffs egf egf/pine	1450–1475	sp–nv	dc–ja	my–dc	syn. = <i>Delphinium altissimum</i> Wall. var. <i>siamense</i> (Craib) T. Shim.
<i>Naravelia siamensis</i> Craib	v	a	3	gro	bb/df	375–875	nv–dc	sp–oc	ja–oc	topotype
<i>Thalictrum foliosum</i> DC.	v	pe	1	gro	egf/pine	1685–1685	jl–ag	sp–oc	ja–dc	
Dilleniaceae										
<i>Dillenia aurea</i> Sm. var. <i>aurea</i>	t	pd	3	gro	dof mx f egf da	575–1375	mr–ap	jn–jl	mr–ja	
<i>Dillenia parviflora</i> Griff. var. <i>kerrii</i> (Craib) Hoogl.	t	pd	4	gro	dof	375–1000	mr	ap	jn–ap	topotype of paratype
<i>Dillenia pentagyna</i> Roxb.	t	pd	3	gro	dof bb/df	425–925	fb	ap–my	jn–fb	
Magnoliaceae										
<i>Magnolia liliifera</i> (L.) Baill. var. <i>obovata</i> (Korth.) Gov.	t	pe	3	gro	mx f egf	600–1500	mr–my	ag–oc	ja–dc	syn. = <i>Talauma hodgsonii</i> Hk. f. & Thoms.
<i>Manglietia garrettii</i> Craib	t	pde	3	gro	egf	1050–1600	mr–ap	sp–nv	mr–ja	changing leaves in January and February (May)
<i>Michelia baillonii</i> Pierre	t	pd	3	gro	mx f egf	650–1100	jl–oc	my–ag	jn–ap	syn. = <i>Paramichelia baillonii</i> (Pierre) Hu
<i>Michelia champaca</i> L. var. <i>champaca</i>	t	ped	3	gro	mx f egf	600–1200	my–jn	(jn) ag–sp	my–fb	
<i>Michelia floribunda</i> Fin. & Gagnep.	t	pe	2	gro	egf	1200–1685	ja–mr	ag–oc	ja–dc	topotype of <i>Michelia kerrii</i> Craib
Schisandraceae										
<i>Kadsura heteroclita</i> (Roxb.) Craib	wc	pe	3	gro	streams in egf	750–1450	ag–sp	dc–ja	ja–dc	
Annonaceae										
<i>Annonianthus dulcis</i> (Dun.) Sincl.	wc	pd	4	gro	dof bb/df mx f	350–600	ap–my	jl–oc	ap–fb	
<i>Artabotrys</i> sp.	wc	pe	2	gro	egf	1050–1400	ja	oc–nv	ja–dc	
<i>Desmos dumosus</i> (Roxb.) Saff. var. <i>glabrior</i> Craib	wc	pe	3	gro	mx f	400–900	ap–jl	sp–dc	ja–dc	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Desmos sootense</i> (Craib) Maxw.	l	pe	2	gro	egf	1000–1450	jn	oc–dc	ja–dc	topotype; Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989) 177: basionym = <i>Dasymaschalon sootense</i> Craib
<i>Ellipolopsis cherreensis</i> (Pierre ex Fin. & Gagnep.) R.E. Fr.	s	pd	4	gro	dof	400–600	jn–sp	ag–oc	jn–mr	syn. = <i>Ellipia cherreensis</i> Pierre ex Fin. & Gagnep.
<i>Fissistigma oblongum</i> (Craib) Merr.	wc	pe	3	gro	mxg egf da	625–1500	fb–ag	my–jn	ja–dc	topotype, basionym = <i>Melodorum oblongum</i> Craib
<i>Fissistigma</i> sp.	wc	pe	3	gro	mxg	450–900	mr–ap	jl–sp	ja–dc	topotype of <i>Melodorum affine</i> Craib
<i>Goniothalamus griffithii</i> Hk. f. & Thoms.	l	pe	3	gro	streams in bb/df egf	500–1050	my–jl	sp–oc	ja–dc	
<i>Miliusa cuneata</i> Craib	t (l, s)	pd	2	gro	egf	1300–1400	my	oc	my–dc	topotype, fruits described: Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 71.
<i>Miliusa thorelli</i> Fin. & Gagnep.	s l	pe	2	gro	egf	1000–1100	my–jn	sp–oc	ja–dc	
<i>Miliusa velutina</i> (Dun.) Hk. f. & Thoms.	t	pd	3	gro	bb/df egf	350–1100	ap	my–jl	my–mr	
<i>Mitrephora vandaeflora</i> Kurz	t	pd	3	gro	egf mxg	625–1100	fb–mr	ap–my	ap–fb	syn. = <i>Mitrephora maingayi</i> Hk. f. & Thoms.
<i>Polyalthia debilis</i> (Pierre) Fin. & Gagnep.	wc	pe	3	gro	mxg bb/df	500–700	jn		ja–dc	topotype of <i>Desmos dubius</i> (Craib) Craib
<i>Polyalthia litoralis</i> (Bl.) Boerl.	t	pd	1	gro	bb/df	325–350	mr–ap	jl–ag	mr–ja	
<i>Polyalthia simiarum</i> (Ham. ex Hk. f. & Th.) Bth. ex Hk. f. & Th.	t	pd	2	gro	egf	1000–1200	jn	my–jn (sp)	mr–dc	
<i>Polyalthia</i> sp.	t	pe	1	gro	egf	1000–1000	?	jn	ja–dc	
<i>Uvaria rufa</i> Bl.	wc	pd	3	gro	bb/df	400–500	jn	ag	my–fb	
Menispermaceae										
<i>Cissampelos hispida</i> Forman	v	pe	2	gro	da in egf eg/pine da	800–1300	ag–oc	oc	ja–dc	
<i>Cissampelos pareira</i> L. var. <i>hirsuta</i> (B.–H. ex DC.) Forman	v	pe	3	gro	bb/df	350–600	jn–oc	jl–nv	ja–dc	
<i>Cocculus laurifolius</i> DC.	l, s	pe	1	gro	egf	1000–1125	fb–mr	dc–ja	ja–dc	
<i>Cyclea aijehensis</i> Forman	v	pe	4	gro	bb/df egf	350–1200	ap–oc	jl–dc	ja–dc	female flowers described from Doi Suteb material
<i>Cyclea barbata</i> Miers	v	pe	3	gro	bb/df mxg	350–1000	ap–sp	ag–nv	ja–dc	topotype of <i>Cyclea ciliata</i> Craib
<i>Cyclea polypetala</i> Dunn	v	pe	2	gro	egf da	1400–1550	nv–dc	mr–jl	ja–dc	
<i>Cyclea varians</i> Craib	v	pe	3	gro	bb/df	350–1000	dc–jn	dc–sp	ja–dc	
<i>Diplocisia glaucescens</i> (Bl.) Diels	wc	pe	3	gro	egf	1000–1350	ap–my	jl	ja–dc	
<i>Pachygone dasycarpa</i> Kurz	wc	pd	3	gro	mxg egf	600–1225	nv–dc	mr–ap	jn–ap	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Parabeta sagittata</i> Miers ex Hk. f. & Th.	v	pe	3	gro	bb/df egf	725–1450	ap-my	jl-ag (dc)	ja-dc	
<i>Pericampylus glaucus</i> (Lmk.) Merr.	v	pe	3	gro	da in bb/df & egf	825–1500	fb-mr	jl-ja	ja-dc	
<i>Stephania brevipes</i> Craib	v (s)	pe	2	gro	egf	1050–1050	jl-ag	ag-sp	ja-dc	topotype
<i>Stephania elegans</i> Hk. f. & Thoms.	v	pd	2	gro	egf	1350–1450	jl-ag	nv-dc	my-dc	
<i>Stephania glabra</i> (Roxb.) Miers	v	pd	3	gro	bb/df da in egf	450–1100	ap-ag	my-dc	my-dc	
<i>Stephania japonica</i> (Thunb.) Miers var. <i>discolor</i> (Bl.) Forman	v	pe	3	gro	egf da sg	650–1350	jn-oc	(ag) oc-dc	ja-dc	
<i>Stephania oblata</i> Craib	v	pd	3	gro	bb/df	350–500	jn-ji	ag-sp	my-dc	topotype, also topotype of <i>Stephania kerrii</i> Craib
<i>Tiliacora triandra</i> (Colebr.) Diels	wc (v)	pd	3	gro	bb/df da	350–400	ja-dc	ja-dc	my-dc	
<i>Tinomisium petiolare</i> Hk. f. & Thoms.	wc	pe	3	gro	egf	1000–1200	my-jn	sp-oc	ja-dc	
<i>Tinospora crispa</i> (L.) Hk. f. & Thoms.	v	pd	3	gro	bb/df mx f egf	450–1075	fb-mr	ap-jn	jn-ja	
<i>Tinospora sinensis</i> (Lour.) Merr.	v	pd	3	gro	bb/df	400–600	ja-fb	ap-my	jn-ja	
Berberidaceae										
<i>Mahonia nepalensis</i> DC.	l	pe	2	gro	eg/pine	1400–1685	ja-mr	my-jn	ja-dc	topotype of <i>Mahonia siamensis</i> Tak.
Lardizabalaceae										
<i>Parvatia brunoniana</i> Wall. ex Dene.	wc	pe	2	gro	egf mx f	660–1635	sp-ja	ag-nv	ja-dc	new family record for Thailand: Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989) 177.
Papaveriaceae										
<i>Papaver somniferum</i> L.	h	a	1	cul int	egf	1400–1500	dc-fb	ja-mr	oc-fb	cultivated, probably completely eradicated
Cruciferae										
<i>Brassica juncea</i> (L.) Czern.	h	a	3	cul nat	egf in dof	350–600	fb-mr	mr-ap	my-dc	
<i>Rorippa dubia</i> (Pers.) Hara	h	a	3	gro	mx f dof	450–1350	jn-nv	jl-dc	my-dc	syn. = <i>Rorippa heterophylla</i> (Bl.) Will., meadows & streams
Capparaceae										
<i>Capparis disticha</i> Kurz	wc	pd	3	gro	bb/df mx f	700–700	ap	oc-nv	mr-dc	
<i>Capparis kerrii</i> Craib	l	pe	3	gro	mx f egf	550–1150	mr-ap	jl-ag	ja-dc	topotype
<i>Capparis pyrifolia</i> Lmk.	l (s)	pd	3	gro	bb/df	350–1040	mr	jn (ag)	mr-ja	
<i>Capparis sepiaria</i> L.	wc	pd	3	gro	bb/df sg	350–500	mr-my	jl-ag	mr-ja	
<i>Cleome radiosperma</i> DC.	h	a	3	gro int nat wee	da cult	350–600	my-sp	jl-oc	ap-nv	
<i>Cleome viscosa</i> L.	h	a	3	gro int nat wee	da cult	350–600	my-sp	jl-nv	ap-nv	
<i>Cratava magna</i> (Lour.) DC.	t	pd	3	gro	streams in sg	500–700	mr-ap	jl-ag	ap-ja	streams in deciduous secondary growth
<i>Cratava religiosa</i> Forst. f.	l	pd	3	gro	streams in sg	450–700	mr	jl-ag	mr-ja	streams in deciduous secondary growth

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Violaceae										
<i>Scyphellandra pierrei</i> Boiss.	s (l)	pd	3	gro	bb/df	350-500	ag-oc	sp-nv	my-fb	
<i>Viola pilosa</i> Bl.	h	pe	3	gro	egf eg/pine	1400-1675	nv-mr	dc-ja	ja-dc	
Pittosporaceae										
<i>Pittosporum nepaulense</i> (DC.) Rehd. & Wils.	t	pe	3	gro	egf	852-1400	jn-jl	sp-ja	ja-dc	
Polygalaceae										
<i>Polygala chinensis</i> L.	h	pd	3	gro	eg/pine da	1150-1650	my-ag	jl-nv	my-dc	
<i>Polygala longifolia</i> Poir.	h	a	3	gro	dof	350-950	jl-nv	sp-dc	my-ja	
<i>Polygala persicariaefolia</i> DC.	h	a	3	gro	egf	1300-1650	sp-nv	oc-dc	jn-ja	
				wee						
<i>Polygala trichophylla</i> Chod.	v	pe	3	gro	egf	900-1400	sp-oc	oc-nv	ja-dc	
<i>Polygala triflora</i> L.	h	a	2	gro	da sg	350-450	ag-sp	sp-oc	jn-dc	
<i>Polygala umbonata</i> Craib	h	a	3	gro	dof bb/df	350-600	ag-dc	oc-ja	jn-fb	
<i>Salomonina cantoniensis</i> Lour. var. <i>cantoniensis</i>	h	a	3	gro	dof bb/df	450-800	ag-nv	oc-dc	jn-ja	
<i>Salomonina longiciliata</i> Kurz	h	a	3	gro	dof	350-550	ag-nv	sp-dc	jn-dc	
<i>Securidaca inappendiculata</i> Hassk.	wc	pd	2	gro	mx f	550-650	oc	fb	my-dc	
<i>Xanthophyllum flavescens</i> Roxb.	t	pe	3	gro	egf mx f	700-1400	mr-ap	my-sp	ja-dc	
<i>Xanthophyllum virens</i> Roxb.	t	pe	3	gro	mx f	650-850	mr-ap	jl-ag	ja-dc	
Caryophyllaceae										
<i>Drymaria diandra</i> Bl.	h	pe	4	gro	mx f eg/pine da	400-1685	jn-ag	ag-ja	ja-dc	often along streams
<i>Myosoton aquaticum</i> (L.) Moen.	h	pe	3	gro	mx f egf eg/pine	650-1400	oc-fb	fb-ap	ja-dc	probably escaped cultivation
<i>Stellaria monosperma</i> B.-H. ex D. Don	h	a	2	gro	da sg in eg/pine	1350-1450	nv-dc	dc-ja	jn-ja	
var. <i>paniculata</i> (Edgew.) Maj.										
Portulacaceae										
<i>Portulaca oleracea</i> L.	h	pe	3	gro	da cult	350-700	ap-dc	my-ja	ja-dc	
Guttiferae										
<i>Calophyllum polyanthum</i> Wall. ex Pl. & Tr.	t	pe	2	gro	egf streams	1250-1400	my-jn	(fb) my-jn	ja-dc	
<i>Cratoxylum cochinchinense</i> (Lour.) Bl.	t	pd	3	gro	dof	500-700	dc-ja	(ja) ap-my	my-fb	
<i>Cratoxylum formosum</i> (Jack) Dyer ssp. <i>pruniflorum</i> (Kurz) Gog.	t (l)	pd	4	gro	dof bb/df da sg	350-1350	mr-my	jn-ag	mr-ja	sometimes leafless until May
<i>Cratoxylum maingayi</i> Dyer	t	pd	2	gro	dof bb/df	350-650	my-jn	sp-nv	fb-dc	
<i>Garcinia cowa</i> Roxb.	t	pd	3	gro	dof mx f mx/pine	400-1500	oc-ap	(sp) fb-my	my-mr	often leafless fb-mr
<i>Garcinia mckeaniana</i> Craib	t	pe	2	gro	egf	1050-1400	oc-ja	ap-jn	ja-dc	topotype
<i>Garcinia merguensis</i> Wight	t	pe	3	gro	mx f streams egf	600-1050	ap-my	mr-my	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Garcinia speciosa</i> Wall.	t	pe	4	gro	mx	425-950	dc-mr	sp-oc	ja-dc	
<i>Garcinia thorelii</i> Pierre	t	pe	2	gro	egf	1000-1000	sp-oc	ag-sp	ja-dc	
<i>Garcinia xanthochymus</i> Hk. f. ex T. And.	t	pe	3	gro	mx	650-1100	mr-ap	ag-ja	ja-dc	
<i>Hypericum japonicum</i> Thunb. ex Murr.	h	a	2	gro	wet places, streams in mx	350-750	ap-ag	jn-sp	mr-sp	
<i>Mammea siamensis</i> (Miq.) T. And.	t	pe	3	gro	mx	400-600	mr-ap	jn-oc	ja-dc	
<i>Mesua ferrea</i> L.	t	pe	2	gro	mx	725-725	my-jn	ag-sp	ja-dc	often planted
Flacourtiaceae										
<i>Casearia flexuosa</i> Craib	l	pe	3	gro	bb/df mx	525-1000	fb-mr	ag-fb	ja-dc	topotype
<i>Casearia graveolens</i> Dalz.	t	pd	3	gro	bb/df	500-500	ap	jn-jl	mr-ja	
<i>Casearia griwifolia</i> Vent. var. <i>gelonioides</i> (Bl.) Sleum.	t	ped	3	gro	mx	625-1400	mr-ap	jn-jl	ja-dc	sometimes leafless mr-ap in mx
<i>Casearia griwifolia</i> Vent. var. <i>griwifolia</i>	t	pd	3	gro	sg	350-500	ap	jn-jl	ap-fb	topotype of <i>Casearia kerrii</i> Craib, deciduous secondary growth
<i>Flacourtia indica</i> (Burm. f.) Merr.	t (l.s)	pd	3	gro	bb/df mx	400-1550	fb-my	jl-oc	mr-ja	topotype of <i>Flacourtia lenis</i> Craib
<i>Homalium ceylanicum</i> (Gard.) Bth.	t	pd	2	gro	bb/df mx	425-900	mr-ap	?	ap-fb	
<i>Xylosma brachystachys</i> Craib	l	pe	3	gro	mx	625-1000	ap-my	ag-oc	ja-dc	topotype
Theaceae										
<i>Adinandra integririma</i> T. And. ex Miq.	t	pe	3	gro	mx	825-1250	mr-ap	jl-sp	ja-dc	
<i>Annestea fragrans</i> Wall.	t	ped	4	gro	dof mx	400-1650	nv-mr	mr-my	mr-ja	phenologies vary according to elevation, tropophyllous; see p.61
<i>Camellia oleifera</i> Abel var. <i>confusa</i> (Craib) Sealy	l	pe	3	gro	egf	900-1400	nv-dc	jn-nv	ja-dc	topotype
<i>Camellia sinensis</i> (L.) O.K. var. <i>assamica</i> (Mast.) Kita.	l	pe	2	gro cul	egf	1000-1100	nv-fb	my-nv	ja-dc	
<i>Eurya acuminata</i> DC. var. <i>wallichiana</i> Dyer	t (l)	pe	3	gro	egf	1000-1500	ag-oc	ja-my	ja-dc	
<i>Eurya nitida</i> Korth. var. <i>siamensis</i> (Craib) H. Keng	t l	pe	3	gro	egf	1300-1650	dc-ja	(fb) jn-ag	ja-dc	topotype
<i>Gordonia dalgleishiana</i> Craib	t	pe	3	gro	egf	1150-1685	oc-fb	sp-oc (dc)	ja-dc	topotype
<i>Pyrenaria camelliflora</i> Kurz	t	pe	3	gro	eg	1200-1300	ap-my	sp-oc	ja-dc	
<i>Pyrenaria garrettiana</i> Craib	t	pe	3	gro	egf	1400-1650	mr-ap	ag-nv	ja-dc	
<i>Schinus wallichii</i> (DC.) Korth.	t	ped	4	gro	bb/df mx	600-1625	sp-mr	nv-mr	dc-oc	tropophyllous, evergreen above 1000 m

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Terstroemia gymnanthera</i> (Wight & Arn.) Bedd.	t	pe	3	gro	mx f egf eg/pine	700–1650	my-jn	sp-nv	ja-dc	
Actinidiaceae										
<i>Actinidia rubricaulis</i> Dunn	wc	pe	2	gro	egf eg/pine da	1275–1600	mr	?	ja-dc	mostly in upper water catchment valleys
Saurauaceae										
<i>Houttuynia cordata</i> Thunb.	h	pe	1	gro cul	mx f streams	700–1350	my-jn	jl-sp	ja-dc	probably escaped cultivation at 700 m, cultivated at 1350
<i>Saurauia nepaulensis</i> DC.	t	pe	3	gro	streams in mx f egf eg/pine da	700–1650	jl-sp	oc-dc	ja-dc	streams
<i>Saurauia roxburghii</i> Wall.	t (l)	pe	3	gro	mx f streams egf	500–1500	ap-jn	jl-oc	ja-dc	
Dipterocarpaceae										
<i>Dipterocarpus costatus</i> Gaertn. f.	t	pe	3	gro	mx f egf	500–1150	dc-fb	my-ag	ja-dc	
<i>Dipterocarpus obtusifolius</i> Teijsm. ex Miq. var. <i>obtusifolius</i>	t	pd	5	gro	dof mx f do/pine	400–1100	sp-ja	ja-ap	my-mr	trophophyllous
<i>Dipterocarpus tuberculatus</i> Roxb. var. <i>tomentosus</i> Kerr	t	pd	4	gro	dof	450–450	dc-ja	ap-my	ap-fb	topotype, probably not distinct
<i>Dipterocarpus tuberculatus</i> Roxb. var. <i>tuberculatus</i>	t	pd	5	gro	dof	400–900	mr-ap	ap-my	ap-fb	trophophyllous
<i>Dipterocarpus turbinatus</i> Gaertn. f.	t	pe	3	gro	mx f	500–900	mr-ap	ap-my	ja-dc	
<i>Hopea odorata</i> Roxb. var. <i>odorata</i>	t	pe	3	gro	mx f egf	350–900	ag-oc	ja-fb	ja-dc	often along streams
<i>Shorea farinosa</i> Fischer	t	pd	3	gro	dof mx f	425–1100	fb-mr	mr-ap	ap-fb	
<i>Shorea obtusa</i> Wall. ex Bl.	t	pd	5	gro	dof mx f	700–900	fb-my	ap-jn	ap-fb	
<i>Shorea roxburghii</i> G. Don	t	pd	4	gro	bb/df dof	350–900	fb-mr	mr-ap	(mr)	
<i>Shorea siamensis</i> Miq. var. <i>siamensis</i>	t	pd	5	gro	dof	400–950	mr	ap-my	ap-fb	
Malvaceae										
<i>Abelmoschus moschatus</i> Medic. ssp. <i>moschatus</i> var. <i>moschatus</i>	h	apd	3	gro	dof bb/df da	350–1350	jn-nv	sp-dc	my-ja	open places
<i>Hibiscus furcatus</i> Roxb.	h	a	2	gro	da in egf	1000–1000	mr-ap	my	my-dc	
<i>Hibiscus glanduliferus</i> Craib	l	pd	3	gro	dof bb/df	350–1000	jn-oc	ja-my	ap-fb	topotype
<i>Hibiscus mutabilis</i> L.	l	pe	1	gro	egf sg	1275–1275	dc-ja	ja-fb	ja-dc	
<i>Hibiscus surattensis</i> L.	h	a	3	gro	dof sg	450–600	oc-nv	dc-ja	my-ja	
<i>Kydia calycina</i> Roxb.	t	pd	3	gro	dof bb/df	350–1000	nv-dc	dc-ap	my-mr	
<i>Pavonia repanda</i> (Roxb. ex J. E. Sm.) Spreng.	s (h)	pd	3	gro	dof bb/df	350–600	nv-ja	dc-fb	my-fb	
<i>Sida mysorensis</i> Wight & Arn.	h	pd	3	gro	bb/df sg da	400–1350	dc-fb	ja-mr	jn-mr	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Sida rhombifolia</i> L. ssp. <i>rhombifolia</i>	h	pd	5	gro wee	eg/pine bb/df sg da	400-1650	ag-oc	sp-dc	ja-dc	usually a weed, also in sg
<i>Thespesia lampas</i> (Cav.) Dalz. & Gibs. var. <i>lampas</i>	l (h)	pd	3	gro	dof bb/df	400-1100	sp-nv	nv-dc	my-fb	
<i>Urena lobata</i> L. ssp. <i>lobata</i> var. <i>lobata</i>	h	pe	5	gro wee	dof bb/df mx f eg/pine da sg	400-1685	sp-ja	oc-mr	ja-dc	usually a weed, also in sg
Bombacaceae										
<i>Bombax anceps</i> Pierre var. <i>anceps</i>	t	pd	4	gro	dof bb/df mx f (streams)	350-950	nv-ja	mr-ap	my-nv	syn. = <i>Bombax kerrii</i> Craib
<i>Bombax ceiba</i> L.	t	pd	3	gro	dof	350-950	ja-fb	mr-ap	my-nv	syn. = <i>Bombax malabaricum</i> DC.
Sterculiaceae										
<i>Byttneria aspera</i> Colebr.	wc	pe	3	gro	egf	1025-1400	jn-jl	dc-ja	ja-dc	topotype of <i>Byttneria siamensis</i> Craib, syn. = <i>Byttneria integrifolia</i> Lace
<i>Byttneria pilosa</i> Roxb.	wc (v)	pd	3	gro	bb/df	550-750	oc-nv	ja-fb	ap-fb	
<i>Eriolaena candollei</i> Wall.	t	pd	3	gro	eg/pine	1100-1300	my-jn	ap-my	my-fb	
<i>Fimiana colorata</i> (Roxb.) R. Br.	t	pd	1	gro	eg/pine	1400-1500	fb-mr	ap-my	my-dc	
<i>Helicteres angustifolia</i> L.	l	pd	3	gro	dof	375-600	jl-oc	sp-nv	ap-fb	syn. = <i>Helicteres obtusa</i> Wall. ex Kurz
<i>Helicteres elongata</i> Wall. ex Boj.	s, l	pd	4	gro	bb/df	350-1400	my-oc	sp-ja	my-fb	syn. = <i>Helicteres plebeja</i> Kurz
<i>Helicteres hirsuta</i> Lour.	s	pd	4	gro	dof bb/df	400-900	ap-jn	jl-sp	ap-fb	
<i>Helicteres isora</i> L.	l (s)	pd	3	gro	dof bb/df	475-800	jl-ag	oc-ja	ap-ja	
<i>Helicteres lanceolata</i> A. DC. var. <i>lanceolata</i>	l (h)	pd	3	gro	dof	450-650	my-jn	sp-nv	my-ja	
<i>Melochia corchorifolia</i> L.	h	a	3	gro wee	dof (marsh)	500-700	sp-nv	oc-ja	my-dc	
<i>Pterocymbium tinctorium</i> (Blanco) Merr.	t	pd	2	gro	mx f	525-700	mr-ap	ap-my	ap-ja	
<i>Pterospermum acerifolium</i> Willd.	t	pe	2	gro	egf eg/pine sg	1200-1600	my-jn	(fb) ag-sp	ja-dc	
<i>Pterospermum grandiflorum</i> Craib	t	pe	3	gro	mx f egf eg/pine	725-1650	ap-my	nv-dc	ja-dc	topotype
<i>Pterospermum semisagittatum</i> Ham. ex Roxb.	l	pd	2	gro	bb/df	450-600	mr-ap	jl-oc	my-mr	
<i>Reevesia pubescens</i> Mast. var. <i>siamensis</i> (Craib) Anth.	t	pe	2	gro	eg/pine	970-1400	ap	mr (dc)	ja-dc	basionym = <i>Reevesia siamensis</i> Craib
<i>Sterculia balanghas</i> L.	t	pd	2	gro	bb/df mx f egf	450-1550	mr-ap	(jn) oc-nv	(mr)	syn. = <i>Sterculia angustifolia</i> Roxb.
<i>Sterculia lanceolata</i> Cav. var. <i>lanceolata</i>	l	pe	3	gro	mx f egf	625-1100	fb-ap	my-sp	ja-ja	
<i>Sterculia lanceolata</i> Cav. var. <i>principis</i> (Gagnep.) Pheng.	t	pe	2	gro	egf	900-1100	sp-nv	?	ja-dc	
<i>Sterculia pesa</i> Pierre	t	pd	3	gro	bb/df	350-550	nv-dc	fb-ap	my-mr	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Sterculia urena</i> Roxb. var. <i>thorelii</i> (Pierre) Pheng.	t	pd	2	gro	dof bb/df	450–700	oc–nv	ja–fb	ap–oc	
<i>Sterculia villosa</i> Roxb.	t	pd	2	gro	dof mxf egf eg/pine	600–1575	ja–fb	mr–ap	ap–dc	syn. = <i>Sterculia ornata</i> Wall. ex Kurz
Tiliaceae										
<i>Berrya mollis</i> Wall. ex Kurz	t	pd	2	gro	dof bb/df	425–500	jn–jl	sp–oc	ap–nv	
<i>Colona flagrocarpa</i> (Cl.) Craib	t	pd	4	gro	bb/df da sg	375–1350	jl–ag	sp–oc	ap–ja	topotype of <i>Colona flagrocarpa</i> (Cl.) Craib var. <i>siamica</i> (Craib) Craib
<i>Colona floribunda</i> (Kurz) Craib	t	pd	4	gro	bb/df mxf da sg	650–1350	sp–nv	nv–my	ap–fb	
<i>Corchorus aestuans</i> L.	h	a	3	gro wee	bb/df(stream) sg	500–800	ag–nv	sp–dc	my–dc	often a weed
<i>Grewia abutilifolia</i> Vent. ex Juss.	s	pd	3	gro	dof egf (cliffs)	350–1475	mr–sp	sp–dc	my–fb	
<i>Grewia acuminata</i> Juss.	wc	pe	3	gro	egf	1125–1500	my–jn	sp–nv	ja–dc	Phengklai [Flora of Thailand 6:1 (1993) 26] includes this species as a synonym of <i>Grewia laevigata</i> Vahl
<i>Grewia eriocarpa</i> Juss.	t (l)	pd	3	gro	dof bb/df	350–1020	ap–jn	jn–sp	my–fb	
<i>Grewia hirsuta</i> Vahl	l (wc,s)	pd	3	gro	bb/df	375–550	jl–sp	ja–fb	my–ja	
<i>Grewia laei</i> Drum. & Craib	l	pd	3	gro	dof (streams) bb/df mxf	450–1400	my–sp	ag–ja	my–ja	
<i>Grewia laevigata</i> Vahl	t	pd	3	gro	bb/df	350–1000	sp–oc	nv–ja	my–ja	vide <i>Grewia acuminata</i> Juss.
<i>Grewia polygama</i> Roxb.	l (s)	pd	3	gro	dof bb/df	450–600	jn–ag	oc–dc	my–ja	
<i>Microcos paniculata</i> L.	t (l)	pd	3	gro	mx	350–800	ap–my	jl–nv	ap–mr	
<i>Muntingia calabura</i> L.	l	pe	3	gro int nat cul	bb/df	350–1000	dc–jl	ag–nv (mr)	ja–dc	thickets, sg
<i>Schoutenia glomerata</i> King ssp. <i>peregrina</i> (Craib) Roehm. & Hart.	t	pe	1	gro cul	bb/df sg	350–350	jl–oc	?	ja–dc	
<i>Triumfetta pilosa</i> Roth	h	a	3	gro wee	bb/df mxf egf eg/pine	400–1525	ag–dc	nv–mr	my–dc	
<i>Triumfetta rhomboidea</i> Jacq.	h	a	3	gro wee	sg eg/pine	400–1650	oc–dc	nv–fb	my–fb	syn. = <i>Triumfetta barrtramia</i> L.; <i>Triumfetta barrtramia</i> L. is treated as a nom. illeg. in Fl. Java I, 395
Elaeocarpaceae										
<i>Elaeocarpus bracteatus</i> Watt ex Cl.	t	pe	2	gro	mx	800–950	my	ja	ja–dc	
<i>Elaeocarpus floribundus</i> Bl.	t	pe	3	gro	egf eg/pine	1250–1550	my	oc–nv	ja–dc	
<i>Elaeocarpus lanceifolius</i> Roxb.	t	pe	3	gro	egf	900–1550	jn–jl	(mr) oc–nv	ja–dc	
<i>Elaeocarpus petiolatus</i> (Jack) Wall. ex Kurz	t	pe	3	gro	egf	1100–1300	ap	ag	ja–dc	
<i>Elaeocarpus prunifolius</i> Wall. ex C. Muell.	t	pe	3	gro	egf	1050–1500	ja–fb	my–ag	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Elaeocarpus sphaericus</i> (Gaertn.) K. Sch.	t	pe	2	gro	egf	1350-1350	ap-my	oc-dc	ja-dc	
<i>Elaeocarpus stipularis</i> Bl.	t	pd	3	gro	mx f egf	500-700	ap-my	sp	my-fb	topotype of <i>Elaeocarpus siamensis</i> Craib
<i>Sloanea tomentosa</i> (Bth.) Rehd. & Wils.	t	pd	3	gro	mx f egf eg/pine	1100-1685	fb-mr	my-ja	fb-dc	
Linaceae										
<i>Reinwardtia indica</i> Dum.	h	pe	3	gro	eg/pine	1375-1475	dc-ja	fb-mr	ja-dc	syn. = <i>Tirpitzia sinensis</i> (Hemsl.) Hall.
Erythroxylaceae										
<i>Erythroxylum cuneatum</i> (Miq.) Kurz	s	pe	3	gro	bb/df	450-1100	my-oc	ag-ja	ja-dc	
Malpighiaceae										
<i>Aspidopterys nutans</i> (Roxb. ex DC.) Juss.	wc	pe	2	gro	egf	950-1400	oc-nv	mr-ap	ja-dc	
<i>Aspidopterys tomentosa</i> (Bl.) Juss.	wc (v)	pe	2	gro	eg/pine	1575-1575	mr	?	ja-dc	
<i>Hiptage benghalensis</i> (L.) Kurz ssp. <i>candicans</i> (Hk. f.) Siri.	t (l)	pd	2	gro	dof bb/df	450-950	fb-mr	mr-ap	mr-ja	
Oxalidaceae										
<i>Biophytum reinwardtii</i> (Zucc.) Klot.	h	a	3	gro	dof bb/df	400-700	jl-nv	sp-dc	jn-dc	
<i>Biophytum sensitivum</i> (L.) DC.	h	a	3	gro wee	dof	350-800	jl-oc	sp-dc	jn-dc	
<i>Biophytum unbraculatum</i> Welw.	h	a	3	gro	dof bb/df	400-850	jl-nv	sp-dc	jn-dc	syn. = <i>Biophytum petersianum</i> Klot.
<i>Oxalis corniculata</i> L.	h	a	3	gro wee	sg da eg/pine	350-1600	my-oc	my-oc	my-dc	
<i>Oxalis corymbosa</i> DC.	h	a	2	cul	egf	1300-1300	dc-fb	dc-fb	my-dc	
Balsaminaceae										
<i>Impatiens curvipes</i> Hk. f.	h	a	3	gro	bb/df mx f	550-1650	jl-nv	ag-nv	my-dc	
<i>Impatiens garrettii</i> Craib	h	a	2	gro	egf streams in dof	600-600	mr	ap	my-dc	
<i>Impatiens mengtzeana</i> Hk. f.	h	pe	3	gro	streams in mx f egf	550-1450	ag-ap	sp-my	ja-dc	
<i>Impatiens violaeiflora</i> Hk. f.	h	a	4	gro epl	egf eg/pine da	600-1685	ag-dc (dc-ja)	sp-nv	my-dc	
Rutaceae										
<i>Acronychia pedunculata</i> (L.) Miq.	t	pe	3	gro	mx f egf	650-1400	jl-sp	oc-fb	ja-dc	
<i>Aegle marmelos</i> (L.) Corr.	t	pd	2	gro	bb/df sg	350-650	mr-my	ja-ap	my-fb	mostly escaped cultivation
<i>Clausena excavata</i> Burm. f. var. <i>excavata</i>	l (t)	pd	3	gro	dof bb/df egf	450-1450	mr-jn	my-sp	mr-ja	
<i>Clausena excavata</i> Burm. f. var. <i>villosa</i> Hk. f.	l (s)	pd	3	gro	dof mx f egf	350-1150	fb-my	my-jl	ap-fb	in da above 1000 m
<i>Clausena lenis</i> Drake	l (s)	pe	1	gro	mx f egf eg/pine	450-1050	mr-my	jn-ag	ja-dc	
<i>Euodia glomerata</i> Craib	l	pe	3	gro	mx f egf	950-1450	ap-jn	sp-oc	ja-dc	topotype
<i>Euodia meliifolia</i> (Hance) Bth.	t	pe	2	gro	mx f egf	775-1475	jn-jl	ag-ja	ja-dc	
<i>Euodia triphylla</i> DC.	l	pe	3	gro	egf eg/pine	1100-1650	ap-my	sp-dc	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Euodia viticina</i> Wall. ex Kurz	l s	pe	2	gro	mxg egf	650-1040	my-jn	jl-ag	ja-dc	<i>q.v. Euodia simplicifolia</i> Ridl.
<i>Feronia imonia</i> (L.) Swing.	t	pd	2	gro	bb/df	350-500	my	jl	ap-ja	
<i>Glycosmis puberula</i> Lindl. ex Oliv.	l	pe	3	gro	mxg egf	700-1350	mr-ap	jn-ji	ja-dc	
var. <i>craibii</i> (Tana.) Stone										
<i>Luvunga scandens</i> (Roxb.) Ham. ex Wight	wc	pe	3	gro	streams in mxg egf	625-1100	mr-ap	jl-ag	ja-dc	
<i>Micromelum falcatum</i> (Lour.) Tana.	l (s)	pe	3	gro	mxg egf	550-110	oc-my	my-ag	ja-dc	infrequently a shrub
<i>Micromelum hirsutum</i> Oliv.	t (l)	pe	3	gro	bb/df mxg egf eg/bb	950-1450	dc-fb	mr-my	ja-dc	mostly a tree, less often a treelet
<i>Micromelum minutum</i> (Forst. f.) Wight & Arn.	t (l)	pe	3	gro	mxg egf eg/pine da	575-1525	oc-ap	ap-ag	ja-dc	
<i>Paramignya scandens</i> (Griff.) Craib var. <i>scandens</i>	wc	pe	2	gro	streams in mxg egf	700-1350	fb-mr	ag-sp	ja-dc	
<i>Toddalia asiatica</i> (L.) Lmk.	wc	pe	3	gro	egf	1100-1600	dc-ja	ag-sp	ja-dc	
<i>Zanthoxylum acanthopodium</i> DC.	l	pe	2	gro	da in eg/pine	1550-1685	nv-ja	jl-ag	ja-dc	
Simaroubaceae										
<i>Brucea javanica</i> (L.) Merr.	l	pd	3	gro	dof bb/df	450-800	sp-oc	oc-nv	my-dc	
<i>Brucea mollis</i> Wall. ex Kurz	l (s)	pd	3	gro	dof bb/df egf	350-1000	fb-my	oc-dc	fb-dc	
<i>Eurycoma longifolia</i> Jack	l	pd	3	gro	dof bb/df	600-800	mr-ap	ap-jn	mr-ja	
<i>Harrisonia perforata</i> (Blanco) Merr.	wc sc	pd	5	gro	bb/df	350-700	ap-my	sp-oc	ap-fb	
<i>Picrasma javanica</i> Bl.	t	pd	3	gro	mxg egf	650-1300	mr-my	my-ag	ap-mr	often changing leaves in April
Irvingiaceae										
<i>Irvingia malayana</i> Oliv. ex Benn.	t	pe	3	gro	mxg	350-750	ap-jn	sp-nv	ja-dc	changing leaves in late March
Ochnaceae										
<i>Ochna integerrima</i> (Lour.) Merr.	t (l)	pd	3	gro	dof	425-850	mr-my	ap-jn	my-fb	
Burseraceae										
<i>Canarium subulatum</i> Guill.	t	pd	3	gro	dof bb/df da in egf	375-1300	mr-ap	jn-ap	ap-fb	topotype of <i>Canarium kerrii</i> Craib
<i>Garuga pinnata</i> Roxb.	t	pd	3	gro	bb/df mxg eg/bb	350-1350	fb-mr	ap-ag	ap-ja	
<i>Protium serratum</i> (Wall. ex Colebr.) Engl.	t	pd	3	gro	mxg egf	350-1500	fb-mr	jn-oc	mr-fb	
Meliaceae										
<i>Aglaia lawii</i> (Wight) Sald. & Rama.	t	pe	2	gro	egf	1225-1575	jl-ag	my-jn	ja-dc	
<i>Aphanamixis polystachya</i> (Wall.) R. Parker	t	pe	3	gro	egf and streams in mxg	375-1300	ag-oc	ja-my	ja-dc	
<i>Aphanamixis</i> sp.	l	pe	3	gro	mxg egf	725-1575	my-ag	oc-dc	ja-dc	mostly in egf above 1000 m
<i>Chukrasia tabularis</i> A. Juss.	t	pd	3	gro	bb/df	350-525	jn-sp	ja-my	jn-ja	syn. = <i>Chukrasia velutina</i> (M. Roem.) C. DC.
<i>Cipadessa baccifera</i> (Roth) Miq.	t (l)	pe	2	gro	egf eg/pine	1300-1500	my-nv	nv-ja	ja-dc	
<i>Dysoxylum</i> aff. <i>cauliflorum</i> Hiern	t	pe	2	gro	mxg	700-750	my-jn	oc-nv	ja-dc	
<i>Dysoxylum excelsum</i> Bl.	t	pe	2	gro	mxg	700-1100	my-jn	mr-ap	ja-dc	syn. = <i>Dysoxylum procerum</i> Wall. ex Hiern

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Dysoxylum</i> aff. <i>hamiltonii</i> Hiem	t	pe	3	gro	egf	1050–1125	ag-sp	?	ja-dc	
<i>Heynea trijuga</i> Roxb. ex Sims	t	pe	3	gro	bb/df mx f egf	550–1680	fb-mr	(ag) oc-nv	ja-dc	syn. = <i>Trichilia connaroides</i> (Wight & Arn.) Benth.
<i>Melia toosendan</i> Sieb. & Zucc.	t	pd	3	gro	mx f egf	700–1450	ja-mr	ag-mr	fb-dc	q.v. <i>Melia dubia</i> Cav.
<i>Munronia humilis</i> (Blanco) Harms	h	pd	2	gro	dof bb/df	375–900	my-ag	ag-oc	my-dc	
<i>Sandoricum koetjape</i> (Burm. f.) Merr.	t	pe	3	gro	da in bb/df	350–650	mr	jn-ag	ja-dc	also cultivated
<i>Toona ciliata</i> M. Roem.	t	pd	3	gro	dof mx f egf	500–1050	ja-fb	ap-jn	fb-dc	syn. = <i>Toona microcarpa</i> (C. DC.) Harms, changing leaves ja-fb
<i>Walsura intermedia</i> Craib	t	pe	3	gro	mx f	550–950	ap-jn	jl-ag	ja-dc	
<i>Walsura trichostemon</i> Miq.	t	pe	2	gro	dof mx f	460–680	fb	my-jn (ag)	my-mr	syn. = <i>Walsura villosa</i> Wall. ex Kurz
Oleaceae										
<i>Anacostia ilicoides</i> Mast.	t (l)	pe	2	gro	egf	850–1050	jl	ap-my	ja-dc	
<i>Oxal imbricata</i> Roxb.	wc	pde	3	gro	dof bb/df	400–e 600	ap	ag	ap-fb	
<i>Oxal scandens</i> Roxb.	wc	pd	3	gro	dof mx f	350–700	ap-my	ag-oc	mr-dc	
<i>Schoepfia fragrans</i> Wall.	l (s)	pe	3	gro	dof bb/df mx f egf	550–1475	sp-ja	nv-mr	ja-dc	
Loasaceae										
<i>Apodytes dimidiata</i> E. Mey. ex Arn.	t	pd	2	gro	egf da	1150–1500	ap-my	oc	fb-dc	
<i>Lodes viliginea</i> (Hance) Hemsl. var. <i>viliginea</i>	wc	pe	3	gro	egf	1075–1550	ap-jn	ag-sp	ja-dc	
<i>Pittosporopsis kerrii</i> Craib	t (l)	pe	2	gro	mx f egf	750–1200	fb-ap	jl-ag	ja-dc	topotype
<i>Platan latifolia</i> Bl.	t	pe	2	gro	egf	1000–1100	?	my	ja-dc	
Cardiophoridae										
<i>Cardiophorus quinqueloba</i> (Hassk.) Hassk.	v	a	3	gro	mx f egf	500–1100	sp-oc	dc-fb	my-ja	
Aquifoliaceae										
<i>Ilex englishii</i> Lace	t	pe	2	gro	egf eg/pine	1250–1350	?	my-jl	ja-dc	
<i>Ilex umbellulata</i> (Wall.) Loesn.	t	pe	3	gro	mx f egf	500–1350	ap	jl-oc	ja-dc	
<i>Ilex</i> sp.	t	pe	2	gro	egf eg/pine	1300–1550	?	oc-nv	ja-dc	
Celastraceae										
<i>Celastrus monospermus</i> Roxb.	wc	pe	2	gro	eg/pine egf mx f	650–1450	ap-my	dc-fb (ag)	ja-dc	
<i>Celastrus paniculatus</i> Willd.	wc	pd	3	gro	dof bb/df	350–950	mr-jn	jl-oc	ap-fb	
<i>Euonymus similis</i> Craib	t (l)	pe	3	gro	dof mx f egf	450–1525	my-jl	sp-ja	ja-dc	topotype
<i>Euonymus sootepensis</i> Craib	wc cr	pe	2	gro	egf	1100–1100	my-jn	oc-nv	ja-dc	topotype
<i>Lophopetalum wallichii</i> Kurz	t	pd	2	gro	dof	400–880	sp-ja	mr-ap	ap-ja	
<i>Reissneria indica</i> (Willd.) Halle	wc	pd	2	gro	bb/df mx f	650–850	ap-my	fb	ap-fb	
<i>Siphonodon celastrius</i> Griff.	t	pd	2	gro	dof bb/df	350–500	ja-fb	dc-fb (jl)	ap-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Rhamnaceae										
<i>Berberis floribunda</i> (Wall.) Wall. ex Brongn.	wc (l.s)	pe	2	gro	streams in dof egf	575–1450	mr–ap	fb–mr	ja–dc	
<i>Colubrina pubescens</i> Kurz	l sc	pd	3	gro	sg da	350–350	oc–nv	dc–fb	ap–ja	
<i>Hovenia dulcis</i> Thunb.	t	pd	2	gro	egf	1025–1325	ap–my	nv–dc	my–dc	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 42:2(1994) 260.
<i>Rhamnus nipalensis</i> (Wall.) Laws.	wc	pe	2	gro	egf	1250–1250	ap–my	sp–oc	ja–dc	
<i>Ventilago denticulata</i> Willd.	wc	pd	3	gro	bb/df	325–725	oc–nv	ja–mr	ap–fb	
<i>Ziziphus oenoplia</i> (L.) Mill. var. <i>brunoniana</i> (Cl. ex Bran.) Tard.	wc	pd	3	gro	bb/df	400–600	ag–sp	nv–ja	my–fb	
<i>Ziziphus oenoplia</i> (L.) Mill. var. <i>oenoplia</i>	wc sc	pd	3	gro	bb/df	400–600	sp–oc	nv–dc	ap–fb	
<i>Ziziphus rugosa</i> Lmk. var. <i>rugosa</i>	t (l)	pd	3	gro	dof bb/df	550–1000	fb–ap	ap–my	my–mr	
Vitaceae										
<i>Ampelocissus martinii</i> Planch.	v	pd	3	gro	dof bb/df	375–800	mr–jn	sp–oc	mr–ja	
<i>Ampelocissus</i> sp.	wc	pe	2	gro	egf	1050–1100	my–jn	?	ja–dc	q.v. <i>Vitis lanata</i> Roxb. var. <i>glabra</i> Laws.
<i>Cayratia japonica</i> (Thunb.) Gagnep.	v	pe	3	gro	da	1000–1400	my–ag	jl–oc	ja–dc	q.v. <i>Cayratia tenuifolia</i> (Wight & Arn.) Gagnep.
<i>Cayratia pedata</i> (Lour.) Juss.	v	ped	3	gro	bb/df	500–700	jn–jl	sp–oc	ap–fb	
<i>Cayratia trifolia</i> (L.) Dom. var. <i>cinerea</i> (Lmk.) Gagnep.	v (wc)	pd	3	epl	sg da	350–950	ap–my	jl–sp	my–dc	
<i>Cayratia</i> sp.	v	pe	2	gro	streams in mx/pine egf	1500–1550	?	sp–nv	ja–dc	
<i>Cissus adnata</i> Roxb.	wc	pd	3	gro	bb/df mxf	500–800	my–jl	ag–oc	my–fb	
<i>Cissus assamica</i> (Laws.) Craib	v (wc)	pd	3	gro	eg eg/pine	1200–1620	jl–oc	oc–dc	my–fb	
<i>Cissus discolor</i> Bl. var. <i>discolor</i>	v	pe	3	gro	egf da	700–1525	jl–ag	sp–nv	ja–dc	
<i>Cissus hastata</i> Miq.	v	pe	3	gro	dof bb/df mxf	550–130	jn–nv	ag–ja	ja–dc	open areas
<i>Cissus repanda</i> Vahl	wc	pd	3	gro	mxf eg/bb	700–1100	jl–ag	nv–dc	my–ja	
<i>Cissus repens</i> Lmk.	wc (v)	pd	3	gro	bb/df mxf da	400–1550	jn–ag	nv–dc	my–dc	
<i>Parthenocissus semicorata</i> (Wall.) Pl.	wc	pd	3	gro	egf eg/pine da	1250–1650	my	ag–sp	my–dc	
<i>Tetrastigma campylocarpum</i> (Kurz) Planch.	wc	pe	2	gro	mxf	550–650	nv–dc	mr–ap	ja–dc	
<i>Tetrastigma crassipes</i> Pl.	wc	pe	2	gro	egf streams	1350–1350	mr–ap	?	ja–dc	
<i>Tetrastigma cruciatum</i> Craib & Gagnep.	wc	pe	3	gro	mxf egf	375–1450	ap–my	ag–nv	ja–dc	topotype
<i>Tetrastigma delavayi</i> Gagnep.	wc	pe	3	gro	egf	1450–1675	oc–nv	nv–ja	ja–dc	
<i>Tetrastigma garrettii</i> Gagnep.	v	pde	3	gro	bb/df mxf egf	775–1225	ja–mr	ap–ag	ja–dc	often leafless December–February
<i>Tetrastigma</i> aff. <i>harmandii</i> Planch.	wc	pe	2	gro	mxf	500–900	nv–ja	nv–ja	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Tetrastigma laoticum</i> Gagnep.	wc	pe	2	gro	mx f egf	950–1475	nr–ap	my–sp	ja–dc	
<i>Tetrastigma obovatum</i> (Laws.) Gagnep.	wc	pde	3	gro	egf mx f often along streams	650–1500	ap–my	ja–mr	ja–dc	often leafless April–May
<i>Tetrastigma quadrangulum</i> Gagnep. & Craib	v (wc)	pe	3	gro	mx f egf	750–1100	oc–nv	ja–mr	ja–dc	topotype
<i>Tetrastigma serrulatum</i> (Roxb.) Planch.	wc	pe	3	gro	mx f egf	700–1425	nr–my	nv–mr	ja–dc	usually along streams
<i>Tetrastigma siamense</i> Gagnep. & Craib	wc	pe	3	gro epl	mx f egf	350–1525	ap–jl	jl–sp	ja–dc	
<i>Tetrastigma yunnanense</i> Gagnep.	wc	pe	1	gro	egf sg	1300–1500	ap–my	?	ja–dc	vide <i>Vitis thomsonii</i> Laws.
<i>Tetrastigma</i> sp.	wc	pe	2	gro	egf da eg/pine	1250–1600	?	nv–ap	ja–dc	
Leeaceae										
<i>Leea guineensis</i> G. Don	l	pd	3	gro	dof bb/df	525–800	jn–ag	sp–nv	ap–fb	topotype of <i>Leea dentata</i> Craib
<i>Leea herbacea</i> Ham. ex Cl.	l (s)	pe	3	gro	mx f egf	550–1125	jn–jl	ag–sp	ap–mr	
<i>Leea indica</i> (Burm. f.) Merr.	h (s)	pe	4	gro	eg/pine da dof bb/df egf	525–1550	jn–sp	ag–oc	ja–dc	
<i>Leea macrophylla</i> Roxb. ex Horn.	l (h)	pd	2	gro	bb/df	500–600	sp–oc	dc–ja	ap–ja	topotype of <i>Leea pallida</i> Craib
<i>Leea rubra</i> Bl. ex Spreng.	h (l)	ped	3	gro	mx f	525–700	jn–jl	ag–oc	ap–mr	
Sapindaceae										
<i>Allophylus cobbe</i> (L.) Raeusch.	l	pe	3	gro	dof bb/df mx f egf	600–1200	jn–ag	ag–oc	ja–dc	
<i>Dimocarpus longan</i> Lour. ssp. <i>longan</i> var. <i>longan</i>	t	pe	2	gro	mx f egf	550–1300	nr–ap	jl–ag	ja–dc	also cultivated for its edible fruits
<i>Harpullia cupanioides</i> Roxb.	t	pd	3	gro	mx f egf	575–800	ap–my	my–jl	my–fb	
<i>Lepisanthes tetraphylla</i> (Vahl) Radlk.	t	pe	3	gro	mx f egf	900–1400	dc–jl	fb–ap	ja–dc	
<i>Litchi chinensis</i> Sonn. ssp. <i>chinensis</i>	t	pe	3	gro cul int	cult	800–1100	fb–mr	ap–my	ja–dc	cultivated for its edible fruits
<i>Mischocarpus pentapetalus</i> (Roxb.) Radlk.	t	pe	4	gro	mx f egf	700–1000	my–jn	jl–ag	ja–dc	
<i>Sapindus rarak</i> DC.	t	pd	3	gro	mx f egf da	625–1620	nr–ap	jl–ja	my–ja	
<i>Schleichera oleosa</i> (Lour.) Oken	t	pd	4	gro	bb/df	350–600	nr–my	my–jl	ap–fb	syn. = <i>Schleichera trijuga</i> Willd.
Aceraceae										
<i>Acer laurinum</i> Hassk.	t	pd	2	gro	egf	1000–1000	dc–ja	ja–mr	ja–rv	syn. = <i>Acer garrettii</i> Craib, fruits described: Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 72 and fig. 1.
Staphyleaceae										
<i>Turpinia nepalensis</i> (Roxb.) Wall. ex Wight & Arn.	t	pe	3	gro	egf	1050–1685	fb–mr	ag–nv	ja–dc	
<i>Turpinia pomifera</i> (Roxb.) Wall. ex DC.	t	pe	4	gro	eg/pine mx f egf	650–1680	ja–mr	(jl) sp–dc	ja–dc	

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Sabiaceae										
<i>Meliosma pinnata</i> (Roxb.) Maxim. ssp. <i>arnottiana</i> (Wight) Beus. var. <i>arnottiana</i>	t	pe	2	gro	egf	1025–1685	ap–my	ag–dc	ja–dc	
<i>Meliosma simplicifolia</i> (Roxb.) Walp. ssp. <i>fordii</i> (Hemsl.) ex Forb. & Hemsl.) Beus.	t	pe	3	gro	mx f egf	600–1100	fb–mr	(my) jl–nv	ja–dc	topotype of <i>Meliosma simplicifolia</i> (Roxb.) Walp. var. <i>sootepensis</i> Craib
Anacardiaceae										
<i>Buchanania glabra</i> Wall. ex Hk. f.	t (l)	pd	3	gro	dof sg	400–600	oc–ja	ja–mr	mr–fb	
<i>Buchanania lanzan</i> Spreng.	t	pd	3	gro	dof bb/df mx f	375–1200	ja–mr	(ja) mr–my	my–mr	syn. = <i>Buchanania latifolia</i> Roxb.
<i>Gluta obovata</i> Craib	t	pe	4	gro	mx f egf	700–1250	ap–jn	ag–oc	ja–dc	
<i>Gluta usitata</i> (Wall.) Hou	t	pd	4	gro	dof bb/df	375–850	nv–fb	ja–mr	my–fb	
<i>Holigarna kurzii</i> King	t	pd	2	gro	dof bb/df	350–550	ag–sp, nv–dc	mr–ap	(mr)	
<i>Lannea coromandelica</i> (Houtt.) Merr.	t	pd	3	gro	dof bb/df	350–500	ja–mr	ap–my	ap–dc	
<i>Mangifera caloneura</i> Kurz	t	pe	3	gro	bb/df egf	350–1000	ja–fb	ap–my	ja–dc	
<i>Pegia nitida</i> Colebr.	wc sc	pe	2	gro	egf	1400–1400	mr–ap	my	ja–dc	
<i>Rhus chinensis</i> Mill.	t (l)	pd	3	gro	da sg in bb/df mx f eg/pine	500–1550	sp–nv	ja–fb	ap–ja	
<i>Rhus thetoides</i> Craib	t	pd	3	gro	mx f egf eg/pine	650–1550	mr–sp	sp–jn	ap–ja	often leafless dc–ja
<i>Rhus succedanea</i> L.	t	pe	2	gro	mx f	800–1000	jl–ag	nv–ja	ja–dc	often leafless dc–fb
<i>Semecarpus cochinchinensis</i> Engl.	t	pd	3	gro	bb/df mx f egf da	350–1275	dc–mr	mr–my	my–mr	
<i>Spondias axillaris</i> Roxb.	t	pd	3	gro	egf mx f eg/pine	700–1600	ja–mr	mr–ag	mr–dc	syn. = <i>Choerospondias axillaris</i> (Roxb.) Burt & Hill
<i>Spondias pinnata</i> (L. f.) Kurz	t	pd	3	gro	dof bb/df	375–750	mr–my	oc–mr	my–dc	
Connaraceae										
<i>Cnestis palata</i> (Lour.) Merr. ssp. <i>palata</i>	wc	pd	3	gro	bb/df	400–850	nv–dc	fb–mr	fb–dc	*
<i>Connarus semidecandrus</i> Jack	wc (sc)	pe	3	gro	mx f egf	700–1100	mr	ap–my	ja–dc	
<i>Rourea minor</i> (Gaertn.) Leenh. ssp. <i>minor</i>	wc	pe	3	gro	egf da	925–1500	sp–mr	ag–nv	ja–dc	topotype of <i>Santaloides siamensis</i> Schellenb.
Leguminosae, Mimosoideae										
<i>Acacia concinna</i> (Willd.) DC.	wc	pe	2	gro	streams in bb/df	650–750	mr–ap	ap–ja	ja–dc	
<i>Acacia megaladena</i> Desv. var. <i>megaladena</i>	wc	pd	3	gro	bb/df mx f egf	400–1400	jl–ag	nv–ja	ap–ja	mostly in open areas
<i>Adenanthera microsperma</i> Teijsm. & Binn.	t	pd	3	gro	dof bb/df	350–700	ap–jn	(my) sp–nv	ap–ja	syn. = <i>Adenanthera pavonina</i> L. var. <i>microsperma</i> (Teijsm. & Binn.) Niels.
<i>Albizia chinensis</i> (Osbeck) Merr.	t	pd	3	gro	mx f da in egf and eg/pine	450–1325	ap–my	ja–fb	my–fb	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Albizia crassiramea</i> Lace	t	pd	3	gro	mx f streams	525-650	ag-oc	fb-mr	my-mr	
<i>Albizia garrettii</i> Niels.	t	pd	2	gro	eg/pine	1400-1475	ap-my	dc-fb	my-ja	
<i>Albizia lebbeck</i> (L.) Bth.	t	pd	3	gro	bb/df sg	350-500	mr-ap	ja-ap	mr-dc	
<i>Albizia lucidior</i> (Steud.) Niels.	t	pd	3	gro	bb/df sg	375-550	ap	nv-fb	my-fb	
<i>Albizia odoratissima</i> (L. f.) Bth.	t	pd	3	gro	dof bb/df eg/pine da	350-1525	ap-my	oc-mr	mr-fb	
<i>Archidendron clypearia</i> (Jack) Niels.	t	pe	3	gro	mx f egf eg/pine	625-1675	fb-mr	ap-jn	ja-dc	
<i>ssp. clypearia</i> var. <i>clypearia</i>					sg da					
<i>Archidendron glomeriflorum</i> (Kurz) Niels.	l (s)	pe	3	gro	egf eg/pine da	1200-1650	fb-ap	sp-oc	ja-dc	
<i>Entada rheedii</i> Spreng. ssp. <i>rheedii</i>	wc	pd	3	gro	egf	1000-1325	mr-ap	jn-mr	my-mr	
<i>Mimosa diplotricha</i> C. Wright ex Sauv. var. <i>diplotricha</i>	h	a	5	gro nat wee int	da	350-1500	sp-nv	nv-ja	ja-dc	syn. = <i>Mimosa invisa</i> Mart. ex Colla var. <i>invisa</i>
<i>Mimosa pigra</i> L.	l	pe	5	gro wee int nat rhe	da	350-1200	sp-nv	nv-ja	ja-dc	
<i>Mimosa pudica</i> L. var. <i>hispida</i> Bren.	h	a, pe	4	gro nat wee	eg/pine da	350-1525	ag-oc	oc-nv	ja-dc	
<i>Mimosa pudica</i> L. var. <i>unijuga</i> (Duch. & Walp.) Griseb.	h	a, pe	4	gro int nat wee	da	350-1000	ag-oc	ag-nv	ja-dc	
<i>Samanea saman</i> (Jacq.) Merr.	t	pd	3	gro int cul	da	350-700	ap-my	fb-mr	ja-dc	open places, often leafless in March
<i>Xylia xylocarpa</i> (Roxb.) Taub. var. <i>kerrii</i> (Craib & Hutch.) Niels.	t	pd	4	gro bb/df mx f	dof	375-1000	fb-ap	nv-mr	mr-fb	topotype, leafless in February-March
Leguminosae, Caesalpinioideae										
<i>Acrocarpus fraxinifolius</i> Wight ex Arn.	t	pd	2	gro	egf	1000-1200	ja-mr	(ja) ap-my	my-ja	
<i>Azizia xylocarpa</i> (Kurz) Craib	t	pd	2	gro	bb/df	350-500	mr-ap	jn-fb	mr-dc	topotype of <i>Azizia siamica</i> Craib, decimated by deforestation
<i>Bauhinia bracteata</i> (Grah. ex Bth.) Bak. ssp. <i>bracteata</i>	wc	pe	3	gro	bb/df	350-350	ag-sp	jl-ag	mr-ja	
<i>Bauhinia glauca</i> (Wall. ex Bth.) Bth. ssp. <i>tenuiflora</i> (Watt ex Cl.) K. & S.S. Lar.	wc	pe	3	gro	egf	1200-1450	my-ji	oc-dc	ja-dc	
<i>Bauhinia hirsuta</i> Weinm.	s (h)	pd	3	gro	bb/df	350-550	my-jn	jl-sp	ap-ja	
<i>Bauhinia ornata</i> Kurz var. <i>kerrii</i> (Gagnep.) K. & S.S. Lar.	wc	pe	4	gro	mx f egf eg/pine da	675-1575	nv-mr	ag-oc	ja-dc	topotype
<i>Bauhinia purpurea</i> L.	l	pde	3	gro int cul	da	350-950	fb-ji	jl-ap	mr-fb	often leafless February-March, open places, ornamental
<i>Bauhinia racemosa</i> Lmk.	t (l)	pd	2	gro	bb/df	350-550	nv-dc	(mr) sp-oc	my-mr	
<i>Bauhinia variegata</i> L.	t	pd	3	gro	bb/df mx f egf	650-1250	ja-mr	mr-ap	my-ja	
<i>Bauhinia viridescens</i> Desv. var. <i>viridescens</i>	s	pd	3	gro	bb/df	375-450	ag-sp	nv-ja	ap-fb	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Caesalpinia cucullata</i> Roxb.	wc	pd	3	gro	eg/pine egf	1000–1525	dc-ja	fb-mr	my-mr	
<i>Caesalpinia digyna</i> Rottl.	wc	pd	3	gro	bb/df	425–500	oc-nv	fb-mr	my-fb	
<i>Caesalpinia furfuracea</i> (Prain) Hatt.	wc	pd	2	gro	mx	825–825	nv-dc	ja-fb	ap-fb	
<i>Caesalpinia hymenocarpa</i> (Prain) Hatt.	wc sc	pd	3	gro	bb/df mx	475–700	sp-oc	dc-ja	my-fb	
<i>Caesalpinia mimosoides</i> Lmk.	wc	pd	3	gro	da	375–650	oc-nv	dc-ja	my-dc	
	v sc									
<i>Caesalpinia sappan</i> L.	l(s, wc)	pe	2	gro	open, wet places, streams in da sg	1050–1075	jl-ag	ag-oc	ja-dc	
<i>Cassia bakeriana</i> Craib	t	pd	2	gro	bb/df mx	1000–1350	ja-jn	sp-ap	ap-ja	topotype
<i>Cassia fistula</i> L.	t	pd	4	gro	dof bb/df mx	400–1050	fb-my	oc-mr	my-fb	
<i>Chamaecrista leschenaultiana</i> (DC.) Degenet	h	a	3	gro	dof mx	500–1400	jn-oc	sp-nv	my-dc	basionym = <i>Cassia leschenaultiana</i> DC.
<i>Peltophorum dasyrhachis</i> (Miq.) Kurz var. <i>dasyrhachis</i>	t	pd	3	gro cul	bb/df	350–900	mr-ap	sp-oc (ja)	ja-dc	formerly as “ <i>dasyrhachis</i> ”
<i>Pterolobium macropterum</i> Kurz	wc	pd	3	gro	bb/df sg	375–850	ap-my	jl-nv	my-fb	
<i>Senna spectabilis</i> (DC.) Irwin & Barneby	t	pd	3	gro cul int	da	350–900	oc-ja	fb-my	my-mr	syn. = <i>Cassia spectabilis</i> DC., ornamental
<i>Senna tora</i> (L.) Roxb.	h	a	3	gro wee	bb/df mx	500–600	sp-oc	nv-dc	my-dc	syn. = <i>Cassia tora</i> L.
<i>Sindora siamensis</i> Teysm. ex Miq. var. <i>siamensis</i>	t	pd	2	gro	dof streams bb/df	350–460	my-jn	(jn) dc-ja	my-fb	valuable wood, severely exploited
Leguminosae, Papilionoideae										
<i>Abrus precatorius</i> L. ssp. <i>precatorius</i>	v	a	3	gro	dof	400–600	oc-nv	nv-ja	my-dc	
<i>Abrus pulchellus</i> Wall. ex Thw. ssp. <i>pulchellus</i>	v	a	3	gro	mx egf	575–1400	oc-nv	dc-fb	my-dc	
<i>Aeschynomene americana</i> L. var. <i>americana</i>	h	a	4	gro nat wee	da sg	350–1150	sp-oc	nv-ja	my-ja	
<i>Afgekia filipes</i> (Dunn) Gees.	wc	pd	3	gro	eg/pine egf da	1000–1575	mr-ap	sp-oc	mr-fb	
<i>Alysicarpus bupleurifolius</i> (L.) DC.	h	a	3	gro cul int	dof	400–800	sp-oc	nv-dc	ap-ja	
<i>Apois carnea</i> (Wall.) Bth. ex Baker	v	pe	3	gro	egf	1500–1675	oc-nv	ja-fb	ja-dc	
<i>Butea monosperma</i> (Lmk.) Taub.	t	pd	3	gro cul	da	350–400	fb	jn-ji	my-ja	open places
<i>Cajanus cajan</i> (L.) Millsp.	l(s)	pe	2	nat cul	bb/df	350–550	dc-fb	fb-ap	ja-dc	field crop
<i>Cajanus crassus</i> (Prain ex King) Maes. var. <i>crassus</i>	v(h)	a	3	cul nat	bb/df da	350–500	ja-fb	fb-ap	my-dc	
<i>Cajanus goensis</i> Dalz.	v	a	3	gro	bb/df mx egf	525–1550	ja-fb	sp-nv	my-dc	
					eg/pine da					
<i>Cajanus scarabaeoides</i> (L.) du P.-T. var. <i>scarabaeoides</i>	v	a	4	gro nat	dof bb/df	400–850	sp-oc	nv-ja	my-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cajanus volubilis</i> (Blanco) Blanco	v	a	3	gro	bb/df da	450-450	jl-oc	oc-nv	my-dc	
<i>Callerya atropurpurea</i> (Wall.) Schot	t	pe	1	gro	egf	1000-1100	?ja	my-ji	ja-dc	syn. = <i>Padbruggea pubescens</i> Craib
<i>Canavalia ensiformis</i> (L.) A. DC.	v	a	3	gro	bb/df da	350-450	oc-nv	dc-ap	my-dc	syn. = <i>Canavalia virosa</i> (Roxb.) Wight & Arn.
<i>Centrosema pubescens</i> Bth.	v	a	3	nat	da	350-975	sp-nv	dc-ja	my-dc	thickets
<i>Christia obcordata</i> (Poir.) Bakh. f. var. <i>obcordata</i>	h	a	3	gro	bb/df	350-450	jn-sp	jl-oc	my-ja	
<i>Clitoria macrophylla</i> Wall. ex Bth.	h (v)	pd	3	gro	dof	400-800	jl-ag	oc-nv	my-ja	
<i>Clitoria mariana</i> L.	v	pd	3	gro	egf eg/pine da	1100-1685	jl-oc	sp-dc	my-dc	
<i>Crotalaria acicularis</i> B.-H. ex Bth.	h	a	3	gro	dof da in egf	500-1200	nv-dc	ja-fb	jn-mr	
<i>Crotalaria alata</i> D. Don	h	a	4	gro	dof bb/df eg/pine da	400-1525	sp-nv	oc-ja	my-ja	
<i>Crotalaria albida</i> Hey. ex Roth	h	a	4	gro	dof eg/pine da	450-1525	sp-dc	nv-fb	my-ja	topotype of <i>Crotalaria hossei</i> Craib
<i>Crotalaria assamica</i> Bth.	l	pd	3	gro	egf da	1000-1685	oc-nv	dc-ja	my-ja	
<i>Crotalaria bracteata</i> Roxb. ex DC.	h	a	3	gro	bb/df thickets	400-925	oc-nv	fb-mr	jn-fb	
<i>Crotalaria dubia</i> Grah. ex Bth.	h	a	3	gro	sg bb/df	700-1450	nv-dc	ja-mr	jn-mr	often in thickets
<i>Crotalaria ferruginea</i> Grah. ex Bth.	h	a	3	gro	bb/df mxf eg/pine	375-1500	oc-dc	ja-mr	jn-mr	
<i>Crotalaria kurzii</i> Baker ex Kurz	h	a	3	gro	mxf eg/pine da	600-1450	oc-nv	dc-fb	jn-mr	
<i>Crotalaria medicaginea</i> Lmk. var. <i>medicaginea</i>	h	a	3	gro	dof bb/df	400-850	oc-nv	dc-ja	jn-fb	
<i>Crotalaria nerifolia</i> Wall. ex Bth.	h	pd	3	gro	dof mxf	425-1225	oc-dc	nv-fb	my-fb	
<i>Crotalaria pallida</i> Ait.	l (h)	ape	3	gro wee	da	350-1650	ap-oc	jl-dc	my-dc	evergreen above 1000 m
<i>Crotalaria prostrata</i> Rotl. ex Willd.	h	a	2	gro	mxf	950-950	oc-nv	nv-ja	my-dc	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989) 181.
<i>Crotalaria sessiliflora</i> L.	h	pd	3	gro	dof bb/df	450-850	nv-dc	ja-fb	jn-fb	
<i>Crotalaria shanica</i> Lace	h	a	2	gro wee	da	500	sp-nv	dc	my-dc	
<i>Crotalaria zanzibarica</i> Bth.	h	a	2	wee	da in egf	1175-1175	oc-nv	nv-dc	my-dc	open places, new record: Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 73.
<i>Cruddasia insignis</i> Prain	v	pe	3	gro	eg/pine egf da	1325-1550	jl-ag	sp-nv	ja-dc	
<i>Cyclocarpa stellaris</i> Afz. ex Urb.	h	pe	3	gro wee	egf eg/pine da	1500-1680	ag-oc	dc-ja	ja-dc	
<i>Cylisia scariosa</i> Roxb.	v	pd	3	gro	bb/df	350-550	ja-fb	ap-jn	ja-nv	syn. = <i>Paracalyx scarious</i> (Roxb.) Ali
<i>Dalbergia cana</i> Grah. ex Kurz	t	pd	3	gro	bb/df	350-500	fb-mr	ap-my	ap-ja	syn. = <i>Dalbergia kerrii</i> Craib
<i>Dalbergia cultrata</i> Grah. ex Bth.	t	pd	4	gro	da dof bb/df mxf eg/pine egf	350-1400	fb-ag	jl-mr	ap-fb	syn. = <i>Dalbergia fusca</i> Pierre, rare in egf
<i>Dalbergia lucei</i> Prain	t	pd	2	gro	dof/pine	1375-1375	ap	ag-sp	ap-mr	

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Dalbergia lanceolaria</i> L. f. var. <i>errans</i> (Craib) Niyo.	t	pd	2	gro	bb/df	450-650	mr-ap	ag-sp	ap-fb	
<i>Dalbergia lanceolaria</i> L. f. var. <i>lakonensis</i> (Gagnep.) Niyo. & Ho	t	pd	3	gro	bb/df	350-700	mr-ap	nv-fb	ap-fb	topotype of paratype of <i>Dalbergia lakonensis</i> Gagnep. var. <i>appendiculata</i> Craib
<i>Dalbergia oliveri</i> Gamb. ex Prain	t	pd	3	gro	dof bb/df mx f da in egf mx/pine	350-1500	fb-ap	jn-ag	ap-fb	syns. = <i>Dalbergia bariensis</i> Pierre, <i>Dalbergia dongnaiensis</i> Pierre, <i>Dalbergia duperreana</i> Pierre
<i>Dalbergia ovata</i> Grah. ex Bth.	t	pd	3	gro	mx f egf	650-1350	fb-mr	ap-jl	fb-dc	
<i>Dalbergia rimosa</i> Roxb.	sc, wc (t)	pd	3	gro	bb/df da in egf	350-1300	jn-ag	nv-ja	ap-fb	old individuals often tree-like with scandent branches, syn. = <i>Dalbergia discolor</i> Bl. ex Miq.
<i>Dalbergia stipulacea</i> Roxb.	wc	pd	4	gro	da bb/df egf	500-1400	ap-sp	jl-nv	ap-fb	often scandent
<i>Dalbergia velutina</i> Bth. var. <i>succirubra</i> (Gagnep. & Craib) Niyo.	wc	pd	2	gro	egf eg/pine	1200-1550	dc-fb	mr-ap	ap-ja	topotype, syn. = <i>Dalbergia succirubra</i> Gagnep. & Craib
<i>Dalbergia velutina</i> Bth. var. <i>velutina</i>	wc	pd	3	gro	eg/pine and da in egf	1000-1475	fb-mr	mr-jn	mr-ja	topotype of <i>Dalbergia abbreviata</i> Craib
<i>Dalbergia volubilis</i> Roxb.	wc	pd	3	gro	bb/df	350-500	fb-mr	jn-ag	ap-fb	
<i>Derris robusta</i> (Roxb. ex DC.) Bth.	t	pd	2	gro	bb/df da sg	425-500	mr-ap	fb-my	ap-ja	
<i>Desmodium elegans</i> (Lour.) Bth.	l	pd	2	gro	dof	700-700	sp-oc	ja-fb	ap-fb	
<i>Desmodium flexuosum</i> Wall. ex Bth.	h	a	3	gro	bb/df	350-550	oc-nv	dc-ja	jn-mr	
<i>Desmodium gangeticum</i> (L.) DC.	s (l)	pd	3	gro	dof stream bb/df	375-500	oc-nv	dc-ja	ap-ja	can also be a herb
<i>Desmodium gyroides</i> (Roxb. ex Link) DC.	l	pd	3	gro	bb/df	50-750	oc-nv	nv-ja	ap-ja	
<i>Desmodium heterocarpon</i> (L.) DC. ssp. <i>angustifolium</i> Oha.	h	pd	3	gro	dof bb/df	500-950	sp-nv	oc-dc	jn-ja	
<i>Desmodium heterocarpon</i> (L.) DC. ssp. <i>heterocarpon</i> var. <i>birmanicum</i> (Watt ex Prain) Oha.	h	pd	3	gro	bb/df	350-600	sp-nv	oc-dc	jn-ja	
<i>Desmodium heterocarpon</i> (L.) DC. ssp. <i>heterocarpon</i> var. <i>heterocarpon</i>	h	pd	4	gro	bb/df eg/pine cult da	700-1450	sp-nv	oc-dc	my-dc	
<i>Desmodium heterocarpon</i> (L.) DC. ssp. <i>heterocarpon</i> var. <i>strigosum</i> Mee.	h	pd	4	gro	bb/df	500-900	sp-nv	oc-dc	my-dc	
<i>Desmodium laxiflorum</i> DC. ssp. <i>laxiflorum</i>	l (h)	pd	3	gro	bb/df	500-1200	oc-nv	nv-ja	my-fb	
<i>Desmodium longipes</i> Craib	s (l)	pd	3	gro	bb/df mx f	500-800	ag-oc	nv-dc	ap-fb	topotype
<i>Desmodium megaphyllum</i> Zoll. var. <i>megaphyllum</i>	h (l)	pe	3	gro	mx f egf	800-1500	oc-nv	ja-fb	ja-dc	
<i>Desmodium motorium</i> (Houtt.) Merr.	l (s,h)	apd	4	gro	dof mx f	400-1450	ag-nv	nv-ja	ap-ja	syn. = <i>Desmodium gyrans</i> (L.f.) DC.

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Desmodium multiflorum</i> DC.	l (s)	pd	3	gro	mx f eg/pine	1300-1650	ag-dc	dc-ap	jn-ap	
<i>Desmodium oblatum</i> Baker ex Kurz	l (h)	pe	3	gro	mx f egf	875-1200	nv-ja	ja-mr	ja-dc	syn. = <i>Desmodium renifolium</i> (L.) Schindl. var. <i>oblatum</i> (Baker ex Kurz) Oha.
<i>Desmodium oblongum</i> Wall. ex Bth.	l (s h)	pd	4	gro	dof bb/df mx f egf	700-1650	oc-ja	dc-mr	ap-fb	evergreen above 1000 m
<i>Desmodium pulchellum</i> (L.) Bth.	l (s)	pd	4	gro	bb/df	450-850	sp-oc	dc-fb	ap-fb	
<i>Desmodium renifolium</i> (L.) Schindl.	l	pd	3	gro	dof bb/df	800-1100	sp-nv	nv-ja	ap-fb	also grows as a deciduous herb
<i>Desmodium repandum</i> (Vahl) DC.	h	pd	3	gro	eg/pine da egf	700-1685	ag-dc	nv-fb	my-dc	open areas
<i>Desmodium triangulare</i> (Retz.) Merr.	l (s)	pd	3	gro	dof bb/df da	350-700	oc-nv	nv-ja	ap-fb	
<i>Desmodium triflorum</i> (L.) DC.	h cr	pe	4	gro wee	bb/df da	350-750	oc-ja	(ag) nv-fb	ja-dc	
<i>Desmodium triquetrum</i> (L.) DC. ssp. <i>triquetrum</i>	l (h)	ped	4	gro	mx f eg/pine often in da and sg	700-1300	oc-ja	dc-fb	ap-fb	evergreen above 1000 m
<i>Desmodium velutinum</i> (Willd.) DC. ssp. <i>velutinum</i> var. <i>velutinum</i>	s (l) (h)	pd	4	gro	dof bb/df	350-1350 mx f da	oc-nv	dc-fb	ap-fb	
<i>Diphysarium mekongense</i> Gagnep.	v	pe	2	gro	bb/df da	450-500	ag-oc	ja-fb	ja-dc	
<i>Dolichos tenuicaulis</i> (Baker) Craib ssp. <i>tenuicaulis</i>	v	pd	3	gro	bb/df	375-850	ja-fb	mr-ap	my-fb	
<i>Dumasia leiocarpa</i> Bth.	v	pe	3	gro	egf eg/pine	1250-1685	nv-dc	fb-mr	ja-dc	topotype of <i>Dunbaria longiracemosa</i> Craib
<i>Dunbaria bella</i> Prain	v	pd	3	gro	dof	375-850	oc-nv (ja)	nv-ja	my-fb	syn. = <i>Dunbaria glandulosa</i> (Dalz. & Gibs.) Prain
<i>Dunbaria fusca</i> (Wall.) Kurz	v	a or pe	3	gro	bb/df mx f da in egf	600-1100	sp-oc	dc-ja	ja-dc	
<i>Dunbaria podocarpa</i> Kurz	v	a	3	gro	mx f egf	600-1100	oc-nv	nv-ja	my-fb	
<i>Dunbaria villosa</i> (Thunb.) Wak.	v	a	3	gro	bb/df mx f	400-1050	nv-ja	dc-fb	my-mr	syn. = <i>Dunbaria subrhombica</i> (Miq.) Hemsl.
<i>Dysolobium dolichoides</i> (Roxb.) Prain var. <i>schemburgkii</i> (Gagnep.) Mare.	v	a	3	gro	da in bb/df mx f	650-850	sp-oc	nv-dc	my-ja	
<i>Dysolobium grande</i> (Wall. ex Bth.) Prain	v	a	3	gro	bb/df da	575-900	oc-nv	dc-fb	my-ja	
<i>Dysolobium pilosum</i> (Willd.) Mare.	v	a	3	gro	bb/df	500-800	ag-oc	oc-dc	my-dc	syn. = <i>Dolichovigna pilosa</i> (Willd.) Niyo.
<i>Endosamara racemosa</i> (Roxb.) Gees.	wc	pd	2	gro	bb/df	350-350	ap	fb	mr-ja	
<i>Eriosema chinense</i> Vog.	h	pd	3	gro	dof	650-850	my-jn	jn-ag	ap-dc	
<i>Erythrina stricta</i> Roxb.	t	pd	3	gro	bb/df egf eg/pine	400-1680	fb-mr	ap-my	my-fb	
<i>Erythrina suberosa</i> Roxb.	t	pd	2	gro	bb/df	350-350	fb	mr-ap	my-fb	syn. = <i>Erythrina stricta</i> Roxb. var. <i>suberosa</i> (Roxb.) Niyo. usually briefly leafless in ja, occasionally so in mr
<i>Erythrina subumbrans</i> (Hassk.) Merr.	t	pd	3	gro	mx f egf	500-1680	dc-mr	mr-ap	fb-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Flemingia lineata</i> (L.) Roxb. ex Ait f.	l (s)	pd	2	gro	bb/df	450-450	ja-fb	ap-my	fb-dc	
var. <i>glutinosa</i> Prain	(h)									
<i>Flemingia paniculata</i> Wall. ex Bth.	l	pd	2	gro	bb/df	550-550	ja-fb	mr-ap	fb-dc	
<i>Flemingia sootepensis</i> Craib	l (s)	ped	4	gro	eg/pine da dof bb/df egf	425-1450	nv-fb	dc-mr	ap-fb	topotype, often evergreen above 1000 m
<i>Flemingia strobilifera</i> (L.) R. Br. ex Ait. f. var. <i>strobilifera</i>	l	pd	3	gro	bb/df mxf	600-850	nv-ja	ja-ap	ap-fb	
<i>Grona grahamii</i> Bth.	v	pd	3	gro	dof	375-500	oc-nv	dc-ja	my-fb	syn. = <i>Nogra grahamii</i> (Bth.) Merr.
<i>Indigofera cassioides</i> Rottl. ex DC.	s	pd	3	gro	dof mxf	450-1200	jl-ag	sp-dc	ap-fb	
<i>Indigofera dosua</i> B.-H. ex D. Don	l (s)	pd	3	gro	eg/pine egf	1300-1550	sp-nv	nv-ja	my-dc	
<i>Indigofera hirsuta</i> L.	h	a	3	gro	dof	350-500	oc-nv	oc-dc	my-dc	
<i>Indigofera laxiflora</i> Craib	l	pe	3	gro	egf eg/pine	1400-1500	jl-ag	oc-dc	ja-dc	topotype
<i>Indigofera linnaei</i> Ali	h	a	3	gro	sg da	350-1100	oc-nv	dc-ja	my-fb	
<i>Indigofera squalida</i> Prain	h	pd	3	gro	dof	450-550	jn-sp	ag-oc	my-dc	
<i>Labiab purpureus</i> (L.) Sw. ssp. <i>purpureus</i>	v	pe	3	gro cul	da	350-1000	oc-dc	fb-ap	ja-dc	syn. = <i>Dolichos lablab</i> L.
<i>Lespedeza parviflora</i> Kurz	l	pd	4	gro	eg/pine dof mxf egf da	550-1525	dc-ja	mr-ap	my-ap	syn. = <i>Campylotropis parviflora</i> (Kurz) Schindl.
<i>Lespedeza pinetorum</i> Kurz	l	pe	3	gro	egf	1500-1650	ja-fb	mr-ap	ja-dc	syn. = <i>Ampylotropis pinetorum</i> (Kurz) Schindl.
<i>Macropitium atropurpureum</i> (DC.) Urb. cv. <i>siratro</i>	v	pe	3	nat	da	350-400	oc-nv	nv-dc	ja-dc	
<i>Macrotyloma uniflorum</i> (Lmk.) Verd. var. <i>uniflorum</i>	h	pe	2	int	egf	1300-1300	nv-dc	ja-fb	ja-dc	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 73.
<i>Milletia brandisiana</i> Kurz	t	pd	4	gro	bb/df	350-600	nv-mr	(jn) ag-oc	ap-dc	
<i>Milletia caerulea</i> Grah. ex Baker	s (wc)	pd	3	gro	bb/df mxf	400-825	ap-my	jl-oc	ap-fb	
<i>Milletia extensa</i> (Bth.) Bth. ex Baker	wc	pd	4	gro	bb/df mxf	350-1100	mr-ap	ag-nv	ap-ja	
<i>Milletia</i> aff. <i>glaucescens</i> Kurz var. <i>glaucescens</i>	wc	pe	2	gro	egf	1000-1000	my	?	ja-dc	
<i>Milletia latifolia</i> Dunn	t	pde	4	gro	dof bb/df	350-500	mr	jl-ja	mr-ja	topotype, leaves often falling in February, q. v. <i>Milletia pendula</i> Bth. ex Baker
<i>Milletia macrostachya</i> Coll. & Hemsl. var. <i>macrostachya</i>	t	pd	3	gro	bb/df streams	600-750	nv-fb	oc-nv	fb-nv	
<i>Milletia pachycarpa</i> Bth.	wc	pd	3	gro	eg/pine egf	1250-1650	mr-ap	sp-oc	ap-fb	
<i>Milletia xylocarpa</i> Miq.	t	pd	3	gro	dof bb/df egf eg/pine	375-1500	mr-ap	sp-nv	ap-ja	syn. = <i>Milletia pubinervis</i> Kurz
<i>Mucuna bracteata</i> A. DC.	v	pe	4	gro	bb/df mxf egf	375-1650	nv-fb	jn-ji	ja-dc	topotype of <i>Mucuna brevipes</i> Craib
<i>Mucuna macrocarpa</i> Wall.	wc	pe	4	gro	eg/pine mxf egf da	450-1650	fb-mr	my-sp	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Mucuna pruriens</i> (L.) A. DC. var. <i>pruriens</i>	v	pe	3	gro	egf	1100–1300	nv–ja	dc–fb	ja–dc	
<i>Ormosia sumatrana</i> (Miq.) Prain	t	pe	2	gro	egf	1000–1200	?	ag–nv	ja–dc	
<i>Pachyrrhizus erosus</i> (L.) Urb.	v	a	3	cul	eg/pine bb/df mx f sg	350–1525	sp–oc	nv–dc	my–dc	cultivated and often escaped
<i>Phaseolus vulgaris</i> L.	v	pe	3	gro cul int	bb/df	600–750	sp–nv	nv–ja	ja–dc	
<i>Phylacium majus</i> Coll. & Hemsl.	v	pe	3	gro	bb/df egf da	400–1350	oc–ja	dc–mr	ja–dc	
<i>Pterocarpus macrocarpus</i> Kurz	t	pd	4	gro	bb/df, egf	350–1400	mr–ap	sp–nv (mr)	ap–ja	rare in egf
<i>Pueraria alopecuroides</i> Craib	v	pe	2	gro	da/sg dof	500–1325	ja–fb	nv–dc	ja–dc	
<i>Pueraria imbricata</i> Maes.	v	pd	3	gro	eg/pine da bb/df mx f	750–1550	sp–nv	nv–ja	my–dc	fruits described: Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 73 and fig. 2, topotype
<i>Pueraria mirifica</i> A. S. & Suwat.	wc	pd	2	gro	bb/df	650–650	ja–fb	ap–my	ap–dc	
<i>Pueraria phaseoloides</i> (Roxb.) Bth. var. <i>phaseoloides</i>	v	pe	3	gro	dof bb/df mx f	450–1075	sp–nv	nv–ja	ja–dc	
<i>Pueraria phaseoloides</i> (Roxb.) Bth. var. <i>subspicata</i> (Bth.) Maes.	v	pe	3	gro	da	350–350	oc–nv	ja–fb	ja–dc	
<i>Pueraria stricta</i> Kurz	s sc	pd	4	gro	eg/pine da dof bb/df mx f egf	400–1650	jl–dc	ja–fb	my–fb	topotype of <i>Pueraria siamica</i> Craib
<i>Pueraria wallichii</i> DC.	s sc	pd	4	gro	dof bb/df	500–1400	oc–nv	dc–fb	my–fb	
<i>Pycnospora lutescens</i> (Poir.) Schindl.	h	a	3	gro	dof	375–850	sp–nv	oc–dc	my–dc	
<i>Rhynchosia bracteata</i> Bak.	v	pe	3	gro wee	da	350–400	dc–ja	ja–fb	ja–dc	
<i>Shuteria hirsuta</i> Baker	v	a	3	gro	bb/df egf da	575–1200	nv–ja	fb–mr	jl–ap	
<i>Shuteria involucreata</i> (Wall.) Wight & Arn. var. <i>involucreata</i>	v	a	3	gro	eg/pine egf da	825–1685	oc–ja	fb–mr	jl–mr	syn. = <i>Shuteria suffulta</i> Wall. ex Bth. var. <i>sinensis</i> (Helms.) Niyo.
<i>Smithia ciliata</i> Roy.	v	pe	2	gro	egf	1600–1600	oc–nv	nv–dc	ja–dc	
<i>Spatholobus parviflorus</i> (Roxb.) O.K.	wc	pd	4	gro	dof bb/df sg	400–1350	jl–ag	nv–fb	my–fb	
<i>Spatholobus spirei</i> Gagnep.	wc	pe	2	gro	dof bb/df	550–825	fb	ap–my	ja–dc	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989) 182.
<i>Spatholobus suberectus</i> Dunn	wc	pe	2	gro	eg/pine egf	825–1685	my	dc–ja	ja–dc	topotype of <i>Spatholobus floribundus</i> Craib
<i>Sylosanthus sundaica</i> Taub.	h	a	3	gro nat wee	sg da	350–500	ag–nv	sp–dc	my–dc	
<i>Tephrosia kerrii</i> Drum. & Craib	l (h)	pd	3	gro	egf	1150–1650	oc–nv	dc–ja	jn–mr	topotype
<i>Tephrosia purpurea</i> (L.) Pers. ssp. <i>purpurea</i>	h	pe	3	gro	sg	350–600	oc–dc	dc–ja	ja–dc	
<i>Teyleria barbata</i> (Craib) Lack. ex Maes	v	pe	2	gro	egf	1050–1250	ag–sp	nv–ja	ja–dc	topotype
<i>Uraria campanulata</i> (Wall. ex Bth.) Gagnep.	t (s, h)	pd	3	gro	dof bb/df da	450–1350	oc–nv	nv–ja	my–ja	
<i>Uraria confertifolia</i> Wall.	l (h)	pd	2	gro	dof bb/df	400–650	jn–sp	sp–nv	ap–fb	
<i>Uraria lacei</i> Craib	h	a	3	gro	dof bb/df	450–800	oc–dc	dc–ja	ap–fb	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Uraria lagopodioides</i> (L.) Desv. ex DC.	l (h)	pd	3	gro wee	dof bb/df	350-700	jn-nv	ag-nv	ap-fb	
<i>Uraria poilanei</i> Dy Phon	l (s)	pe	2	gro	streams in bb/df	650-700	oc-dc	ja-fb	ja-dc	
<i>Vigna dalzelliana</i> (O.K.) Verd.	v (h)	a	3	gro	da bb/df	500-1275	sp-nv	oc-dc	my-dc	
<i>Vigna dalzelliana</i> var. <i>dalzelliana</i>	v	pd	3	gro	dof bb/df	375-950	oc-nv	nv-ja	my-fb	syn. = <i>Dolichos grahamianus</i> (Wight & Arn.) Niyo.
<i>Vigna radiata</i> (L.) Wilez. var. <i>sublobata</i> (Roxb.) Verd.	v	pe	2	gro	eg/pine da egf	1575-1575	oc	nv-dc	ja-dc	
<i>Vigna umbellata</i> (Willd.) Ohwi & Oha.	v	a	3	gro wee	da	825-1550	oc-ja	dc-mr	jl-mr	
<i>Vigna umbellata</i> var. <i>umbellata</i>	v	a	3	gro	bb/df	450-900	sp-nv	oc-dc	ap-fb	
<i>Vigna vexillata</i> (L.) A. Rich. var. <i>vexillata</i>	v	a	3	gro	bb/df	450-900	sp-nv	oc-dc	ap-fb	
<i>Zornia gibbosa</i> Span.	h	a	3	gro wee	dof bb/df	350-600	ag-nv	sp-dc	my-dc	
Rosaceae										
<i>Agrimonia nepalensis</i> D. Don	h	a	2	gro wee	egf	1475-1475	oc-nv	nv-dc	my-dc	
<i>Agrimonia nepalensis</i> var. <i>nepalensis</i>										
<i>Eriobotrya bengalensis</i> (Roxb.) Hk. f.	t	pe	3	gro	mx f egf eg/pine	600-1450	ag-fb	fb-ap	ja-dc	
<i>Eriobotrya bengalensis</i> var. <i>bengalensis</i>										
<i>Eriobotrya bengalensis</i> (Roxb.) Hk. f.	t	pe	3	gro	egf	1000-1650	ag-nv	fb-ap (sp)	ja-dc	
<i>Eriobotrya bengalensis</i> (Roxb.) Hk. f.	t	pe	3	gro	bb/df	350-850	ap-my	mr-my	ja-dc	topotype of <i>Parinarium albidum</i> Craib
<i>Parinari anamensis</i> Hance	t	pe	3	gro	mx f egf	350-1400	jn-nv	dc-my	ja-dc	
<i>Prunus arborea</i> (Bl.) Kalk. var. <i>montana</i> (Hk. f.) Kalk.	t	pe	3	gro	mx f egf	350-1400	jn-nv	dc-my	ja-dc	
<i>Prunus cerasoides</i> D. Don	t	pd	3	gro	da egf	1050-1685	dc-ja	mr-my	ap-dc	topotype of <i>Prunus hosseusii</i> Diels, often planted
<i>Prunus javanica</i> (T. & B.) Miq.	t	pe	2	gro	egf	1050-1150	my	jn-ji	ja-dc	
<i>Prunus walllichii</i> Steud.	t	pe	2	gro	egf	1400-1500	sp-oc	jn-ag	ja-dc	
<i>Rubus alceifolius</i> Poir.	v	pe	2	gro	bb/df da in egf	650-1350	l-sp	sp-nv	ja-dc	
<i>Rubus blepharoneurus</i> Card.	v	pe	4	gro	eg/pine egf often in da sg	1100-1685	my-ag	jl-sp	ja-dc	
<i>Rubus ellipticus</i> J. E. Sm. <i>forma obcordatus</i> Franch.	v	pe	3	gro	da egf	1200-1650	dc-ja	fb-mr	ja-dc	open places
<i>Rubus sorbifolius</i> Maxim.	s (v)	pe	2	gro	da	1250-1250	oc-dc	nv-dc	ja-dc	
<i>Sorbus verrucosa</i> (Deene.) Rehd. var. <i>verrucosa</i>	t	pd	1	epl	egf	1550-1650	ja-fb	jl-ag	fb-dc	topotype of <i>Pyrus granulosa</i> Bertol. var. <i>siamensis</i> Craib, changing leaves December-January

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Saxifragaceae										
<i>Dichroa febrifuga</i> Lour.	s l sc	pe	3	gro	streams in mx f egf	700–1550	ap-my	sp-oc	ja-dc	mostly along streams, sometimes in Hydrangeaceae
Grossulariaceae (Escalloniaceae)										
<i>Itea puberula</i> Craib	t	pe	3	gro	egf	1025–1450	ag-sp	nv-ja	ja-dc	topotype
<i>Itea riparia</i> Coll. & Hensl.	s	pe	2	gro	mx f streams	500–650	ap	jl-ag	ja-dc	
<i>Polyosma elongata</i> Gedd.	t	pe	2	gro	egf	1450–1450	jn-ji	dc-ja	ja-dc	
Droseraceae										
<i>Drosera burmannii</i> Vahl	h	a	3	car gro	dof	500–750	nv-dc	dc-ja	jn-dc	carnivorous
<i>Drosera peltata</i> J. E. Sm. ex Willd.	h	pd	3	gro car	eg/pine	1600–1650	my-ji	jl-ag	jn-nv	carnivorous
Rhizophoraceae										
<i>Carallia brachiata</i> (Lour.) Merr.	t	pe	3	gro	mx f egf	425–1685	dc-fb	(mr-ap) my-jn	ja-dc	often along streams
Combretaceae										
<i>Anogeissus acuminata</i> (Roxb. ex DC.) Guill. & Perr.	t	pd	3	gro	bb/df mx f	350–975	ja-mr	ap-my	ap-fb	
<i>Calycoperis floribunda</i> (Roxb.) Lmk.	wc sc	pd	3	gro	bb/df	350–800	ja-fb	my-jn	my-fb	
<i>Combretum deciduum</i> Coll. & Hensl.	t (wc)	pd	2	gro	bb/df	400–600	ja-fb	ap-my	ap-fb	
<i>Combretum griffithii</i> Heur. & M.-A.	wc	pd	3	gro	bb/df mx f	500–700	fb	mr-ap	ap-fb	
<i>Combretum latifolium</i> Bl.	wc	pd	3	gro	bb/df egf	375–750	dc-fb	my-jn	ap-fb	
<i>Combretum procursum</i> Craib	wc	pd	3	gro	bb/df mx f mx/bb	550–950	my	oc	ap-ja	
<i>Combretum punctatum</i> Bl. ssp. <i>punctatum</i>	wc	pe	3	gro	mx f egf	825–1450	mr-ap	ap-jn	ja-dc	
<i>Combretum punctatum</i> Bl. ssp. <i>squamosum</i> (Roxb. ex G. Don) Exell	wc	pe	3	gro	egf	1350–1685	my-jn	dc-ja	ja-dc	
<i>Quisqualis indica</i> L. var. <i>indica</i>	wc	pd	2	gro nat	bb/df mx f egf	450–1000	ap	jl-ag	ap-fb	
<i>Terminalia alata</i> Hey. ex Roth	t	pd	3	gro	dof bb/df	350–900	my-jn	ag-mr	ap-fb	
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	t	pd	3	gro	bb/df mx f	350–1150	mr-ap	oc-fb	mr-ja	
<i>Terminalia chebula</i> Retz. var. <i>chebula</i>	t	pd	3	gro	dof bb/dg mx f	350–850	mr-ap	nv-fb	mr-ja	
<i>Terminalia glaucifolia</i> Craib	t	pd	2	gro	dof bb/df	325–1000	jl-ag	sp-nv	mr-ja	topotype
<i>Terminalia mucronata</i> Craib & Hutch.	t	pd	4	gro	bb/df mx f egf	450–1250	ap	jl-ja	ap-fb	topotype
<i>Terminalia triptera</i> Stapf	t	pd	3	gro	dof bb/df	450–600	jl-ag	nv-ja	ap-fb	
Myrtaceae										
<i>Decaspermum parviflorum</i> (Lmk.) A. J. t (l) Scott ssp. <i>parviflorum</i>	t (l)	pe	3	gro	egf	1150–1575	mr-my	jl-ag (oc)	ja-dc	
<i>*Eugenia albiflora</i> Duth. ex Kurz	t	pe	3	gro	eg/pine mx f egf da	800–1525	fb-ap	my-ag	ja-dc	

**Syzygium* is not accepted in this enumeration

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Eugenia cinerea</i> Kurz	t	pe	3	gro	streams in mxf egf	900–1200	nv–dc	fb–mr	ja–dc	mostly along streams
<i>Eugenia claviflora</i> Roxb.	t	pe	2	gro	egf	1250–1350	fb–mr	my–jn	ja–dc	
<i>Eugenia cumini</i> (L.) Druce	t (l)	pd	3	gro	dof bb/df	375–650	mr–ap	jn–jl	ap–fb	
<i>Eugenia formosa</i> Wall.	t	pe	4	gro	streams bb/df mxf	425–650	mr–ap	jl–ag	ja–dc	
<i>Eugenia fruticosa</i> (DC.) Roxb.	t	pe	2	gro	eg/pine dof bb/df	350–1525	mr–ap	my–jl	ja–dc	
<i>Eugenia aff. globiflora</i> Craib	t	pe	2	gro	egf	1300–1400	ap–my	?	ja–dc	
<i>Eugenia grata</i> Wight	t	pe	4	gro	streams dof bb/df	400–900	mr–ap	jn–jl	ja–dc	
<i>Eugenia megacarpa</i> Craib	t	pe	3	rhe gro	streams mxf egf	650–1200	ja–fb	jl–oc	ja–dc	
<i>Eugenia oblata</i> Roxb. var. <i>oblata</i>	t	pe	3	gro	streams dof bb/df	550–700	mr	my–ja	ja–dc	
<i>Eugenia tetragona</i> Wight	t	pe	2	gro	eg/pine da egf	850–1685	nv–dc	mr–ap (oc)	ja–dc	topotype of <i>Eugenia subviridis</i> Craib
<i>Tristanopsis burmanica</i> (Griff.) Wils. & Wat. var. <i>rufescens</i> (Hance) Parn. & Lug.	t (l)	pd	5	gro	dof	550–850	fb–mr	ap–my	ap–fb	
Lecythidaceae										
<i>Careya arborea</i> Roxb.	t	pd	3	gro	dof bb/df	350–850	mr–ap	my–jn	my–fb	
Melastomataceae										
<i>Melastoma malabathricum</i> L. ssp. <i>malabathricum</i>	l (s)	pe	4	gro	da/sg in dof bb/df mxf eg/pine	350–1685	mr–my	my–jl	ja–dc	
<i>Melastoma malabathricum</i> L. ssp. <i>normale</i> (D. Don) K. Meyer	l (s)	pe	3	gro	da/sg in egf	900–1500	mr–jl	jn–ag	ja–dc	basionym = <i>Melastoma normale</i> D. Don
<i>Memecylon plebeium</i> Kurz	l (t)	pe	3	gro	dof bb/df mxf eg/pine	400–1650	my–sp	dc–my	ja–dc	topotype of syntypes of <i>Memecylon plebeium</i> Kurz var. <i>siamense</i> Craib and <i>Memecylon plebeium</i> Kurz var. <i>symplocinum</i> Craib
<i>Memecylon scutellatum</i> (Lour.) Naud.	l (s)	pe	3	gro	dof	400–700	ap–jn	ag–fb	ap–fb	
<i>Osbeckia chinensis</i> L. var. <i>chinensis</i>	h	a	3	gro	dof	650–900	oc–dc	nv–ja	jn–ja	
<i>Osbeckia stellata</i> Ham. ex Ker-Gawl. var. <i>crinita</i> (Bth. ex Naud.) C. Han.	h (s)	pd	4	gro	da egf	1200–1685	ag–oc	nv–ja	my–fb	topotype of <i>Osbeckia paludosa</i> Craib, <i>Osbeckia pulchra</i> Gedd., and <i>Osbeckia pulchra</i> Gedd. var. <i>rubra</i> Craib
<i>Osbeckia stellata</i> Ham. ex Ker-Gawl. var. <i>marginulata</i> (Cl.) C. Han.	s (h)	pd	3	gro	streams bb/df	500–650	oc–nv	nv–ja	my–ja	topotype of <i>Osbeckia racemosa</i> Craib
<i>Sonerila erecta</i> Jack	h	a	3	gro	dof bb/df mxf egf eg/pine da	500–1375	sp–nv	nv–ja	my–ja	topotype of <i>Sonerila niseitiana</i> Craib, syn. = <i>Sonerila tenera</i> Roy. var. <i>tenera</i>
<i>Sonerila griffithii</i> Cl.	h	pd	3	gro	da egf eg/pine	1450–1650	jl–ag	ag–sp	my–nv	topotype of <i>Sonerila kerrii</i> Craib & Stapf
Lythraceae										
<i>Ammannia baccifera</i> L.	h	a	3	gro wee	streams dof bb/df	350–550	jl–oc	sp–ja	jn–fb	
<i>Lagerstroemia cochinchinensis</i> Pierre var. <i>ovalifolia</i> Furt. & Mont.	t	pd	4	gro	da bb/df mxf	375–1000	jl–sp	oc–dc	ap–ja	topotype of paratype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Lagerstroemia macrocarpa</i> Kurz	t (l)	pd	3	gro	dof bb/df	350-950	mr-ap	jl-dc	ap-fb	topotype of <i>Lagerstroemia hossei</i> Koeh. and <i>Lagerstroemia intermedia</i> Koeh. var. <i>oblonga</i> Craib
<i>Lagerstroemia venusta</i> Wall. ex Cl.	t	pd	3	gro	bb/df mx	450-850	sp-oc	oc-dc	ap-fb	topotype of <i>Lagerstroemia colletii</i> Craib
<i>Lagerstroemia villosa</i> Wall. ex Kurz	t	pd	3	gro	bb/df mx	350-650	mr-my	ag-nv	ap-fb	
<i>Rotala diversifolia</i> Koeh.	h	a	2	aqu gro	streams dof	550-550	ja-fb	mr-my	jn-my	topotype
<i>Rotala mexicana</i> Cham. & Schl. var. <i>chamissoana</i> Koeh. <i>forma minima</i> Koeh.	h	a	2	aqu gro	streams bb/df	550-550	oc-dc	nv-ja	my-ja	
<i>Rotala rotundifolia</i> (Ham. ex Roxb.) Koeh.	h	a	2	gro	marsh in dof	550-550	oc-dc	nv-ja	my-dc	
Crypteroniaceae										
<i>Crypteronia paniculata</i> Bl. var. <i>paniculata</i>	t	pe	1	gro	bb/df mx/eg/pine	620-1650	dc-ja	fb-mr	ja-dc	
Sonneratiaceae										
<i>Duabanga grandiflora</i> (Roxb ex DC.) Walp.	t	pe	3	gro	mx/egf	650-1450	ja-mr	ap-my (nv-dc)	ja-dc	
Onagraceae										
<i>Ludwigia adscendens</i> (L.) Hara	h	a	3	aqu wee	ponds streams in dof bb/df eg/pine mx/da	350-600	sp-nv	nv-ja	my-ja	
<i>Ludwigia hyssopifolia</i> (G. Don) Exell	h	a	4	often aqu gro wee	streams marsh da dof tb/df mx/egf	500-1350	ja-dc	ja-dc	my-ja	
Passifloraceae										
<i>Adenia cardiophylla</i> (Mast.) Engl.	v	pe	2	gro	egf	900-1100	jn-jl	oc-nv	ja-dc	
<i>Adenia heterophylla</i> (Bl.) Kds. ssp. <i>heterophylla</i> var. <i>heterophylla</i>	v	pe	2	gro	mx/da	725-725	ja-mr	mr-my	ja-dc	
<i>Adenia pinnaeata</i> (Craib) Craib var. <i>pinnaeata</i>	v	pd	3	gro epl	bb/df mx/da	450-925	jl-ag	sp-nv	jn-dc	topotype
<i>Passiflora foetida</i> L.	v	pe	3	gro nat wee int	da	350-1650	jl-oc	ag-nv	ja-dc	
<i>Passiflora siamica</i> Craib	v	pe	3	gro	da eg/pine	950-1650	ap-jn	ag-sp	ja-dc	topotype of paratype
Cucurbitaceae										
<i>Coccinia grandis</i> (L.) Voigt	v	a	4	gro	da	350-500	jl-oc	nv-fb	my-fb	
<i>Cucumis cf. hystrix</i> Chakr.	v	a	3	gro	da egf	1050-1300	ag-sp	dc-ja	my-fb	
<i>Gomphogyne heterosperma</i> (Wall.) Kurz	v	a	3	gro	egf	1100-1575	sp-oc	oc-nv	my-dc	
<i>Gynopetalum chinense</i> (Lour.) Merr.	v	a	3	gro	da	350-1200	jl-ag	ag-sp	my-dc	syn. = <i>Hemsleyana heterosperma</i> (Wall.) C. Jeff.

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Gynostemma pentaphyllum</i> (Thunb.) Mak.	v	pe	3	gro	bb/df egf	600–1650	jn-sp	ag-oc	ja-dc	topotype of <i>Gynostemma siamensis</i> Craib
<i>Hodgsonia heteroclita</i> (Roxb.) Hk.f. & Th.	v	pe	2	gro	bb/df mxf	650–650	jl-ag	?	ja-dc	
<i>Luffa cylindrica</i> (L.) M. J. Roem.	v	a	3	gro wee	da	350–700	oc-ja	mr-ap	oc-ja	
<i>Momordica charantia</i> L.	v	a	4	gro wee	da	350–400	oc-dc	nv-fb	my-dc	
<i>Mukia maderaspatana</i> (L.) M.J. Roem.	v	a	3	gro	da	400–1600	my-nv	jn-dc	my-dc	
<i>Neolamproloma angustipetala</i> (Craib) Hutch.	v	pe	2	gro	bb/df	425–425	jl-ag	?	ja-dc	topotype, basionym = <i>Gynostemma angustipetala</i> Craib, Maxwell: Nat. Hist. Bull. Siam Soc. 39:1 (1991) 76; syn. = <i>Alsomitra angustipetala</i> (Craib) Craib
<i>Neolamproloma integrifoliola</i> (Cogn.) Hutch.	v	pe	2	gro	egf	1000–1000	nv-dc	nv-dc	ja-dc	
<i>Neolamproloma sarcophylla</i> (Wall.) Hutch.	v	pe	2	gro bb/df mxf	streams in	450–850	nv-dc	fb-mr	ja-dc	
<i>Solena amplexicaulis</i> (Roxb.) Gandhi	v	pd	3	gro	bb/df mxf egf	375–1650	ap-sp	my-nv	my-dc	
<i>Thladiantha hookeri</i> Cl.	v	a	3	gro	egf	1050–1450	jn-nv	jl-sp	my-dc	
<i>Trichosanthes ovigera</i> Bl.	v	pe	3	gro	egf da	1000–1450	ag-oc	dc-ja	ja-dc	
<i>Trichosanthes rubriflos</i> Thor. ex Cay.	v	a	3	gro	da	375–1300	my-ag	ag-oc	my-dc	
<i>Trichosanthes smilacifolia</i> C. Y. Lu	v	a	2	gro	egf da	900–1350	jn-ag	?	my-dc	
<i>Trichosanthes tricuspidata</i> Lour.	v	a	3	gro	da	350–400	my-ag	sp-oc	my-dc	
<i>Zehneria marginata</i> (Bl.) Kera.	v	a	3	gro	egf	1000–1450	ag-oc	sp-nv	my-ja	
<i>Zehneria mayorensis</i> (Wight & Arn.) Arn.	v	a	3	gro	egf da	1200–1600	ag-nv	oc-ja	my-ja	
<i>Zehneria wallichii</i> (Cl.) C. Jeff.	v	a	3	gro	bb/df mxf egf	350–1100	jl-nv	ag-nv	my-dc	
Begoniaceae										
<i>Begonia acetosella</i> Craib	h	pe	3	gro	stream in mxf egf	925–1450	jn (fb-mr)	fb-my	ja-dc	topotype, q.v. <i>Begonia aptera</i> Bl.
<i>Begonia integrifolia</i> Dalz.	h	pd	3	gro	mxf egf	600–950	jl-ag	ag-oc	my-dc	
<i>Begonia laciniata</i> Roxb. var. <i>laciniata</i>	h	pe	3	gro epi	egf	1550–1650	jl-sp	ag-oc	ja-dc	
<i>Begonia martabanica</i> A. DC.	h	pd	3	gro	mxf streams	650–750	jl-sp	ag-oc	my-dc	
<i>Begonia siamensis</i> Gagnep.	h	pe	3	gro	streams in mxf egf	825–1350	ag-mr	nv-ap	ja-dc	topotype
<i>Begonia</i> aff. <i>sinensis</i> A. DC.	h	pd	3	epl	rocks and streams in mxf egf/pine	500–1300	ag-oc	sp-nv	my-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Begonia yunnanensis</i> Lev.	h	pd	3	gro epi epl	rocks in bb/df mx f egf eg/pine	500–1300	ag–oc	sp–nv	jn–dc	topotype of <i>Begonia sootensis</i> Craib
Datiscaceae										
<i>Tetrameles nudiflora</i> R. Br. ex Benn.	t	pd	2	gro	bb/df mx f egf	350–1100	mr–ap	ap–my	my–fb	often leafless in December
Aizoaceae										
<i>Glinus oppositifolius</i> (L.) A. DC.	h	a	3	gro wee	da	350–650	my–sp	jn–oc	my–dc	
<i>Mollugo pentaphylla</i> L.	h	a	3	gro wee	da	350–700	my–sp	jn–dc	ap–dc	
Umbelliferae										
<i>Cenella asiatica</i> (L.) Urb.	h	pe	4	gro wee	bb/df mx f egf	425–1350	jn–oc	jl–nv	ja–dc	
<i>Hydrocotyle siamensis</i> Craib	h cr	pd	3	gro	egf eg/pine da	1400–1685	jl–oc	ag–nv	jn–dc	topotype
<i>Oenanthe javanica</i> (Bl.) DC.	h	a	2	gro	marsh in da	1350–1350	jl–ja	ag–fb	my–dc	moist da or marshes
<i>Seseli siamicum</i> Craib	h	pd	3	gro	dof	450–900	ag–dc	oc–ja	jn–ja	topotype
Araliaceae										
<i>Aralia montana</i> Bl.	l	pd	3	gro	da in dof bb/df mx f egf	525–1300	mr–dc	ag–mr	ap–fb	often leafless February–April
<i>Brassiaopsis ficifolia</i> Dunn	h	pe	2	gro	streams in egf	1200–1450	dc–ja	fb–mr	ja–dc	
<i>Brassiaopsis glomerulata</i> (Bl.) Regel	t	pe	3	gro	mx f and egf along streams	650–1500	ap–sp	nv–ja (mr)	ja–dc	
<i>Heteropanax fragrans</i> (Roxb. ex DC.) Seem.	t	pd	3	gro	bb/df eg/pine da sg	550–1450	ja–mr	(fb) mr–ap	my–dc	
<i>Macropanax dispersum</i> (Bl.) O.K.	t (s)	pe	2	gro	egf	1100–1500	sp–nv	dc–fb	ja–dc	
<i>Schefflera bengalensis</i> Gamb.	s sc	pe	4	epl epl	dof bb/df streams egf	375–1650	fb–my	ap–jl	ja–dc	
<i>Schefflera pueckleri</i> (C. Koch) Frod.	t (s)	pe	2	epl str	egf eg/pine	1050–1425	jn–jl	oc–ap	ja–dc	
<i>Trevesia palmaria</i> (DC.) Vis.	l	pe	3	gro	eg/pine da mx f egf	650–1525	ja–fb	ap–jn	ja–dc	
Alangiaceae										
<i>Alangium barbatum</i> (R. Br.) Baill. var. <i>barbatum</i>	t	pd	3	gro	mx f egf	725–1450	mr–ap	jn–jl	ap–fb	
<i>Alangium chinense</i> (Lour.) Harms	t	pe	3	gro	streams in bb/df mx f egf	375–1100	ap–my	jn–ag	ja–dc	
<i>Alangium kurzii</i> Craib	t	pd	3	gro	mx f egf	675–1400	ap–my	jl–sp	my–mr	
<i>Alangium salvifolium</i> (L.f.) Wang. ssp. <i>hexapetalum</i> (Lmk.) Wang.	t	pd	3	gro	bb/df	350–800	mr	ap–my	ap–fb	
Cornaceae										
<i>Mastixia euonymoides</i> Prain	t	pe	2	gro	egf	1000–1400	my–jn	oc–nv	ja–dc	
Nyssaceae										
<i>Nyssa javanica</i> (Bl.) Wang.	t	ped	4	gro	mx f egf streams	550–1400	fb–mr (ap)	jn–oc	ap–mr	trophophyllous, topotype of <i>Nyssa bifida</i> Craib, evergreen above 1000 m

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Caprifoliaceae										
<i>Lonicera ferruginea</i> Rehd.	v	pe	2	gro	egf da	1300–1500	mr–ap	mr–my	ja–dc	
<i>Lonicera siamensis</i> Gamb.	wc	pe	2	gro	mxg egf	675–1400	fb–ap	?	ja–dc	
<i>Sambucus javanica</i> Reinw. ex Bl. ssp. <i>javanica</i>	h (l) (s)	pe	4	gro	streams in bb/df mxg egf	600–1400	fb–nv	my–ja	ja–dc	
<i>Viburnum cylindricum</i> Ham. ex D. Don	t (l,s)	pd	3	gro	egf	1400–1500	oc–ja	nv–fb	my–fb	
<i>Viburnum inopinatum</i> Craib	l	ped	3	gro	dof bb/dg mxg egf	550–1125	sp–ja	nv–mr	ap–fb	tropophyllous, topotype
Rubiaceae										
<i>Aidia yunnanensis</i> (Hutch.) Yaha.	t	pe	2	gro	egf	1400–1675	mr–ap	fb–mr	ja–dc	
<i>Anthocephalus chinensis</i> (Lmk.) A. Rich. ex Walp.	t	pd	2	gro	mxg sg	600–750	jl–sp	nv–ja	mr–dc	
<i>Aphaenandra uniflora</i> (Wall. ex G. Don) Brem.	h cr	pd	3	gro	dof bb/df mxg	350–900	jl–ag	ag–oc	my–dc	
<i>Argostemma ebracteolatum</i> Gedd.	h	a	3	epl	rocks streams in egf	1125–1575	jl–jl	sp–oc	jl–nv	topotype of <i>Argostemma pubescens</i> Gedd.
<i>Argostemma khasianum</i> Cl.	h	a	2	gro	rocks streams mxg	675–675	jl–sp	ag–oc	jl–nv	
<i>Argostemma verticillatum</i> Wall.	h	pd	2	epl	rocks streams in mxg egf	600–1200	jl–ag	ag–oc	my–nv	
<i>Borreria alata</i> (Aubl.) DC.	h	a	4	gro wee nat	eg/pine da	350–1685	jl–sp	ag–nv	my–dc	
<i>Borreria brachystema</i> (R. Br. ex Bth.) Valet.	h	a	3	gro	dof	400–800	sp–oc	oc–nv	my–nv	
<i>Borreria laevis</i> (Lmk.) Griseb.	h	a	4	gro wee nat	eg/pine da	350–1650	jl–sp	ag–nv	my–dc	
<i>Borreria repens</i> DC.	h	a	3	gro wee	dof mxg open egf eg/pine	400–1550	ag dc	sp–ja	my–dc	
<i>Canthium glabrum</i> Bl.	t	pe	2	gro	egf	900–1050	oc–ap	dc–mr	ja–dc	
<i>Canthium parvifolium</i> Roxb.	l,s (t)	pe	3	gro	bb/df mxg egf	500–1650	mr–jn	jl–ja	ja–dc	also grows as a shrub
<i>Canthium umbellatum</i> Wight	l	pe	3	gro	streams in dof bb/df eg/dg egf	400–1300	mr–my	jl–ag	ja–dc	
<i>Catunaregam longispina</i> (Roxb. ex Link) Tirv.	t (l)	pd	3	gro	dof	350–600	ap–my	oc–dc	my–mr	
<i>Catunaregam spathulifolia</i> Tirv.	l	pd	3	gro	dof bb/df	450–900	my–jn	ag–ja	ap–fb	
<i>Ceriscoides sessiliflora</i> (Kurz) Tirv.	l	pd	3	gro	dof bb/df	350–900	my–jn	ag–nv	ap–fb	syn. = <i>Catunaregam tomentosa</i> (Bl. ex DC.) Tirv.
<i>Ceriscoides turgida</i> (Roxb.) DC.	l	pd	2	gro	dof	375–375	ap–my	sp–oc	my–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cinchona pubescens</i> Vahl	l	pe	3	gro int cul	egf	1050–1050	jn–nv	ag–my	ja–dc	bark medicinal
<i>Dioecrescis erythrocblada</i> (Kurz) Tirv.	l	pd	2	gro	dof	350–500	ap–my	fb–jn	my–ja	basionym = <i>Gardenia erythrocblada</i> Kurz
<i>Duperrea pavetifolia</i> (Kurz) Pit.	l (s)	pe	3	gro	mx f egf streams	575–1125	my–jl	sp–dc	ja–dc	
<i>Fagerlindia sinensis</i> (Lour.) Tirv.	wc	pe	2	gro	bb/df	350–350	mr–ap	oc–nv	ja–dc	<i>vide Randia crassispina</i> Gedd.
<i>Gardenia obtusifolia</i> Roxb. ex Kurz	l	pd	3	gro	dof	400–750	mr–my	sp–mr	my–fb	
<i>Gardenia sootepensis</i> Hutch.	t	pd	3	gro	dof bb/df mx f	375–900	ap–my	jl–sp	my–mr	topotype
<i>Geophila repens</i> (L.) I.M. John.	h cr	pe	3	gro	mx f egf	650–1100	jn–jl	oc–dc	ja–dc	
<i>Haldina cordifolia</i> (Roxb.) Rids.	t	pd	1	gro	dof	500–500	jn–jl	sp–oc	my–fb	
<i>Hedyotis auricularia</i> L.	h	a	3	gro	mx f egf da	750–1375	jn–oc	ag–nv	my–dc	
<i>Hedyotis coronaria</i> (Kurz) Craib	h	pd	3	gro	bb/df mx f	750–950	ag–sp	sp–nv	my–dc	
<i>Hedyotis corymbosa</i> (L.) Lmk.	h	a	4	gro wee	da	350–1650	jl–oc	ag–nv	my–dc	
<i>Hedyotis diffusa</i> Willd.	h	a	3	gro wee	da	350–600	ja–dc	ja–dc	ja–dc	
<i>Hedyotis gracilipes</i> (Craib) Fuku. var. <i>gracilipes</i>	h	a	3	gro	dof streams	350–350	jl–nv	ag–nv	my–dc	
<i>Hedyotis lindleyana</i> Hk. ex Wight & Arn.	h	a	2	gro	egf eg/pine	1350–1525	jl–nv	ag–nv	my–dc	meadows, wet places
<i>Hedyotis nalampooni</i> Fuku.	h	a	3	gro	dof egf eg/pine	475–1600	sp–nv	oc–ja	my–fb	topotype, q.v. <i>Hedyotis nalampooni</i> Fuku.
<i>Hedyotis ovatifolia</i> Cav.	h	a	3	gro	dof bb/df	450–850	ag–nv	sp–ja	jn–fb	
<i>Hedyotis pahompokae</i> Fuku.	h	a	3	gro	eg/pine	1575–1600	nv–dc	dc–ja	my–fb	q.v. <i>Hedyotis nalampooni</i> Fuku.
<i>Hedyotis pinifolia</i> Wall. ex G. Don	h	a	3	gro	dof	400–850	ag–oc	sp–nv	jn–dc	
<i>Hedyotis quadrilobularis</i> Thw.	h	a	2	gro	egf marsh	1350–1350	ja–fb	fb–ap	my–dc	
<i>Hedyotis tenelliflora</i> Bl. var. <i>kerrii</i> (Craib) Fuku.	h	pd	4	gro	dof mx f eg/pine	425–1400	jl–nv	sp–ja	my–fb	topotype
<i>Hedyotis tenelliflora</i> Bl. var. <i>tenelliflora</i>	h	a	3	gro	eg/pine da mx f egf	1000–1525	jl–oc	sp–dc	jn–fb	
<i>Hedyotis vestita</i> R. Br. ex G. Don	h	pd	3	wee	eg/pine egf	1000–1525	jl–sp	ag–nv	my–dc	
<i>Hymenodictyon orixense</i> (Roxb.) Mab.	t	pd	2	gro	bb/df	350–700	my–jn	nv–fb	my–dc	synonym = <i>Hymenodictyon excelsum</i> (Roxb.) Wall.
<i>Hymenopogon parasiticus</i> Wall.	s	pd	1	epl	egf eg/pine	1275–1625	ag	oc–nv	my–dc	
<i>Hyptianthera bracteata</i> Craib	l	pe	2	gro	mx f	650–650	ap–my	oc–fb	ja–dc	q.v. <i>Hyptianthera stricta</i> (Willd.) Wight & Arn.
<i>Ixora butterwickii</i> Hole var. <i>lepida</i> Craib	l	pe	2	gro	do	400–400	fb–mr	ap–my	ja–dc	topotype of paratype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Ixora cibdela</i> Craib var. <i>cibdela</i>	l (s)	pe	3	gro	mx	400-700	fb-mr	my-jn	ja-dc	topotype
<i>Ixora cibdela</i> Craib var. <i>puberula</i> Craib	l (s)	pe	4	gro	mx	650-1350	ap-my	sp-mr	ja-dc	
<i>Ixora kernii</i> Craib	l	pe	2	gro	eg	1150-1400	ap	oc-nv	ja-dc	topotype
<i>Knoxia brachycarpa</i> R. Br. ex Hk. f.	h	pd	3	gro	dof	350-500	ag-oc	sp-nv	my-dc	
<i>Knoxia corymbosa</i> Willd.	h	pd	4	gro	dof eg/pine	450-1300	jl-oc	sp-dc	jn-dc	
<i>Knoxia mollis</i> Wight & Arn.	h	a	3	gro	dof/pine	1200-1650	oc-dc	nv-ja	jn-dc	
<i>Lasianthus kurzii</i> Hk. f.	l	pe	3	gro	streams in dof bb/df eg	550-1200	my-jn	sp-dc	my-dc	
<i>Lasianthus lucidus</i> Bl.	l (s)	pe	3	gro	eg	925-1150	my-jn	sp-dc	ja-dc	
<i>Metadina trichotoma</i> (Zoll. & Mor.) Bakh. f.	t	pe	3	gro	mx	700-1230	fb-mr	(ap) jl-ag	ja-dc	often dropping leaves in January
<i>Mitracarpus villosus</i> (Sw.) DC.	h	a	4	gro nat wec	da	350-1685	jl-oc	sp-ja	my-dc	
<i>Mitragyna hirsuta</i> Hav.	t	pd	3	gro	dof da in eg	350-1100	sp-oc	oc-mr	my-fb	
<i>Mitragyna rotundifolia</i> (Roxb.) O.K.	t	pd	3	gro	dof bb/df	350-800	sp-oc	nv-ja	my-fb	*
<i>Morinda angustifolia</i> Roxb. var. <i>scabridula</i> Craib	l (s)	pe	3	gro	mx	450-1100	fb-ap	ap-jn	ja-dc	topotype of paratype
<i>Morinda tomentosa</i> Hey. ex Roth	t	pd	3	gro	dof	400-600	ap-my	jl-sp	my-fb	
<i>Mussaenda kerrii</i> Craib	wc (sc)	pe	3	gro	eg	700-1100	mr-ap	oc-nv	ja-dc	topotype
<i>Mussaenda parva</i> Wall. ex G. Don	v wc sc	pde	4	gro	dof bb/df mx	500-1650	jl-mr	my-mr	ja-dc	topotype of <i>Mussaenda sootepensis</i> Hoss. and <i>Mussaenda neosootepensis</i> Craib, deciduous below 850 m fb-ap
<i>Mussaenda sandertiana</i> Ridl.	s sc	pe	4	gro	da dof bb/df mx	500-1650	ja-jn	ap-ag	ja-dc	also sometimes scandent or climbing, topotype of <i>Mussaenda sutepensis</i> Hoss. and <i>Mussaenda hossei</i> Craib ex Hoss.
<i>Mycetia glandulosa</i> Craib	l (s) (h)	pe	3	gro	eg and near streams in mx	600-1050	ap-my	ag-oc	ja-dc	topotype
<i>Mycetia gracilis</i> Craib	l (h, s)	pe	2	gro	eg streams	1325-1325	jn-jl	nv-dc	ja-dc	topotype
<i>Mycetia longifolia</i> (G. Don) K. Sch.	l (h)	pe	3	gro	mx streams	600-800	my-jn	sp-nv	ja-dc	
<i>Mycetia rivicola</i> Craib	l	pe	2	gro	eg	1575-1575	my-jl	sp-nv	ja-dc	topotype
<i>Ophiorrhiza hispidula</i> Wall. ex G. Don var. <i>hispidula</i>	h	a	3	gro	mx	650-1125	jn-jl	jl-sp	my-dc	
<i>Ophiorrhiza ridleyana</i> Craib	h	a	2	gro	mx	700-1125	jn-ag	ag-oc	my-dc	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Ophiorthiza rosea</i> Hk. f.	h	a	2	gro	egf streams	1100–1500	jl–ag	oc–dc	my–dc	
<i>Ophiorthiza villosa</i> Roxb.	h	pe	3	gro	mxg egf	625–1600	jn–oc	ag–nv	ja–dc	
<i>Oxyechos horridus</i> Lour.	wc	pe	2	gro	bb/df	350–350	ap	dc–ja	ja–dc	
<i>Paederia pallida</i> Craib	v	a	3	gro	bb/df da	375–1200	sp–ja	my–ag	my–dc	
<i>Paederia pilifera</i> Hk. f.	v	ape	3	gro	bb/df mxg da	350–550	ja–fb	my–ag	ja–dc	topotype of <i>Paederia pilifera</i> Hk. f. var. <i>siamensis</i> Craib
<i>Paederia scandens</i> (Lour.) Merr.	v	pe	3	gro	bb/df mxg	525–850	ag–oc	oc–nv	ja–dc	
<i>Paederia wallichii</i> Hk. f.	v	pe	3	gro	bb/df mxg da	350–1350	oc–fb	fb–ja	my–ja	topotype of <i>Paederia kerrii</i> Craib
<i>Pavetta fruticosa</i> Craib	s	pd	3	gro	dof eg/pine	400–1525	ap–my	sp–ja	my–ja	topotype
<i>Pavetta indica</i> L.	t (l)	pe	3	gro	mxg egf	550–1225	mr–my	jn–ag	ja–dc	
<i>Pavetta tomentosa</i> Roxb. ex Sm. var. <i>tomentosa</i>	l (s)	pd	3	gro	dof bb/df mxg	500–1300	jn–jl	oc–nv	my–fb	
<i>Prismatomeris tetrandra</i> (Roxb.) K. Sch. ssp. <i>tetrandra</i>	l (s)	pe	3	gro	mxg egf	500–1400	my–dc	sp–fb	ja–dc	
<i>Psychotria adenophylla</i> Wall.	s	pe	3	gro	egf	1350–1400	jn–ag	nv–mr	ja–dc	
<i>Psychotria monicola</i> Kurz var. <i>monticola</i>	l	pe	3	gro	egf eg/pine	1175–1680	ap–my	oc–ja	ja–dc	
<i>Psychotria ophioloides</i> Wall.	l (s)	pe	4	gro	egf	1000–1350	ap–jn	oc–dc	ja–dc	
<i>Psychotria siamensis</i> (Craib) Hutch.	s (l)	pe	3	gro	mxg egf	700–1050	my–jn	nv–dc	ja–dc	topotype, basionym = <i>Cephaelis siamensis</i> Craib
<i>Rottmannia sootepensis</i> (Craib) Brem.	t	pe	3	gro	mxg egf	450–1250	fb–mr	sp–jn	ja–dc	topotype
<i>Rubia siamensis</i> Craib	v	pe	3	gro	egf	1050–1650	mr–oc	sp–nv	my–dc	topotype
<i>Saprosma</i> sp.	l	pe	2	gro	egf streams	1400–1400	jn–jl	nv–dc	ja–dc	
<i>Spiradiclis caespitosa</i> Bl.	h	a	2	epl	mxg streams	900–1000	jn–jl	ag–sp	my–dc	
<i>Tarenna vanprukii</i> Craib var. <i>vanprukii</i>	t (l) (s)	pe	2	gro	dof	375–375	ja	sp–dc	ja–dc	also grows as a shrub, probably = <i>Tarenna collinsae</i> Craib
<i>Tarennoidea wallichii</i> (Hk. f.) Tirv. & Sastre	t	pe	3	gro	mxg egf	550–1400	a–jn	ag–ja	ja–dc	changing leaves in February, syn. = <i>Tarenna dispersa</i> (Hk. f.) Pit.
<i>Uncaria macrophylla</i> Wall.	wc	pe	3	gro	egf	1025–1350	sp–oc	nv–ja	ja–dc	
<i>Vangueria (Meyna) pubescens</i> Kurz	t (l)	pd	2	gro	dof bb/df	350–500	my–jn	jl–sp	my–fb	
<i>Wendlandia scabra</i> Kurz var. <i>scabra</i>	t (l)	pd	3	gro	da egf	1025–1685	fb–ap	jl–oc	my–mr	syn. = <i>Wendlandia paniculata</i> (Roxb.) DC ssp. <i>scabra</i> (Kurz) Cowan
<i>Wendlandia tinctoria</i> (Roxb.) DC. ssp. <i>floribunda</i> (Craib) Cowan	t (l)	pe	4	gro	eg/pine da mxg	500–1525	ja–fb	mr–ag	ja–dc	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Valerianaceae										
<i>Valeriana hardwickii</i> Wall.	h	pd	2	gro	eg/pine	1425–1650	sp-nv	oc-ja	jn-fb	
Compositae										
<i>Adenostemma lavenia</i> (L.) O.K. var. <i>lavenia</i>	h	a	3	wee	egf	1500–1650	oc-nv	nv-dc	my-dc	syn. = <i>Adenostemma viscosum</i> Forst.
<i>Adenostemma lavenia</i> (L.) O.K. var. <i>parviflorum</i> (Bl.) Hochr.	h	a	3	gro	mx f eg/pine	600–1300	oc-nv	nv-dc	my-dc	
<i>Ageratum conyzoides</i> L.	h	a	5	nat wee	eg/pine da sg	350–1685	oc-dc	nv-ja	my-fb	
<i>Anaphalis adnata</i> DC.	h	a	3	gro	egf eg/pine	1250–1650	nv-my	dc-jn	my-dc	
<i>Anaphalis margaritacea</i> (L.) Bth. & Hk. f.	h	a	3	gro wee	eg/pine	1250–1650	nv-my	dc-jn	jn-fb	
<i>Artemisia indica</i> Willd.	h	pd	2	gro	egf eg/pine	1300–1600	sp-dc	nv-fb	my-dc	open areas
<i>Bidens pilosa</i> L. var. <i>minor</i> (Bl.) Sherff	h	a	5	gro wee	da egf	700–1685	nv-my	dc-jn	my-dc	
<i>Blumea balsamifera</i> (L.) DC.	h	pe	3	gro wee	eg/pine da	350–1550	ap-my	my-jn	ja-dc	
<i>Blumea clarkii</i> Hk. f.	h	a	2	gro	da egf	1400–1610	ag-oc	oc-nv	jn-nv	
<i>Blumea fistulosa</i> (Roxb.) Kurz	h	a	3	gro	sg bb/df	350–925	mr-ap	ap-my	oc-my	thickets
<i>Blumea gardneri</i> (Hk. f.) Gagnep.	h	a	2	gro	dof	525–525	ja-fb	fb-mr	ag-mr	
<i>Blumea hossei</i> Craib ex Hoss.	h	a	2	gro	eg/pine	700–900	my-jn	jn-jl	ap-nv	topotype
<i>Blumea lacera</i> (Burm. f.) DC.	h	a	3	gro	dof bb/df	500–1600	ja-mr	fb-ap	jl-my	
					mx f, da in egf					
<i>Blumea lacinata</i> (Roxb.) DC.	h	a	3	gro	da bb/df	450–1200	ja-mr	fb-ap	jl-ap	
<i>Blumea lanceolata</i> (Roxb.) Druce var. <i>spectabilis</i> (DC.) Rand.	h	pe	2	gro	egf	1025–1200	fb-ap	mr-my	ja-dc	
<i>Blumea membranacea</i> DC. var. <i>membranacea</i>	h	a	3	gro	da in bb/df	600–1575	ja-ag	dc-mr	jl- ap	often a weed
<i>Blumea mollis</i> (D. Don) Merr.	h	a	3	gro wee	mx f eg/pine	350–1300	fb-my	(ag-sp) oc-dc	fb-dc	
<i>Blumea napifolia</i> DC.	h	a	3	gro wee	bb/df mx f	575–1000	ja-fb	fb-mr	jn-ap	
<i>Blumea sessiliflora</i> Dene.	h	a	2	gro	streams in dof	350–600	dc-ja	fb-mr	jn-fb	
<i>Blumeopsis flava</i> (DC.) Gagnep.	h	a	4	gro	dof eg/pine	450–1685	nv-ja	dc-fb	sp-fb	
<i>Camchaya eberhardii</i> (Gagnep.) Kit.	h	pe	3	gro	egf	1250–1650	jl-nv	ag-nv	ja-dc	topotype of <i>Iodocephalus glandulosus</i> Kerr
<i>Cissampelopsis cordifolia</i> C. Jeff. & Y. L. Chen	v	pe	2	gro	eg/pine	1275–1350	fb	mr-ap	ja-dc	
<i>Conyza japonica</i> (Thunb.) Less. ex DC.	h	a	4	gro, nat wee	da egf eg/pine	1550–1680	my-ag	jn-sp	ap-nv	
<i>Conyza leucantha</i> (D. Don) Lud. & Ravh	h	a	4	gro wee	egf mx f	600–1575	my-ag	jn-sp	ap-nv	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Conyza stricta</i> Willd. var. <i>pinnatifida</i> (D. Don) Kitam.	h	a	3	gro wee	eg/pine	1600–1650	oc-dc	nv-ja	jn-ja	
<i>Conyza sumatrensis</i> (Retz.) Walk.	h	a	5	gro wee	eg/pine da	350–1685	my-dc	jn-ja	ap-ja	
<i>Crassocephalum crepidioides</i> (Bth.) S. Moore	h	a	4	gro nat wee int	eg/pine	350–1685	sp-fb	oc-mr	jn-mr	
<i>Crepis chloroclaeda</i> Coll. & Hemsl.	h	pd	3	gro	da eg/pine	1250–1650	mr-jn	ap-ag	ap-dc	
<i>Cyatocline purpurea</i> (Ham. ex D. Don) O.K.	h	pd	2	gro	rocks in do streams	400–675	nv-mr	dc-ap	my-mr	
<i>Dichrocephala integrifolia</i> (L. f.) O.K.	h	a	3	gro wee	da	700–1575	mr-ag	ap-sp	mr-dc	
<i>Eclipta prostrata</i> (L.) L.	h	a	3	gro wee	da	350–900	ag-dc	sp-ja	jl-ja	
<i>Elephantopus scaber</i> L. var. <i>scaber</i>	h	pe	4	gro	da bb/df mx f egf eg/pine	500–1275	ag-dc	oc-ja	ja-dc	often a weed
<i>Emilia prenanthoidea</i> DC.	h	a	3	gro	dof bb/df	500–1000	jl-sp	ag-nv	jn-dc	
<i>Emilia sonchifolia</i> (L.) DC. ex Wight	h	a	4	wee gro	da	800–1550	oc-mr	nv-ap	ag-ap	
<i>Ethulia conyzoides</i> L. f. ex L.	h	a	2	gro	eg/pine	1600–1685	jl-oc	sp-nv	my-dc	
<i>Eupatorium adenophorum</i> Spreng.	s (h)	pe	5	gro nat int wee	eg/pine da	350–1650	fb-ap	mr-my	ja-dc	syn. = <i>Ageratina adenophora</i> (Spreng.) R. M. King & H. Rob.
<i>Eupatorium cannabinum</i> L.	h	a	2	gro	eg/pine	1000–1500	oc-dc	nv-ja	my-fb	
<i>Eupatorium odoratum</i> L.	h	pd	5	gro nat int wee	da	350–1650	nv-ja	dc-fb	my-fb	syn. = <i>Chromolaena odorata</i> (L.) R. M. King & H. Rob.
<i>Galinsoga parviflora</i> Cav.	h	a	3	wee nat	da in egf & eg/pine	800–1550	jl-dc	ag-ja	my-dc	
<i>Gnaphalium affine</i> D. Don	h	a	3	wee	da	350–1000	fb-ap	mr-my	sp-my	
<i>Gnaphalium hypoleucum</i> DC.	h	a	3	wee	da	1000–1575	nv-ja	dc-fb	jl-fb	
<i>Gnaphalium polycaulon</i> Pers.	h	a	3	wee	da	350–1000	ag-nv	sp-dc	jn-ja	
<i>Gochmatia decora</i> (Kurz) Cabr.	t(l)	pd	3	gro	eg/pine	1225–1575	mr	ap-my	ap-fb	
<i>Grangea maderaspatana</i> (L.) Poir.	h	a	3	gro wee	da	350–800	ja-mr	fb-ap	ag-ap	
<i>Gynura integrifolia</i> Gagnep.	h	pd	3	gro	dof	500–600	jn-ag	jl-sp	my-nv	topotype
<i>Gynura longifolia</i> Kerr	v (h)	a	2	gro	eg/pine egf da	1350–1550	fb-mr	mr-ap	ag-mr	
<i>Gynura pseudochina</i> (L.) DC.	h	pd	3	gro	dof eg/pine da	400–1550	ap-jn	my-jl	my-fb	
<i>Inula cappa</i> (Ham. ex D. Don) DC.	h	pd	3	gro	da dof eg/pine	400–1685	dc-fb	fb-ap	jn-fb	
<i>Inula cappa</i>										
<i>Inula indica</i> L.	h	pd	3	gro	dof	350–900	nv-fb	dc-mr	jl-ap	
<i>Inula nervosa</i> Wall. ex DC. var. <i>purpurascens</i> Hk. f.	h	a	3	gro	eg/pine	1350–1685	oc-dc	dc-ja	jn-fb	
<i>Inula wismaniana</i> Hand.-Maz. forma <i>wissmanniana</i>	h	a or pd	3	gro	eg/pine	1200–1650	ja-mr	fb-ap	jl-ap	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Ixeridium sagittaroides</i> (Cl.) Pak. & Kaw.	h	a	3	gro	eg/pine	1400–1650	ap–jn	my–jl	ap–nv	
<i>Lactuca parishii</i> Craib ex Hoss.	h	pd	3	gro	mx eg/pine	800–1685	fb–mr	mr–ap	jn–ap	topotype
<i>Lagdera alata</i> (D. Don) Sch. Bip. ex Oliv.	h	a	3	gro	eg/pine	1350–1650	ja–ap	fb–my	jl–my	
<i>Lagdera aurita</i> (L. f.) Sch. Bip. ex Schw.	h	a	3	gro wee	da	350–350	mr–ap	ap–my	jl–my	
<i>Lagdera pterodonta</i> (DC.) Sch. Bip. ex Oliv.	h	a	3	gro wee	da	350–1650	fb–mr	mr–ap	jl–ap	
<i>Microglossa pyrifolia</i> (Lmk.) O. K.	v	pe	3	gro	egf	1000–1350	mr–jn	ap–jl	ja–dc	
<i>Mikania cordata</i> (Burm. f.) B. L. Rob. forma undulata Kost.	v	a	3	gro nat	da	350–950	oc–dc	nv–ja	jn–ja	thickets
<i>Piloselloides hirsuta</i> (Forsk.) C. Jeff.	h	pe	3	gro	da eg/pine	1450–1650	nv–jn	ja–jl	ja–dc	
<i>Pluchea polygonata</i> (DC.) Gagnep.	h	a	3	gro	dof bb/df	400–800	nv–ja	dc–fb	my–mr	
<i>Pterocaulon redolens</i> (Forst. f.) F. Vill.	h	a	3	gro	eg/pine	1400–1600	sp–nv	oc–dc	jn–dc	
<i>Saussurea peguensis</i> Cl.	h	a	3	gro	eg/pine	1450–1650	dc–mr	ja–ap	jl–ap	
<i>Siegesbeckia orientalis</i> L.	h	a	3	wee	da	350–1685	jl–nv	ag–ja	jn–dc	
<i>Sonchus arvensis</i> L.	h	pd	3	gro wee	da	350–1350	oc–ap	dc–mr	jl–mr	
<i>Sonchus oleraceus</i> L.	h	pd	3	gro wee	da	1000–1400	oc–mr	dc–ap	jl–mr	
<i>Sphaeranthus indicus</i> L.	h	a	3	gro nat wee	da	350–800	dc–mr	ja–ap	jl–ap	
<i>Spilanthes paniculata</i> Wall. ex DC.	h	a	4	gro wee	streams bb/df mx f	350–1650	jn–dc	jl–ja	ap–ja	
<i>Synedrella nodiflora</i> (L.) Gaertn.	h	a	4	gro wee nat	eg/pine da	350–1650	jn–dc	jl–ja	jn–ja	
<i>Synotis trilobulata</i> (B.-H. ex D. Don) C. Jeff. & Y.L. Chen	sc	pe	2	gro	eg/pine	1450–1550	fb–mr	mr–my	ja–dc	
<i>Tithonia diversifolia</i> (Hemsl.) A. Gray	h	pe	4	gro int cul	da	950–1550	dc–ja	fb–mr	ja–dc	thickets, escaped cultivation
<i>Tricholepis karenium</i> Kurz	h	a	3	gro	eg/pine	1450–1650	ja–mr	fb–ap	sp–ap	often in open, fire-damaged places
<i>Tridax procumbens</i> L.	h	a	4	gro nat int wee	da	350–1200	jn–ja	jl–fb	jl–fb	thickets
<i>Vernonia andersonii</i> Cl.	v	pe	2	gro	eg/pine	1350–1650	dc–ap	ja–mr	ja–dc	
<i>Vernonia cinerea</i> (L.) Less. var. <i>cinerea</i>	h	a	4	gro wee	da	350–1685	ja–dc	ja–dc	my–dc	
<i>Vernonia divergens</i> (DC.) Edgew.	h	pd	3	gro	egf eg/pine da	1200–1575	dc–fb	ja–mr	jn–mr	
<i>Vernonia parishii</i> Hk. f.	l (h)	pde	3	gro	mx eg/pine	425–1650	fb–mr	mr–ap	ja–dc	deciduous below 850 m my–jn
<i>Vernonia roxburghii</i> Less.	h	pd	3	gro	bb/df	450–600	nv–ja	dc–fb	my–fb	
<i>Vernonia silhetensis</i> (DC.) Craib var. <i>silhetensis</i>	h	pd	2	gro	eg/pine	1200–1200	oc–nv	nv–dc	my–dc	topotype of <i>Vernonia silhetensis</i> (DC.) Craib var. <i>subserata</i> (Hoss.) Craib

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Vernonia squarrosa</i> (D. Don) Less. var. <i>orientalis</i> Kit.	h	pd	3	gro	dof	400-800	sp-nv	oc-dc	jl-ja	
<i>Vernonia sutepensis</i> Kerr	h	pd	3	gro	da bb/df eg/pine egf	600-1650	ja-mr	fb-mr	jl-ap	topotype
<i>Vernonia volkamerifolia</i> DC. var. <i>volkamerifolia</i>	l (s)	pe	3	gro	da eg/pine	1300-1675	ja-mr	fb-my	ja-dc	
<i>Wedelia montana</i> (Bl.) Boerl. var. <i>wallichii</i> (Less.) H. Koy.	h	a	3	gro	egf eg/pine eg/bb da	1000-1500	jin-ag	jl-sp	my-dc	open areas
<i>Xanthium inaequilaterum</i> DC.	h	a	3	wee nat	da	350-750	ja-fb	fb-ap	jl-ap	
<i>Youngia japonica</i> (L.) DC.	h	a	3	gro wee	da in egf eg/pine	1250-1600	sp-nv	oc-dc	jl-ja	
Campanulaceae										
<i>Codonopsis celebica</i> (Bl.) Thuan	v	pe	3	gro	egf	1000-1300	fb-ag	my-oc	ja-dc	
<i>Codonopsis javanica</i> (Bl.) Hk. f.	v	pe	3	gro	da eg/pine	1200-1650	jl-nv	sp-dc	ja-dc	
<i>Codonopsis parviflora</i> Wall. ex A. DC.	h	pe	2	gro	streams in mx f bb/df	600-800	jin-ji	sp-oc	ja-dc	
<i>Lobelia alsinoides</i> Lmk.	h	a	3	gro	eg/pine	1250-1650	oc-dc	nv-ja	jl-ja	
<i>Lobelia nicotianaeifolia</i> Roth ex R. & S.	h	a pd	2	gro	egf	1250-1450	ja-fb	fb-ap	jl-ap	
<i>Lobelia zeylanica</i> L.	h cr	a	3	gro	mx f eg/pine	850-1685	sp-dc	oc-fb	jin-mr	
<i>Pratia begoniifolia</i> (Wall. ex Roxb.) Lindl.	h cr	pe	4	gro	da mx f egf eg/pine	600-1685	jin-oc	ag-nv	ja-dc	q.v. <i>Lobelia angulata</i> Forst.
<i>Wahlenbergia marginata</i> (Thunb.) A. DC.	h	a	2	gro wee	da	575-575	fb-ap	mr-my	jl-ap	
Sphenocleaceae										
<i>Sphenoclea zeylanica</i> Gaertn.	h	a	3	gro wee	da	375-725	jl-dc	ag-ja	my-ja	
Ertaceae										
<i>Agapetes hosseana</i> Diels	s	pe	3	epi	eg/pine	1500-1685	ap-fb	oc-ap	ja-dc	
<i>Agapetes variegata</i> Wall. ex D. Don	s	pe	2	epi	eg/pine	1600-1650	jl-dc	oc-fb	ja-dc	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989) 183.
<i>Craibiodendron stellatum</i> (Pierre) W. W. Sm.	l	ped	3	gro	dof bb/df eg/pine	400-1450	sp-nv	ja-mr	ja-dc	sometimes leafless mr-ap
<i>Lyonia ovalifolia</i> (Wall.) Druce	l t	ped	3	gro	eg/pine	1550-1650	jl-ag	nv-ja	ap-fb	
<i>Rhododendron moluainense</i> Hk.	t	pe	3	gro	egf eg/pine	1275-1650	fb-ap	jin-ji	ja-dc	topotype of <i>Rhododendron siamensis</i> Diels. syn. = <i>Rhododendron oxyphyllum</i> Fr.
<i>Rhododendron vietnamicum</i> Hk.	s	pd	2	epi	eg/pine	1550-1685	dc-mr	fb-ap	mr-dc	
<i>Vaccinium sprengelii</i> (D. Don) Sleum.	t (l)	pe	4	gro	da dof bb/df	600-1650 mx f eg/pine	oc-mr	mr-jn	ja-dc	often in fire-damaged areas, especially above 1000 m. syns. = <i>Vaccinium apricum</i> Flet., <i>Vaccinium exaristatum</i> Kurz, <i>Vaccinium garrettii</i> Craib, <i>Vaccinium pedicellatum</i> Flet., <i>Vaccinium winitii</i> Flet.

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Monotropaceae										
<i>Monotropa hypopitys</i> L.	h	pd	1	gro sap	da eg/pine	1425–1650	jn–jl	sp–oc	leafless	<i>nomen aliorum</i> = <i>Hypopithys lanuginosa</i> Rafin., lacking chlorophyll
Primulaceae										
<i>Lysimachia lancifolia</i> Craib	h	a	3	gro	egf eg/pine	1300–1650	jn–jl	oc–dc	my–dc	topotype
<i>Lysimachia peduncularis</i> Wall. ex Kurz	h	a	3	gro	dof bb/df egf	400–1600	jn–nv	jl–fb	my–mr	
<i>Lysimachia remotiflora</i> C.M. Hu	h	a	2	gro wee	da in egf & eg/pine	1000–1200	jn–oc	jn–nv	jn–nv	
Plantaginaceae										
<i>Plantago major</i> L.	h	pe	3	gro wee	da egf eg/pine	1025–1525	ag–oc	sp–dc	ja–dc	
Myrsinaceae										
<i>Ardisia arborescens</i> Wall. ex DC.	t	pe	3	gro	mx	600–800	oc–nv	dc–fb	ja–dc	
<i>Ardisia attenuata</i> Wall. ex A. DC.	l(s)	pe	3	gro	streams dof	400–1475	mr–ap	my–jn	ja–dc	topotype of paratype of <i>Ardisia garretii</i> Flet.
<i>Ardisia corymbifera</i> Mez var. <i>corymbifera</i>	l(s)	pe	3	gro	bb/df mx	1150–1680	ap–jn	ag–fb	ja–dc	
<i>Ardisia crenata</i> Sims var. <i>crenata</i>	l	pe	3	gro	dof bb/df	400–1350	ap–sp	ag–fb	ja–dc	syn. = <i>Ardisia crispa</i> (Thunb.) A. DC.
<i>Ardisia kerrii</i> Craib	t	pe	3	gro	streams egf	600–1000	my–jn	jl–oc	ja–dc	var. <i>crispa</i>
<i>Ardisia maculosa</i> Mez	l	pe	2	gro	streams bb/df mx	1125–1125	jn–jl		ja–dc	topotype
<i>Ardisia villosa</i> Roxb.	l	pe	3	gro	bb/df mx	550–1300	ap–jl	sp–ja	ja–dc	
<i>Ardisia virens</i> Kurz	l	pe	3	gro	mx	950–1600	jn–jl	sp–nv	ja–dc	
<i>Embelia impressa</i> Flet.	wc	pe	3	gro	egf	1025–1350	dc–ja	mr–sp	ja–dc	topotype
<i>Embelia oblongifolia</i> Hemsl.	wc	pe	2	gro	egf	900–1100	ja–fb	?	ja–dc	topotype of <i>Embelia impressa</i> Flet.
<i>Embelia pulchella</i> Mez	s sc wc	pe	2	gro	egf	1275–1275	dc–fb	sp–nv	ja–dc	var. <i>serrata</i> Flet.
<i>Embelia sessiliflora</i> Kurz	wc	pd	4	gro	da mx	975–1650	fb–mr	my–jl	ap–mr	topotype of <i>Embelia stricta</i> Craib
<i>Embelia sootepensis</i> Craib var. <i>sootepensis</i>	l	pd	2	gro	bb/df	650–650	jn	jl–ag	my–mr	topotype
<i>Embelia subcoriacea</i> (Cl.) Mez	wc sc	pd	3	gro	dof bb/df	425–500	ja–fb	my–jn	ap–fb	also grows as a deciduous shrub
<i>Embelia tsjeriamcottam</i> (Roem. & Schult.) A. DC. var. <i>tsjeriamcottam</i>	wc	pd	3	gro	bb/df mx	525–700	jn–jl	ag–oc	my–dc	syn. = <i>Embelia villosa</i> Wall.
<i>Maesa montana</i> A. DC.	l(s) sc	pe	3	gro	da egf eg/pine	1050–1685	dc–mr	oc–my	ja–dc	open areas
<i>Maesa permollis</i> Kurz	l sc	pe	3	gro	mx	675–1650	fb–mr	oc–dc	ja–dc	
<i>Maesa ramentacea</i> (Roxb.) A. DC.	t(l)	pe	4	gro	sg da in bb/df mx	375–1650	dc–mr	ag–oc (ja)	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Rapanea yunnanensis</i> Mez	t	pe	3	gro	mx f egf eg/pine	625–1650	ja–mr	my–dc	ja–dc	syn. = <i>Rapanea nerifolia</i> (Sieb. & Zucc.) Mez var. <i>yunnanensis</i> (Mez) Walk.
Sapotaceae										
<i>Madhuca stipulacea</i> Flet.	t	pd	2	gro	dof bb/df	350–500	ja–mr	nv–ap	jn–ap	
<i>Palaquium garrettii</i> Flet.	t	pe	2	gro	da mx f egf	800–1450	oc–ja	oc–nv	ja–dc	
<i>Pouteria grandifolia</i> (Wall.) Baeh.	t	pe	1	gro	egf	1250–1340	ap–my	mr–ap	ja–dc	
<i>Sarcosperma arboreum</i> Bth.	t	pe	3	gro	mx f egf	650–1400	dc–fb	ap–jn	ja–dc	
<i>Xantolis burmanica</i> (Coll. & Hemsl.) P. Royen	t	ped	2	gro	dof bb/df mx f egf eg/pine	350–1525	my–jn	sp–ap	ja–dc	often deciduous in dof & bb/df fb–mr
Ebenaceae										
<i>Diospyros castanea</i> (Craib) Flet.	t	pe	2	gro	dof sg	350–400	mr–ap	my–jn	ja–dc	
<i>Diospyros coactanea</i> Flet.	t	pd	1	gro	bb/df	400–500	my–jn	jl–oc	ap–fb	fruits described: Maxwell, Nat. Hist. Bull. Siam Soc. 40:2 (1992) 186.
<i>Diospyros ehetoides</i> Wall. ex G. Don	t	pd	3	gro	dof bb/df	350–900	mr–ap	jl–ja	my–fb	
<i>Diospyros ferrea</i> (Willd.) Bakh.	t	pe	3	gro	streams so	425–800	ap	jl–ag	ja–dc	
var. <i>litorea</i> (R. Br.) Bakh.					bb/df mx f					
<i>Diospyros glandulosa</i> Lace	t	pe	3	gro	mx f egf eg/pine	650–1650	mr–my	sp–oc (dc)	ja–dc	
<i>Diospyros malabarica</i> (Desr.) Kostel.	t	pe	3	gro	bb/df mx f	500–700	mr–ap	ag–sp	ja–dc	
var. <i>siamensis</i> (Hochr.) Pheng.										
<i>Diospyros martabanica</i> Cl.	t	pe	3	gro	egf	1300–1400	mr–ap	sp–my	ja–dc	
<i>Diospyros mollis</i> Griff.	t	pd	3	gro	bb/df	350–850	ap–my	dc–mr	ap–fb	
<i>Diospyros montana</i> Roxb.	t	pd	2	gro	bb/df	350–350	mr–ap	ag–sp	ap–fb	
<i>Diospyros pilosanthera</i> Blanco	t	pe	3	gro	bb/df mx f	500–700	mr–ap	my–ag	ja–dc	
<i>Diospyros rhodocalyx</i> Kurz	t	pd	2	gro	bb/df mx/pine	350–1350	mr–ap	my–jl	my–fb	
<i>Diospyros undulata</i> Wall. ex G. Don	t	pe	3	gro	bb/df mx f	525–850	ap–my	(ag) nv–my	ja–dc	
var. <i>cratericalyx</i> (Craib) Bakh.										
<i>Diospyros winitii</i> Flet.	t	pe	2	gro	mx f	850–950	ap–my	nv–dc	ja–dc	
Symplocaceae										
<i>Symplocos cochinchinensis</i> (Lour.) S. Moore ssp. <i>cochinchinensis</i> var. <i>cochinchinensis</i>	t	pe	3	gro	eg/pine	1450–1650	sp–nv	jn–jl	ja–dc	
<i>Symplocos cochinchinensis</i> (Lour.) S. Moore ssp. <i>laurina</i> (Retz.) Noot.	t	pe	1	gro	egf	1000–1400	nv–dc	my–jn	ja–dc	
<i>Symplocos hookeri</i> Cl.	l	pe	3	gro	streams in egf	1000–1400	jl–oc	ap–dc	ja–dc	
<i>Symplocos macrophylla</i> Wall. ex DC. ssp. <i>sulcata</i> (Kurz) Noot. var. <i>sulcata</i>	t (s)	pe	3	gro	da egf eg/pine	1300–1600	sp–nv	ja–mr	ja–dc	open areas, topotypes of <i>Symplocos kerrii</i> Craib var. <i>kerrii</i> and <i>Symplocos rajaniana</i> Craib
<i>Symplocos racemosa</i> Roxb.	t (l)	pde	3	gro	dof do/pine eg/pine	350–1250	nv–fb	mr–ap	my–fb	evergreen in eg/pine

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Symplocos sumuntia</i> B.-H. ex D. Don	t (l)	pe	2	gro	egf do/pine	1000-1300	dc-fb	fb-mr	ja-dc	
Styracaceae										
<i>Syrax benzoides</i> Craib	t	pe	4	gro	eg/pine da bb/df mxf egf	600-1650	ap-jn	jl-oc (ja)	ja-dc	topotype, inflorescences often galled
Oleaceae										
<i>Chionanthus mala-elengi</i> (Dennst.) P. S. Green ssp. <i>terniflorus</i> (Wall. ex G. Don) P. S. Green	t	pe	3	gro	mxm streams	550-1050	fb-mr	nv-ja	ja-dc	syn. = <i>Linociera caudata</i> Coll. & Hemsl.
<i>Chionanthus ramiflorus</i> Roxb.	t	pe	4	gro	bb/df mxf	205-860	ja-fb	nv-fb	ja-dc	syn. = <i>Linociera ramiflora</i> (Roxb.) Wall. ex DC.
<i>Chionanthus sutebensis</i> (Kerr) P.S. Green	t	pe	3	gro	egf	1050-1400	oc-dc	nv-ja	ja-dc	topotype, basionym = <i>Linociera sutebensis</i> Kerr
<i>Fraxinus floribunda</i> Wall.	t	pe	2	gro	egf	1050-1400	ja-fb	mr-jl (sp-oc)	ja-dc	
<i>Jasminum attenuatum</i> Roxb. ex G. Don	wc (v)	pe	3	gro	mxm egf	600-1475	oc-ja	ja-my	ja-dc	syns. = <i>Jasminum sempervirens</i> Kerr, <i>Jasminum subgladulosum</i> Kurz
<i>Jasminum fundale</i> Decne. ssp. <i>sutebensis</i> (Craib) P. S. Green	wc sc	pd	2	gro	mxm egf	750-1400	jl-ag	nv-ja	nv-ja	topotype, basionym = <i>Jasminum sutebensis</i> Craib
<i>Jasminum nervosum</i> Lour.	v	pe	3	gro	da mxf egf	850-1500	mr	jn-jl	ja-dc	
<i>Jasminum scandens</i> (Retz.) Vahl	wc v	pd	3	gro	dof bb/df	500-750	ja-fb	jn-jl	ap-fb	
<i>Jasminum siamense</i> Craib	s (v.h)	pd	3	gro	dof bb/df	350-575	my	jn-jl	ap-fb	mostly grows as a shrub
<i>Myxoppyrum smilacifolium</i> (Wall.) Bl. ssp. <i>confertum</i> (Kerr) Kiew	wc	pe	2	gro	bb/df mxf	500-950	mr-ap	jl	ja-dc	
<i>Olea dioica</i> Roxb.	t	pe	2	gro	egf eg/pine	1475-1600	mr-ap	sp-oc	ja-dc	
<i>Olea rosea</i> Craib	t	pe	3	gro	mxm egf eg/pine	825-1600	mr-ap	ag-sp	ja-dc	topotype, also topotype of <i>Olea oblanceolata</i> Craib
<i>Olea salicifolia</i> Wall. ex G. Don	t	pde	3	gro	da bb/df mxf egf eg/pine	500-1600	jl-fb	sp-mr	mr-fb	often changing leaves in February
<i>Schreberia swietenoides</i> Roxb.	t	pd	1	gro	dof bb/df	450-550	my	ja-jn	my-ja	
Apocynaceae										
<i>Aganosma cymosa</i> (Roxb.) G. Don var. <i>cymosa</i>	wc	pe	1	gro	streams in dof	350-400	my-jl	oc-nv	ja-dc	syn. = <i>Aganosma harmadiana</i> Pierre ex Spire
<i>Aganosma marginata</i> (Roxb.) G. Don	wc	pd	3	gro	dof bb/df mxf	450-825	ap-my	sp-dc	my-fb	
<i>Aganosma siamensis</i> Craib	wc	pe	2	gro	mxm egf	650-1000	ap-my	sp-dc	ja-dc	topotype
<i>Alstonia rostrata</i> Fischer	t	pe	2	gro	egf	1100-1300	jn-jl	mr-my	ja-dc	syn. = <i>Alstonia glaucescens</i> (K. Sch.) Mona
<i>Alstonia scholaris</i> (L.) R. Br. var. <i>scholaris</i>	t	pd	3	gro	mxm egf	350-1200	oc-dc	fb-ap	mr-fb	often dropping leaves in February, tropophyllous
<i>Alyxia siamensis</i> Craib	wc	pe	3	gro	egf eg/pine	700-1500	jl-ag	sp-ja	ja-dc	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Amalocalyx microlobus</i> Pierre ex Spire	wc v	pd	3	gro	bb/df mx	350-1200	my-sp	(sp) nv-fb	my-fb	
<i>Carissa spinarum</i> L.	s	pd	2	gro	dof	375-375	ag-sp	nv-ja	ap-fb	syn. = <i>Carissa cochinchinensis</i> Pierre ex Pit.
<i>Chonemorpha megacalyx</i> Pierre ex Spire	wc	pe	2	gro	mx	650-900	jn-jl	?	ja-dc	
<i>Chonemorpha verrucosa</i> (Bl.) D. J. Midd.	wc	pe	2	gro	mx egf streams	800-1500	ap-jn	nv-ja	ja-dc	along streams, syn. = <i>Rhynchodia verrucosa</i> (Bl.) Wood.
<i>Holarthra pubescens</i> (Buch.-Ham.) Wall. ex G. Don	t	pd	3	gro	bb/df mx	350-1050	mr-jn	sp-ja	ap-mr	
<i>Ichnocarpus frutescens</i> (L.) W. T. Ait.	wc (v)	pe	3	gro	da sg	350-400	oc-nv	?	ja-dc	
<i>Melodinus cochinchinensis</i> (Lour.) Merr.	wc	pe	3	gro	streams in egf	1075-1450	ap-my	dc-fb	ja-dc	topotype of <i>Melodinus henryi</i> Craib
<i>Parameria laevigata</i> (Juss.) Mold.	wc	pe	3	gro	mx	600-850	oc-dc	fb-mr	ja-dc	
<i>Potisia laxiflora</i> (Bl.) O.K.	wc	pe	3	gro	mx egf	750-950	ap-my	nv-ja	ja-dc	
<i>Rauvolfia serpentina</i> (L.) Bth. ex Kurz	h	pd	3	gro	bb/df	350-550	(fb) my-oc	jl-dc	my-fb	
<i>Rauvolfia verticillata</i> (Lour.) Baill.	l (h)	pd	3	gro	egf eg/pine	700-1685	fb-jn	ag-ja	my-fb	syn. = <i>Rauvolfia ophiorrhizoides</i> (Kurz) Kerr
<i>Trachelospermum asiaticum</i> (Sieb. & Zucc.) Nakai	wc	pe	3	gro	streams dof bb/df	375-700	mr-dc	oc-mr	ja-dc	syn. = <i>Trachelospermum gracilipes</i> Hk. f.
<i>Urceola micrantha</i> (Wall. ex G. Don) D. J. Midd.	wc	pe	3	gro	mx	900-1000	sp-oc	ja-fb	ja-dc	
<i>Wrightia arborea</i> (Dennst.) Mabb.	t	pd	3	gro	bb/df	350-500	my-jn	jl-sp	my-fb	
Asclepiadaceae										
<i>Atherolepis pierrei</i> Cost. var. <i>glabra</i> Kerr	v	pd	2	gro	da sg	350-400	jl-ag	nv-dc	my-ja	
<i>Ceropegia sootepensis</i> Craib	v	pd	2	gro	dof	450-750	jn-ag	?	ap-nv	topotype
<i>Cryptolepis buehneri</i> Roem. & Schult.	v	pe	2	gro	bb/df	375-375	jn-jl	dc-ja	ja-dc	
<i>Cynanchum corymbosum</i> Wight	v	pe	3	gro	egf	1350-1500	mr-ap	sp-oc	ja-dc	
<i>Dischidia imbricata</i> (Bl.) Steud.	h cr	pe	3	epi	dof bb/df	500-900	my-jn	jn-jl	ja-dc	
<i>Dischidia major</i> (Vahl) Merr.	v cr	pe	4	epi	eg/pine dof	450-1525	mr-ap	my-jn	ja-dc	
<i>Dischidia nummularia</i> R. Br.	v cr	pe	4	epi	dof	400-900	mr-ap	my-jl	ja-dc	
<i>Dischidia obcordata</i> (N. E. Br.) Maxw. & Donk.	h	pe	2	epi	eg/pine	1200-1200	sp	?	ja-dc	new record: Maxwell Nat. Hist. Bull. Siam Soc. 39:1(1991) 78.
<i>Dischidia singularis</i> Craib	h	pe	2	epi	mx egf	825-1300	ag-sp	nv-dc	ja-dc	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Dischidia</i> sp.	h	pe	2	epi	egf	950–1200	nv–dc	nv–ap	ja–dc	
<i>Genianthus laurifolius</i> (Roxb.) Hk. f.	v	pe	2	gro	egf	1300–1450	fb–mr	?	ja–dc	
<i>Gynemema griffithii</i> Craib	v	pd	3	gro	dof	450–500	jn–jl	sp–ja	my–dc	topotype
<i>Heterostemma siamicum</i> Craib	v	pe	3	gro	bb/df	400–900	sp–oc	dc–ja	ja–dc	topotype
<i>Hoya engleriana</i> Hoss.	h	pe	1	epi	egf eg/pine	1550–1685	sp–oc	ap–my	ja–dc	topotype
<i>Hoya kerrii</i> Craib	v (cr)	pe	2	epi epl	dof da in egf	450–1300	my–jl	jl–sp	ja–dc	mostly epiphytic, topotype
<i>Hoya siamica</i> Craib	v	pe	2	epi epl	egf	1500–1600	my–jn	ja–mr	ja–dc	often epiphytic, topotype
<i>Hoya thomsonii</i> Hk. f.	v	pe	2	epi epl	rocks in mx/egf	875–1075	sp–oc	ja–fb	ja–dc	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 47:2 (1999) 259; more commonly epilithic
<i>Hoya verticillata</i> (Vahl) G. Don var. <i>verticillata</i>	v	pe	4	epi or	dof bb/df mx/	350–800	fb–mr	jn–ag	ja–dc	syns. = <i>Hoya acuta</i> Haw. var. <i>acuta</i> , <i>Hoya parasitica</i> (Roxb.) Wall. ex Wight var. <i>parasitica</i>
<i>Marsdenia cambodiensis</i> Cost.	v	pd	2	gro	dof	900–900	my–jn	?	ap–ja	
<i>Marsdenia</i> aff. <i>ericaulis</i> Kerr	v	pe	2	gro	egf	1375–1375	?	nv–dc	ja–dc	
<i>Marsdenia</i> aff. <i>tenacissima</i> (Roxb.) Moon	v	pe	2	gro	egf	1580–1580	mr	?	ja–dc	
<i>Marsdenia tenacissima</i> (Roxb.) Moon	wc (v)	pe	3	gro	bb/df	650–900	my–jl	ja–fb	ja–dc	
<i>Marsdenia thyrsiflora</i> Hk. f.	v	pe	3	gro	dof bb/df	350–400	jn–jl	dc–fb	ja–dc	
<i>Marsdenia tinctoria</i> R. Br.	v	pe	3	gro	da egf	950–1350	ap–jn	nv–ja	ja–dc	open areas
<i>Myriopteris extensum</i> (Wight) K. Sch.	v	a	2	gro	dof da	350–350	ag–oc	ja–fb	my–fb	thickets
<i>Oxystelma esculentum</i> (L. f.) R. Br.	v	pe	3	gro	egf	1450–1600	my–jl	?	ja–dc	
<i>Raphistemma pulchellum</i> (Roxb.) Wall.	v (h)	pd	2	gro	bb/df	450–450	sp–oc	mr–ap	my–fb	
<i>Streptocaulon juvenas</i> (Lour.) Merr.	v	pe	4	gro	dof bb/df mx/da	375–1375	jl–oc	nv–ja	ja–dc	
<i>Telosma pallida</i> (Roxb.) Craib	v	pd	2	gro	bb/df	350–350	my–jn	jl–sp	my–fb	
<i>Toxocarpus</i> aff. <i>griffithii</i> Dcne.	wc (v)	pe	2	gro	egf	1350–1450	mr–ap	?	ja–dc	wet areas
<i>Toxocarpus villosus</i> (Bl.) Dcne.	v	pe	3	gro	da bb/df sg	350–450	nv–dc	mr–ap	ja–dc	
<i>Tylophora fasciculata</i> Ham. ex Wight	v	pd	2	gro	dof	400–400	my–jn	?	my–fb	
<i>Tylophora</i> aff. <i>himalaica</i> Hk. f.	v	pe	2	gro	egf	1400–1400	ag	?	ja–dc	
<i>Tylophora purpurea</i> Wall. ex Wight	v	pd	2	gro	bb/df	350–350	oc–nv	?	my–fb	
<i>Tylophora rotundifolia</i> Ham. ex Wight	v	pde	2	gro	dof eg	500–1450	mr–ag	jl–sp	my–fb	evergreen above 1000 m
<i>Tylophora sootepensis</i> Craib	h (v)	pe	2	gro	egf	1050–1450	my–sp	ag–oc	ja–dc	topotype
<i>Tylophora</i> sp.	v	pd	2	gro	bb/df	525–525	?	?	my–fb	
<i>Zygostelma benthamii</i> Baill.	v	pe	2	gro	dof bb/df	350–675	oc–nv	?	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Loganiaceae										
<i>Buddleja asiatica</i> Lour.	l	ped	3	gro	bb/df open egf sg	625–1575	oc–fb	dc–ap	my–ap	often unnecessarily put in Buddlejaceae, often evergreen above 1100 m
<i>Fagraea ceilanica</i> Thunb.	s (t)	pe	1	epi, less often gro or epl	egf	1500–1500	jn–jl	nv–ja	ja–dc	infrequently a tree
<i>Mitreola petiolata</i> (Geml.) Torr. & Gray	h	a	3	gro wee	bb/df	400–600	sp–nv	oc–dc	my–ja	syn. = <i>Cynoctonum mitreola</i> (L.) Britt.
<i>Strychnos nux-vomica</i> L.	t (l)	pd	3	gro	dof bb/df	350–900	mr–ap	dc–my	ap–fb	
Gentianaceae										
<i>Canscora decussata</i> (Roxb.) Schult.	h	a	3	gro	bb/df streams	425–600	oc–dc	nv–ja	jn–ja	
<i>Canscora diffusa</i> (Vahl) G. Don	h	a	3	gro	streams in dof	400–650	dc–mr	ja–ap	jl–ap	
<i>Exacum pteranthum</i> Wall. ex Griseb.	h	a	3	gro	bb/df	875–875	sp–oc	nv–dc	my–ja	
<i>Exacum sutapense</i> Hoss. ex Craib	h	a	3	gro	eg/pine	1500–1650	oc–dc	nv–ja	jn–ja	topotype
<i>Exacum tetragonum</i> Roxb.	h	a	3	gro	dof	600–950	sp–nv	oc–dc	jn–ja	
<i>Sweritia angustifolia</i> Ham. ex D. Don	h	a	3	gro	dof eg/pine	600–1575	oc–dc	nv–ja	jn–ja	
<i>Sweritia kachinensis</i> Lace	h	a	3	gro	eg/pine	1550–1650	nv–dc	dc–ja	jn–ja	
Hydrophyllaceae										
<i>Hydrolea zeylanica</i> (L.) Vahl	h	a	2	gro	streams in da, marsh in eg/pine	350–1100	nv–fb	dc–mr	my–ap	moist fields, wet places
Boraginaceae										
<i>Cordia mhaya</i> Kerr	t	pd	1	gro	bb/df	425–425	fb	ag	my–ap	Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 79.
<i>Cynoglossum lanceolatum</i> Forssk.	h	a	3	gro	eg/pine	1100–1680	jn–dc	ag–ja	ap–ja	
<i>Ehretia acuminata</i> R. Br. var. <i>acuminata</i>	t	pe	2	gro	egf	1200–1300	mr–ap	nv–ja	ja–dc	
<i>Heliotropium indicum</i> L.	h	a	4	gro wee	da	350–750	jn–nv	ag–nv	my–dc	
<i>Tournefortia intonsa</i> Kerr	h (v)	pe	2	gro	bb/df mx f eg/pine	375–1100	ja–mr	mr–my	ja–dc	topotype
Convolvulaceae										
<i>Argyria aggregata</i> (Roxb.) Choisy	wc	pd	3	gro	da in egf eg/pine	1075–1400	nv–dc	fb–mr	my–ap	
<i>Argyria capitiformis</i> (Poir.) Oost.	v	pe	3	gro	da dof egf eg/pine	1050–1685	sp–dc	dc–fb	ja–dc	
<i>Argyria henryi</i> (Craib) Craib	v	pe	3	gro	da bb/df mx f eg/pine	600–1450	oc–nv	dc–fb	ja–dc	topotype
<i>Argyria kerrii</i> Craib	v	pd	3	gro	dof bb/df	750–950	ag–dc	nv–ja	my–ja	topotype
<i>Argyria obtecta</i> (Choisy) Cl.	v (wc)	pe	3	gro	da mx f open egf	950–1650	oc–nv	ja–fb	ja–dc	
<i>Argyria osyrensis</i> (Roth) Choisy	v	pe	4	gro	bb/df	800–950	ag–oc	mr–ap	ja–dc	
<i>Argyria wallichii</i> Choisy	v	pe	3	gro	bb/df	500–700	oc–dc	nv–a	ja–dc	
<i>Blinkworthia lycioides</i> Choisy	s (h)	pd	3	gro	dof	375–500	ag–sp	dc–ja	my–ja	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cuscuta reflexa</i> Roxb.	v	p	3	epi. par	da	350–1325	ap–fb	jn–mr	leafless	lacking chlorophyll, stems ja–dc
<i>Erycibe subspicata</i> Wall. ex G. Don	wc	pe	2	gro	egf mxf	550–1050	oc–ja	fb–mr	ja–dc	
<i>Evolvulus alsinoides</i> (L.) L. var. <i>hirsutus</i> (Lmk.) Oost.	cr h	pe	3	gro	da	350–500	(ja) ag–sp	sp–nv	ja–dc	
<i>Ipomoea aquatica</i> Forsk.	v (cr)	pe	3	gro aqu wee cul	wet places in da	350–650	de–my	ap–jn	ja–dc	
<i>Ipomoea cairica</i> (L.) Sw.	v	pe	4	gro	da sg	350–1400	ja–sp	mr–nv	ja–dc	often a weed
<i>Ipomoea hederifolia</i> L.	v	a	3	gro nat wee	bb/df	500–950	oc–dc	de–ja	my–fb	syn. = <i>Ipomoea angulata</i> Lmk.
<i>Ipomoea nil</i> (L.) Roth var. <i>nil</i>	v	a	3	gro	bb/df da sg	375–450	nv–ja	dc–fb	jl–mr	
<i>Ipomoea obscura</i> (L.) Ker–Gawl.	v	a	3	gro wee	da, sg	350–450	ag–fb	oc–mr	my–fb	
<i>Ipomoea pes-tigridis</i> L.	v	pe	3	gro	da, sg	400–900	ap–jl	jn–oc	ja–dc	open secondary growth
<i>Ipomoea siamensis</i> Craib	v	pe	2	gro	dof streams	600–600	jl–sp	nv–dc	ja–dc	topotype
<i>Ipomoea sinensis</i> (Desr.) Choisy	v	pd	2	gro	dof	375–375	jn–oc	jl–nv	my–nv	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 40:2 (1992) 186; syn. = <i>Ipomoea soluta</i> Kerr
<i>Ipomoea</i> sp.	v (wc)	pe	2	gro	egf streams	1050–1050	oc–nv	?	ja–dc	
<i>Jacquemontia paniculata</i> (Burm. f.) Hall. f. var. <i>paniculata</i>	v	a	3	gro	da in dof bb/df sg	350–450	oc–dc	nv–ja	jn–fb	
<i>Merremia umbellata</i> (L.) Hall. f. ssp. <i>orientalis</i> (Hall. f.) Oost.	v	a	3	gro	da in dof bb/df streams	400–750	fb–mr	ap–jn	ap–my	open areas
<i>Merremia vitifolia</i> (Burm. f.) Hall. f.	v	pe	3	gro wee	da in bb/df mxf sg	375–1350	ja–fb	mr–my	ja–dc	open areas
<i>Operculina turpethum</i> (L.) S. Manso	v	a	3	gro wee	da	350–400	nv–fb	dc–mr	jl–fb	
<i>Porana racemosa</i> Roxb.	wc (v)	pe	3	gro	egf eg/pine da	1050–1650	oc–nv	dc–ja	ja–dc	
<i>Porana spectabilis</i> Kurz	wc	pe	2	gro	mxf	550–750	ja–fb	ap–my	ja–dc	
Solanaceae										
<i>Capsicum</i> aff. <i>chamaecerasus</i> Nees	h	a	2	gro	streams in dof bb/df	500–650	jn–ag	jl–sp	my–dc	
<i>Physalis angulata</i> L.	h	a	3	gro wee	da	350–1650	jl–oc	sp–nv	my–dc	
<i>Solanum barbisetum</i> Nees	h	pd	3	gro	bb/df mxf da	650–1500	my–ag	jl–oc	ap–ja	
<i>Solanum macrodon</i> Wall. ex Nees	l (h)	pe	3	gro	da egf	1050–1550	jl–ag	ag–nv	ja–dc	syn. = <i>Lycianthes macrodon</i> (Wall. ex Nees) Bitt.
<i>Solanum nigrum</i> L.	h	a	3	gro nat wee	da bb/df streams	350–1500	jn–fb	ag–mr	my–dc	
<i>Solanum torvum</i> Sw.	h	a pe	3	gro	da wee cul	350–1500	ag–ja	sp–my	ja–dc	fruits edible, cultivated and escaping
<i>Solanum verbascifolium</i> L.	l s h	pe	3	gro nat	da sg	350–1050	ag–dc	oc–mr	ja–dc	
Scrophulariaceae										
<i>Adenosma hirsuta</i> (Miq.) Kurz	h	a	3	gro	dof bb/df moist areas	500–600	sp–nv	nv–dc	my–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Alectra avensis</i> (Bth.) Merr.	h	a	3	gro	dof bb/df eg/pine cult da	700–1620	oc–dc	dc–ja	jl–ja	
<i>Buchnera cruciata</i> B.–H. ex D. Don var. <i>cruciata</i>	h	a	3	gro	dof bb/df	500–900	nv–fb	dc–mr	jl–mr	
<i>Centranthera cochinchinensis</i> (Lour.) Merr. ssp. <i>latea</i> (Hara) Yama.	h	a	2	gro	dof	350–600	sp–nv	nv–ja	jl–ja	
<i>Limnophila chinensis</i> (Osb.) Merr.	h	a	2	gro	ponds in bb/df	525–525	nv–ja	ja–mr	jn–ja	
<i>Limnophila hayatae</i> Yama.	h	a	2	agu	marsh egf	375–375	oc–nv	nv–dc	jn–ja	
<i>Limnophila indica</i> (L.) Druce	h	pe	2	gro	ponds in bb/df eg/pine	650–1350	oc–nv	?	ja–dc	
<i>Limnophila repens</i> (Bth.) Bth.	h	a	2	gro	dof marsh	550–550	nv–dc	dc–ja	jn–ja	
<i>Limnophila rugosa</i> (Roth) Merr.	h	a or pe	2	gro	dof bb/df streams	550	oc–dc	dc–ja	ja–dc	
<i>Lindenbergia indica</i> (L.) Var.	h	a	3	gro epl	dof bb/df mxl	450–1050	jl–dc	ag–ja	my–ja	
<i>Lindenbergia philippensis</i> (Cham.) Bth.	h	apd	3	gro wee	dof da in egf	500–1050	fb–mr	mr–ap	jl–ap	
<i>Lindernia anagallis</i> (Burm. f.) Penn.	h	a	2	gro aqu	marsh da bb/df	375–500	oc–dc	nv–ja	my–dc	
<i>Lindernia antipoda</i> (L.) Aist.	h	ped	3	gro wee	dof mxl egf da cult	350–1500	jl–fb	ag–mr	ja–dc	
<i>Lindernia ciliata</i> (Colson.) Penn.	h	a	3	gro wee	dof bb/df	500–950	oc–dc	nv–ja	my–dc	
<i>Lindernia crustacea</i> (L.) F. Muell. var. <i>crustacea</i>	h	a	3	gro wee	dof egf eg/pine	350–1620	my–dc	ag–ja	my–dc	
<i>Lindernia hookeri</i> (Cl. ex Hk. f.) Wett. var. <i>cochinchinensis</i> Bon.	h	a	2	gro	dof	500–500	oc–dc	nv–ja	my–ja	
<i>Lindernia montana</i> (Bl.) Koord.	h	a	2	gro	egf	1050–1050	sp–nv	oc–dc	my–dc	
<i>Lindernia pusilla</i> (Willd.) Bold.	h	a	3	gro wee	da	350–1575	jl–dc	ag–ja	my–dc	streams, marshes, open & moist places
<i>Lindernia viscosa</i> (Horn.) Bold.	h	a	2	gro	streams bb/df mxl da	500–950	jn–nv	jl–dc	my–dc	
<i>Mazus pumilus</i> (Burm. f.) Steen. var. <i>pumilus</i>	h	a	3	gro	eg/pine	1175–1650	sp–dc	nv–ja	my–ja	
<i>Scoparia dulcis</i> L.	h	a	4	gro nat wee	da	350–1650	jn–ja	jl–fb	my–dc	
<i>Sopubia fastigiata</i> Bon.	h	a	2	gro	dof marsh	500–600	oc–nv	nv–dc	jl–dc	wet places
<i>Sopubia trifida</i> B.–H. ex D. Don	h	a	3	gro	eg/pine	1500–1650	oc–nv	nv–ja	jn–ja	
<i>Siriga asiatica</i> (L.) O.K.	h	a	3	gro	dof	600–900	jl–nv	ag–nv	jn–dc	root parasite
<i>Siriga masuria</i> (B.–H. ex Bth.) Bth.	h	a	2	gro	dof	525–900	my–dc	jn–ja	ap–ja	root parasite
<i>Torenia benthiana</i> Hance	h	a	2	gro	streams marsh in da bb/df	550–550	ag–oc	sp–nv	jn–nv	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989) 183.
<i>Torenia flava</i> B.–H. ex Bth.	h	a	3	gro	streams marsh in da bb/df	425–1200	jl–nv	ag–nv	jn–nv	often a weed

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Torenia thorelii</i> Bon.	h	a	3	gro	dof eg/pine	350–1300	jl–nv	ag–nv	jn–ja	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989) 183.
<i>Torenia violacea</i> (Aza. ex Blanco) Pell.	h	a	3	gro	bb/df mxf egf da	550–1350	jl–oc	ag–nv	my–dc	
Orobanchaceae										
<i>Aeginetia indica</i> Roxb.	h	pd	3	par gro	da dof bb/df mxf egf eg/pine	375–1650	ag–nv	sp–dc	leafless	root parasite, lacking chlorophyll
<i>Aeginetia pedunculata</i> Wall.	h	pd	2	sap par gro	dof eg/pine	450–1450	jl–nv	ag–nv	leafless	lacking chlorophyll
Lentibulariaceae										
<i>Utricularia aurea</i> Lour.	h	ape	2	gro	ponds in da cult	350–450	ap–oc	jn–nv	leafless	also in flooded fields, ditches
<i>Utricularia bifida</i> L. var. <i>bifida</i>	h	a	3	gro	wet places in dof	375–650	nv–mr	dc–ap	jl–ap	
<i>Utricularia caerulea</i> L.	h	a	3	gro	wet places in dof	375–750	sp–fb	oc–mr	jn–dc	topotype of <i>Utricularia kerrii</i> Craib and <i>Utricularia sootepensis</i> Craib
<i>Utricularia exoleta</i> R. Br.	h	pe	1	aqu	ponds in dof eg/pine	550–1400	nv–fb	dc–mr	ja–dc	
<i>Utricularia scandens</i> Benj.	h	a	2	gro	wet places in mxf eg/pine	750–1075	nv–ja	dc–fb	jl–fb	
<i>Utricularia striatula</i> Sm.	h	a	2	epl	wet places on rocks in mxf eg/pine	850–1400	ag–nv	sp–dc	jl–dc	
Gesneriaceae										
<i>Aeschynanthus hillebrandii</i> Hemsl.	s (h)	pe	3	epl	eg/pine	1200–1685	oc–mr	dc–my	ja–dc	topotype of <i>Aeschynanthus persimilis</i> Craib
<i>Aeschynanthus hosseusii</i> Pell.	s (h)	pe	3	epl	eg/pine	1025–1525	jl–oc	sp–dc	ja–dc	topotype of <i>Aeschynanthus macrocalyx</i> Hoss.
<i>Aeschynanthus lineatus</i> Craib	s v (h)	pe	2	epl gro	eg/pine	1685–1685	jl–sp	nv–dc	ja–dc	
<i>Aeschynanthus macranthus</i> (Merr.) Pell.	h	pe	2	epl	streams in mxf egf	850–950	oc–nv	ja–mr	ja–dc	
<i>Chirita anachoreta</i> Hance	h	a	3	gro epl	rocks streams in mxf egf	700–1100	sp–oc	oc–nv	my–nv	
<i>Chirita brevipes</i> Cl.	h	a	2	epl	egf streams	1400–1500	my–jn	jl–ag	mr–nv	
<i>Chirita hamosa</i> Wall. ex R. Br.	h	a	2	epl	rocks streams in bb/df mxf	600–700	ag–oc	sp–nv	jn–nv	syn. = <i>Chirita hamosa</i> Wall. ex R. Br. var. <i>unifolia</i> Cl.
<i>Chirita micromusa</i> Burt	h	a	3	epl	rocks moist areas in mxf egf	600–1100	ag–nv	sp–dc	jn–dc	
<i>Chirita pumila</i> D. Don	h	a	2	gro	eg/pine	1400–1650	ag–oc	sp–nv	jn–nv	
<i>Didymocarpus aureoglandulosus</i> Cl.	h	pd	3	epl	rocks in mxf egf eg/pine	875–1550	ag–oc	sp–nv	jn–nv	topotype, also topotype of <i>Didymocarpus rodderi</i> W. W. Sm. & Ban. var. <i>siamensis</i> W. W. Sm.
<i>Didymocarpus kerrii</i> Craib	h	pd	3	epl	rocks in egf eg/pine	1050–1300	ag–oc	oc–nv	jn–nv	topotype, also topotype of <i>Didymocarpus squamosus</i> Craib
<i>Didymocarpus siamensis</i> Barn.	h	a	3	gro	rocks in mxf egf	650–1475	ag–sp	(ap) oc–nv	jn–nv	
<i>Didymocarpus waitianus</i> Craib	h	a	3	epl	egf eg/pine	1450–1450	jl–sp	sp–nv	my–nv	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Epithema carnosum</i> (D. Don) Bth.	h	pd	3	epl	rocks moist areas in bb/df egf	675–1300	jl–oc	ag–nv	my–nv	
<i>Lepidobaea multiflora</i> (Cl.) Gamb.	h (s)	pd	2	epl	streams in mxf egf	825–900	jl–ag	ag–nv	my–nv	mostly on cliffs along streams
<i>Paraboea kerrii</i> (Craib) Burtt	l (h)	pd	2	epl	rocks streams in dof bb/df mxf egf	500–1000	jl–sp	sp–ja	my–mr	topotype, basionym = <i>Boea kerrii</i> Craib
<i>Petrocosmea kerrii</i> Craib	h	a	2	epl	rocks mxf egf	600–1575	ag–sp	ag–oc	jn–oc	topotype
<i>Rhynchoglossum obliquum</i> Bl.	h	a	3	epl less often epl or gro	rocks streams in bb/df mxf egf	550–1250	sp–dc	oc–ja	jl–ja	
<i>Rhynchotechum ellipticum</i> DC. ex Cl.	h	pe	3	gro	streams in egf	1050–1450	jl–sp	sp–nv	ja–dc	
<i>Rhynchotechum obovatum</i> (Griff.) Burtt	h	pe	3	gro	egf streams	1350–1580	jl–sp	ag–nv	ja–dc	
<i>Stauranthura grandiflora</i> Bth.	h	pe	2	gro	mxm streams	550–700	jl–sp	ag–oc	jn–oc	
<i>Streptocarpus orientalis</i> Craib	h	a	3	epl	rocks in moist places in bb/df mxf	450–950	ag–nv	sp–dc	jn–dc	topotype
Ignoniaceae										
<i>Fernandoa adenophylla</i> (Wall. ex G. Don) Steen.	t	pd	3	gro	bb/df mxf	425–700	jl–nv	ja–fb	my–fb	
<i>Jacaranda obtusifolia</i> H.B. K. sp. rhombifolia (G.F. W. Meij.) Gent.	t	pe	3	gro int cul	da	1070–1400	mr–ap	oc–nv	ja–dc	ornamental
<i>Markhamia stipulata</i> (Wall.) Seem. ex K. Sch. var. <i>kerrii</i> Sprague	t	pd	3	gro	bb/df mxf eg/pine da in egf	950–1550	nv–mr	sp–ap	my–fb	
<i>Markhamia stipulata</i> (Wall.) Seem. ex K. Sch. var. <i>stipulata</i>	t	pd	3	gro	da bb/df mxf	575–1275	nv–mr	sp–ap	my–fb	
<i>Millingtonia hortensis</i> L. f.	t	pd	3	gro	bb/df	350–700	sp–oc	fb–mr	my–fb	
<i>Oroxylum indicum</i> (L.) Kurz	t (l)	pd	3	gro	bb/df mxf sg da	350–1400	jn–oc	ja–mr	ap–dc	
<i>Radermachera glandulosa</i> (Bl.) Miq.	t	pe	2	gro	egf	1000–1000	fb–mr	nv–ja (ap)	ja–dc	
<i>Radermachera ignea</i> (Kurz) Steen.	t (l)	pd	2	gro	bb/df mxf	525–750	mr–my	oc–dc	mr–fb	
<i>Stereospermum colais</i> (B.-H. ex Dillw.) Mabb.	t	pd	3	gro	da bb/df mxf da in egf	900–1350	ap–my	nv–mr	my–fb	
<i>Stereospermum fimbriatum</i> (Wall. ex G. Don) DC.	t	pd	2	gro	dsg bb/df	350–600	fb–mr	my–jn	my–fb	
<i>Stereospermum neuranthum</i> Kurz	t	pd	3	gro	dof bb/df mxf egf eg/pine	400–850	my–jn	nv–ja	my–fb	
Canthaceae										
<i>Andrographis laxiflora</i> (Bl.) Lindau	h	a	4	gro	dof bb/df do/pine da in egf	350–1550	jl–ja	sp–fb	jn–fb	
<i>Andrographis paniculata</i> (Burm. f.) Nees	h	a	2	gro	dof	450–450	ag–oc	sp–dc	jn–dc	
<i>Asystasia hispida</i> Imlay	h	a	3	gro	bb/df egf eg/pine	650–1350	oc–dc	nv–ja	jn–ja	topotype

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Asystasia salicifolia</i> Craib var. <i>salicifolia</i>	h	a	3	gro	eg/pine	1200–1400	sp-dc	nv-ja	jn-ja	topotype
<i>Asystasiella neesiana</i> (Wall.) Lindau	h	a	2	gro	bb/df mx	520–800	sp-nv	nv-dc	my-dc	
<i>Barleria cristata</i> L.	h	pd	3	gro	dof bb/df egf	350–1000	sp-nv	nv-fb	jn-fb	
<i>Barleria strigosa</i> Willd.	h	pd	3	gro	dof (streams)	350–1350	sp-nv	nv-fb	jn-fb	topotype of <i>Barleria siamensis</i> Craib
<i>Choresthes lanceolaria</i> (T. And.) B. Han.	h	pe	2	gro	bb/df mx egf streams in bb/df mx egf	650–1500	ja-ap	mr-my	ja-dc	topotype of <i>Asystasia kerrii</i> Craib and <i>Choresthes racemiflora</i> Brem. var. <i>racemiflora</i>
<i>Dicliptera roxburghiana</i> Nees	h	a	3	gro	bb/df mx da	350–1050	dc-mr	ja-ap	jl-ap	
<i>Dipteracanthus repens</i> (L.) Hassk.	h	pe	3	gro	bb/df da	450–550	my-sp	jl-nv	ja-dc	
<i>Eranthemum tetragonum</i> Wall. ex Nees	h	pd	3	gro	bb/df mx	650–1000	ja-fb	fb-my	jn-ap	
<i>Gymnostachyum signatum</i> (R. Ben.) Inlay	h	a	2	gro	bb/df	575–1025	ag-oc	sp-nv	jl-dc	
<i>Hemigraphis glaucescens</i> (Nees) Cl.	h	a	3	gro	bb/df	350–750	dc-ja	fb-ap	jn-my	
<i>Hypoestes</i> (?) <i>purpurea</i> R. Br.	h	pe	2	gro	da in bb/df egf	650–1050	oc-ja	dc-fb	ja-dc	
<i>Justicia comatum</i> (L.) Lmk.	h	a	2	gro nat wee	da	350–400	oc-dc	dc-fb	jn-fb	wet places
<i>Justicia procumbens</i> L.	h	a	4	gro	bb/df mx	600–1650	sp-ja	oc-fb	my-dc	topotype of <i>Rostellularia chiengmaiensis</i> Brem.
<i>Justicia quadrifaria</i> (Nees) T. And.	h	pe	4	gro	mx egf eg/pine	600–1685	ag-dc	sp-ja	ja-dc	
<i>Justicia</i> aff. <i>quadrifaria</i> (Nees) T. And.	h	pe	2	gro	egf	1375–1375	jn-jl	jl-sp	ja-dc	
<i>Justicia ventricosa</i> Wall.	s	pe	2	gro	streams in bb/df mx	600–700	fb-mr	mr-my	ja-dc	infrequently grows as a herb
<i>Mananthes pallida</i> (Im.) Brem.	h	pd	2	gro	bb/df	550–550	nv-dc	dc-fb	jn-fb	basinym = <i>Justicia pallida</i> Im.
<i>Nelsonia canescens</i> (Lmk.) Spr.	h	pd	3	gro wee	streams in da	350–850	ja-fb	fb-ap	my-dc	moist fields
<i>Neuracanthus tetragonostachyus</i> Nees ssp. <i>tetragonostachyus</i>	h	a	3	gro	bb/df	350–500	ja-fb	fb-ap	jn-ap	
<i>Ophiorrhiziphyllon macrobotryum</i> Kurz	h	a or pe	3	gro	egf streams	1250–1500	fb-mr	mr-my	ja-dc	
<i>Perileptis siamensis</i> (Cl.) Brem.	h	pd	3	gro	bb/df mx eg/pine	400–1300	dc-fb	ja-ap	jl-ap	topotype of syntype
<i>Peristrophe bicalyculata</i> (Retz.) Nees	h	a	2	gro	bb/df	350–350	dc-fb	ja-mr	jl-mr	
<i>Peristrophe lanceolaria</i> (Roxb.) Nees	h	a or pd	3	gro	bb/df mx	500–600	ja-mr	mr-my	jl-my	
<i>Phaulopsis dorsiflora</i> (Retz.) Sant.	h	pe	3	gro	da in: bb/df mx open egf	350–1300	dc-ja	fb-mr	ja-dc	
<i>Phlogacanthus curviflorus</i> (Wall.) Nees var. <i>curviflorus</i>	l (s)	pe	3	gro	streams in mx egf	650–1450	nv-ja	fb-ap	ja-dc	also grows as a herb
<i>Pseuderanthemum</i> aff. <i>crenulatum</i> (Wall. ex Lindl.) Radlk.	h	pe	2	gro	streams in mx	700–750	nv-ja	fb-my	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Pseuderanthemum latifolium</i> (Vahl) B. Han.	l (s, h)	pe	3	gro	streams in mxf egf	650–1050	oc-dc	dc-fb	ja-dc	
<i>Pseuderanthemum parishii</i> (T. And.) Lindau	h	pd	3	gro	streams in bb/df mxf	650–900	dc-fb	fb-ap	jn-ap	topotype of paratype of <i>Pseuderanthemum siamensis</i> Im.
<i>Ruellia tuberosa</i> L.	h	pd	3	gro wee	da	350–450	my-sp	ag-oc	jn-mr	
<i>Rungia parviflora</i> (Retz.) Nees var. <i>ciliata</i> Brem.	h	a	3	gro	bb/df mxf eg/pine	625–1300	oc-dc	nv-fb	jn-ja	topotype
<i>Sericocalyx quadrifarius</i> (Wall. ex Nees) Brem.	s (h)	pd	3	gro	bb/df mxf egf	400–1200	oc-ja	dc-mr	jn-mr	also grows as a herb
<i>Sericocalyx schomburgkii</i> (Craib) Brem.	s	pe	2	cul	bb/df	350–550	fb-mr	?	ja-dc	ornamental
<i>Staurogyne obtusa</i> (Nees) O.K.	h	a	2	gro	mx	825–825	ja-fb	mr-ap	my-dc	
<i>Strobilanthes anfractuosa</i> Cl. ex Hoss.	h	pe	3	gro	bb/df mxf egf	500–1685	ja-fb	mr-ap	ja-dc	syn. = <i>Goldfussia anfractuosa</i> (Cl. ex Hoss.) Brem.
<i>Strobilanthes apricus</i> (Hance) T. And. var. <i>pedunculata</i> (Craib) R. Ben.	h	pd	3	gro	dof	400–500	dc-ja	fb-ap	my-ap	topotype, basionym = <i>Guzlaffia pedunculata</i> Craib
<i>Strobilanthes argenteus</i> Inlay	s	pe	2	gro	mx streams	675–675	nv-fb	ja-ap	ja-dc	also a herb
<i>Strobilanthes consors</i> Cl. ex Hoss.	h	pe	2	gro	eg/pine	1685–1685	oc-fb	ja-fb	ja-dc	topotype
<i>Strobilanthes imbricatus</i> Nees	h (l)	pe	3	gro	eg/pine	1250–1650	sp-dc	dc-fb	ja-dc	topotype of <i>Parasymphysis kerrii</i> Brem.
<i>Strobilanthes</i> aff. <i>mucronato-productus</i> Lindl.	l s	pe	2	gro	streams in bb/df mxf	775–775	dc-ja	fb-ap	ja-dc	
<i>Strobilanthes rubro-glandulosus</i> Craib	h, s	pd	1	gro	bb/df	1000	dc-fb	?	ja-mr	stream valleys
<i>Strobilanthes serratus</i> Im.	h	pe	3	gro	egf streams	1350–1500	oc-mr	ja-my	ja-dc	
<i>Strobilanthes viscidus</i> Im.	s (h)	pd	3	gro	streams in egf	1000–1350	sp-mr	nv-my	jn-my	topotype of paratype, fruits & seeds described: Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 80.
<i>Thunbergia alata</i> Boj. ex Sims	v	pe	2	gro int cul	da	1025–1025	my-jn	jl-ag	ja-dc	escaped cultivation
<i>Thunbergia coccinea</i> Wall.	v	pe	2	gro	streams in egf	1400–1550	sp-nv	nv-ja	ja-dc	
<i>Thunbergia geoffrayi</i> R. Ben.	v	pe	3	gro	da mxf egf	600–1375	dc-mr	fb-ap	ja-dc	
<i>Thunbergia laurifolia</i> Lindl.	vc (v)	pe	4	gro	da bb/df mxf	350–900	sp-ap	fb-jn	ja-dc	thickets
<i>Thunbergia similis</i> Craib	v	ped	3	gro	da bb/df mxf eg/pine egf	450–1650	ag-oc	sp-nv	ja-dc	evergreen above 1200 m
Verbenaceae										
<i>Callicarpa arborea</i> Roxb. var. <i>arborea</i>	t	pd	3	gro	da sg	375–1250	ap-jl	ag-oc	my-mr	tropophyllous
<i>Callicarpa rubella</i> Lindl.	l (s)	pe	3	gro	egf da in eg/pine	1100–1450	jn-jl	oc-nv	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Clerodendrum disparifolium</i> Bl.	l	ped	3	gro	mxg egf	650-1300	ag-oc	nv-dc	ja-dc	topotype of <i>Clerodendrum garrutianum</i> Craib, sometimes leafless ap-my
<i>Clerodendrum fragrans</i> (Vent.) Willd.	l (s, h)	pe	3	gro	da sg	550-1300	my-jn	sp-oc	ja-dc	
<i>Clerodendrum glandulosum</i> Colebr. ex Lindl.	l	pe	4	gro	da	700-1550	sp-oc	nv-ja	ja-dc	open thickets
<i>Clerodendrum infortunatum</i> L.	l (h)	pe	3	gro	da egf	700-1550	fb-ap	ap-my	ja-dc	
<i>Clerodendrum paniculatum</i> L.	l (h)	pd	4	gro	bb/df da in egf	500-1200	ag-oc	nv-dc	my-fb	
<i>Clerodendrum serratum</i> (L.) Moon var. wallichii Cl.	l (s)	pd	4	gro	da dof bb/df mxg open egf eg/pine	500-1650	jl-sp	sp-dc	jn-mr	
<i>Congea tomentosa</i> Roxb. var. tomentosa	wc sc	pd	3	gro	bb/df mxg	350-1000	fb-ap	ap-jn	ap-fb	
<i>Gmelina arborea</i> Roxb.	t	pd	3	gro	dof bb/df mxg egf eg/pine	350-1475	fb-mr	mr-jn	my-ja	open places
<i>Lantana camara</i> L.	s	pe	3	gro	da/sg cul int	350-1200	ag-oc	nv-dc	ja-dc	ornamental, often escaping
<i>Premna fulva</i> Craib	wc	ped	3	gro	egf	950-1125	mr-ap	jn-ji	ja-dc	topotype; Maxwell, Nat. Hist. Siam Soc. 40:2 (1992) 187, sometimes leafless ap-my
<i>Premna herbacea</i> Roxb.	s (h)	pd	3	gro	dof	400-700	ap-my	jl-sp	my-fb	
<i>Premna latifolia</i> Roxb. var. latifolia	t	pd	3	gro	dof	375-725	my-ji	jn-ag	my-fb	
<i>Premna nana</i> Coll. & Hemsl.	s (h)	pd	3	gro	dof	450-700	ap-my	jn-ji	my-fb	
<i>Premna pyramidalis</i> Wall. ex Schauer	t	pd	2	gro	mxg egf	500-1475	jn-ji	sp-oc	my-fb (ap)	
<i>Premna scandens</i> Roxb.	wc	pe	2	gro	mxg	600-600	ag-oc	sp-nv	ja-dc	
<i>Premna villosa</i> Cl.	t	pd	3	gro	bb/df mxg da in egf	650-1100	my-jn	jl-ag	my-fb	
<i>Sphenodesme pentandra</i> Jack var. wallichiana (Schauer) Munir	wc	pd	3	gro	bb/df mxg	500-825	ja-mr	mr-my	my-mr	
<i>Symphorema involucrellum</i> Roxb.	wc	pd	3	gro	bb/df	350-950	fb-mr	mr-ap	ap-fb	
<i>Tectona grandis</i> L. f.	t	pd	2	gro	bb/df also cul	350-850	ag-dc	dc-mr	my-fb	severely exploited for its valuable wood, also commonly planted
<i>Vitex canescens</i> Kurz	t	pd	3	gro	bb/df df	350-850	mr-ap	ap-my	jn-ap	
<i>Vitex glabrata</i> R. Br.	t	pd	2	gro	sg da bb/df	350-350	ag-dc	dc-mr	my-fb	
<i>Vitex limoniifolia</i> Wall. ex Kurz	t	pd	3	gro	dof bb/df mxg	350-950	jl-sp	oc-dc	ap-fb	
<i>Vitex pedunculata</i> Wall. ex Schauer	t	pd	3	gro	dof bb/df mxg	350-900	mr-jn	my-ag	my-fb	
<i>Vitex quinata</i> (Lour.) Will.	t	pe	3	gro	mxg egf	625-1500	ap-my	ag-nv (ja)	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Labiatae										
<i>Actyospermum densiflorum</i> Bl.	h	a	3	gro	egf	1000-1200	oc-dc	nv-ja	my-ja	
<i>Ajuga bracteosa</i> Wall. ex Bth.	h	a	2	gro wee	da	1400-1475	mr-ap	ap-jn	my-dc	
<i>Anisometes indica</i> (L.) O.K.	h	a	3	gro	da bb/df eg/pine	350-1300	sp-nv	oc-dc	my-ja	
<i>Colquhounia elegans</i> Wall. var. <i>tenuiflora</i> Prain	s sc	pd	2	gro	eg/pine	1000-1650	ja-fb	fb-mr	my-mr	topotype of <i>Stachys siamensis</i> Musch., also a climber
<i>Elsholtzia blanda</i> H. Keng	h	a	3	gro	da eg/pine	1500-1685	nv-ja	dc-fb	jn-fb	
<i>Elsholtzia winitiana</i> Craib	h	pd	3	gro	eg/pine	1400-1685	dc-ja	ja-mr	jn-mr	topotype
<i>Eurysolen gracilis</i> Prain	h	a or pe (s) (l)	3	gro	egf	1100-1400	dc-ja	ja-mr	ja-dc	
<i>Gomphostemma lucidum</i> Wall. ex Bth.	h	pd	3	gro	da bb/df mxf egf	500-1550	jl-nv	sp-ja	ap-ja	topotype of <i>Gomphostemma intermedium</i> Craib
<i>Gomphostemma srobinilinum</i> Wall. ex Bth. var. <i>acaulis</i> (Kurz ex Hk. f.) Prain	h	pd	3	gro	bb/df mxf eg/pine	500-1300	oc-nv	dc-fb	my-fb	
<i>Gomphostemma wallichii</i> Prain	h	pd	3	gro	mxf eg/pine	600-1685	sp-nv	nv-ja	my-ja	
<i>Hypis capitata</i> Jacq.	h	a	3	gro	da	350-600	sp-mr	nv-my	jl-my	
<i>Hypis suaveolens</i> (L.) Poit.	h	a	3	gro wee	da	350-500	ag-nv	oc-ja	my-ja	
<i>Leucas aspera</i> (Willd.) Link	h	a	3	gro	dof da	375-500	ag-oc	sp-dc	my-dc	
<i>Leucas flaccida</i> R. Br.	h	pd	3	gro less often epl	bb/df eg/pine	400-1650	sp-dc	oc-mr	jl-mr	
<i>Orthosiphon aristatus</i> (Bl.) Miq.	h	pd	148	gro	egf eg/pine	1000-1600	jl-oc	ag-nv	my-dc	
<i>Orthosiphon rubicundus</i> (D. Don) Bth.	h	a	3	gro	dof bb/df mxf	350-1000	my-ji	jin-ag	ap-sp	
<i>Orthosiphon</i> sp.	h	a	2	gro	mxf streams	950-950	jl-ag	ag-sp	my-oc	q.v. <i>Orthosiphon tagawae</i> Murata; Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 81.
<i>Platostoma coloratum</i> (D. Don) A.J. Paton	h	pd	3	gro	egf eg/pine	1100-1685	my-ag	jl-oc	ap-nv	syn. = <i>Geniosporum coloratum</i> (D. Don) O.K., <i>Geniosporum strobiliferum</i> Wall. ex Bth.
<i>Platostoma siamense</i> (Murata) A. J. Paton	h (s,l)	a or pe	3	gro	mxf eg/pine	600-1400	jl-ag	ag-oc	ap-dc	topotype of paratype
<i>Platostoma</i> sp.	h	pd	3	gro	dof bb/df eg/pine	400-1650	oc-dc	nv-ja	jn-fb	
<i>Plectranthus coetsa</i> B.-H. ex D. Don	h	pd	3	gro	da eg/pine	1500-1685	ja-fb	fb-mr	jn-mr	syn. = <i>Isodon coetsa</i> (B.-H. ex D. Don) Kudo
<i>Plectranthus glabratus</i> (Bth.) Alst.	h	pd	2	gro	dof eg/pine	600-1225	ja-fb	fb-mr	jn-mr	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Plectranthus hispidus</i> Bth.	h	pd	3	gro	eg/pine	1450–1650	dc–ja	ja–fb	jn–ap	topotype of paratype of <i>Isodon nigropunctatus</i> Murata, syn. = <i>Isodon hispidus</i> (Bth.) Murata
<i>Plectranthus lophanthoides</i> (B.-H. ex D. Don) Griener & Long	h	a	4	gro	bb/df mx/egf eg/pine	500–1500	oc–dc	nv–ja	jn–ap	syn. = <i>Plectranthus striatus</i> Bth., <i>Isodon lophanthoides</i> (B.-H. ex D. Don) Hara
<i>Plectranthus ternifolius</i> D. Don	h	pd	3	gro	da eg/pine	1200–1500	nv–fb	dc–mr	jn–ap	topotype of <i>Plectranthus hosseusii</i> Musch., syn. = <i>Isodon ternifolius</i> (D. Don) Kudo
<i>Pogostemon auricularius</i> (L.) Hassk.	h	a	3	gro	da eg/pine rocks streams in dof	550–1550	ag–oc	sp–nv	jn–dc	
<i>Pogostemon menthoides</i> Bl.	h	a	3	gro	egf eg/pine	1450–1650	fb–mr	mr–ap	jl–my	
<i>Pogostemon purpurascens</i> Dalz.	s	pe	2	gro	streams in egf eg/pine	1200–1425	ja–fb	ap–my	ja–dc	
<i>Pogostemon watii</i> Cl.	h	pd	2	gro	eg/pine	1600–1685	dc–fb	fb–mr	jl–ap	
<i>Salvia riparia</i> Kunth	h	a	3	gro wee nat	wet places in da mx/egf eg/pine	725–1250	nv–mr	dc–ap	jl–ap	
<i>Scutellaria glandulosa</i> Hk. f.	h	pd	3	gro	dof bb/df	375–1000	my–nv	jn–dc	ap–ja	
<i>Teucrium quadrifarium</i> B.-H. ex D. Don	h	pd	2	gro	eg/pine	1500–1600	nv–dc	dc–ja	jn–ja	
Nyctaginaceae										
<i>Boerhavia diffusa</i> L.	h	a	3	gro nat wee	da	350–1300	jl–ja	sp–fb	my–dc	
<i>Mirabilis jalapa</i> L.	h	pe	2	gro int cul	da	350–975	ja–dc	ja–dc	ja–dc	cultivated and escaped
Basellaceae										
<i>Basella alba</i> L.	v	a	2	gro cul	da	350–500	ja–dc	ja–dc	ja–dc	cultivated and escaped
Chenopodiaceae										
<i>Chenopodium ficifolium</i> Sm.	h	a	2	gro	da streams	350–700	ap–dc	jn–ja	ap–ja	
Amaranthaceae										
<i>Achyranthes bidentata</i> Bl. var. <i>bidentata</i>	h	pe	3	gro	mx/egf streams	625–1350	ag–oc	sp–dc	ja–dc	
<i>Aerva sanguinolenta</i> (L.) Bl.	h	pe	3	gro	da mx/eg/pine egf	1100–1675	ja–mr	fb–mr	ja–dc	
<i>Alternanthera parvifolia</i> St. Hil.	h	a	3	gro wee	da cult	350–1000	my–oc	jn–nv	ap–nv	
<i>Alternanthera pungens</i> H. B. K.	h	pe	3	gro nat wee	da	350–500	ja–dc	ja–dc	ja–dc	syn. = <i>Alternanthera repens</i> (L.) O.K.
<i>Alternanthera sessilis</i> (L.) DC. var. <i>sessilis</i>	h	a	3	gro wee	wet places in da	350–700	my–dc	jn–ja	my–ja	
<i>Amaranthus spinosus</i> L.	h	a	3	gro nat wee	da	350–950	ja–dc	ja–dc	ja–dc	
<i>Amaranthus viridis</i> L.	h	a	4	gro wee nat	da	350–950	ja–dc	ja–dc	ja–dc	syn. = <i>Amaranthus gracilis</i> Desf.
<i>Psilotrichum ferrugineum</i> (Roxb.) Moq.-Tand.	h	a	2	gro	bb/df streams	500–600	nv–dc	dc–fb	jn–fb	
Polygonaceae										
<i>Fagopyrum esculentum</i> Moen.	h	a	2	gro cul	da sg	1500–1550	ag–oc	oc–dc	my–dc	introduced, often cultivated and escaped

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Polygonum barbatum</i> L.	h	ape	3	gro	da streams in dof bb/df mxf	400–1525	jn–fb	jl–mr	ap–dc	evergreen in permanent streams annual in seasonal streams
<i>Polygonum chinense</i> L.	h	pe	4	gro	mxf egf eg/pine often in da & sg	650–1685	ap–nv	ag–dc	ja–dc	most often in da & sg
<i>Polygonum flaccidum</i> Meissn.	h	pe	2	gro the	wet places in da	350–500	sp–dc	oc–ja	ja–dc	
<i>Polygonum nepalense</i> Meissn.	h	pe	3	gro	egf streams eg/pine open areas	1400–1685	jl–oc	ag–nv	ja–dc	
<i>Polygonum odoratum</i> Lour.	h	ape	3	gro	streams in bb/df	500–600	ap–ag	my–nv	ja–dc	
<i>Polygonum plebeium</i> R. Br.	h	pe	2	gro wee	streams in bb/df	500–700	ap–ag	my–oc	ja–dc	
Aristolochiaceae										
<i>Aristolochia grandis</i> Craib	wc	pe	2	gro	egf	1150–1375	ag–nv	jn–ag	ja–dc	topotype, often along streams
<i>Aristolochia kerrii</i> Craib	v	pd	3	gro	dof	400–925	my–jl	jl–sp	ap–nv	
<i>Aristolochia pierrei</i> Lec.	v	pd	3	gro	dof bb/df	375–950	ag–nv	nv–ja	jn–ja	
<i>Aristolochia tagala</i> Cham.	v	pd	3	gro	da bb/df	500–750	my–oc	nv–fb	ap–fb	
<i>Aristolochia versicolor</i> Hwang	v	pe	1	gro	egf	1250–1250	sp–oc	?	ja–dc	
Rafflesiaceae										
<i>Sapria himalayana</i> Griff.	h	pd	2	epi par	egf streams	1050–1425	sp–fb	nv–jn	leafless	lacking chlorophyll, topotype of <i>Richthofenia siamensis</i> Hoss.; Elliott, J. Wildlife Thai. 2:1(1992) 44–52.
Piperaceae										
<i>Peperomia pellucida</i> (L.) H.B.K.	h	a	3	gro epi epi int nat	rocks streams dof bb/df	350–1200	jl–nv	ag–nv	my–dc	succulent, often a weed
<i>Peperomia tetraphylla</i> (Forst. f.) Hk. & Arn.	h	pe	3	epi or epi	egf eg/pine	1250–1650	ag–dc	sp–ja	ja–dc	
<i>Piper argyrophyllum</i> Miq.	s (h)	pe	3	gro	mxf egf	650–1250	jl–dc	sp–ja	ja–dc	
<i>Piper boehmeriaefolium</i> (Miq.) C. DC. var. <i>boehmeriaefolium</i>	h	pe	3	gro	streams in mxf egf	675–1575	ja–mr	jl–sp	ja–dc	
<i>Piper longum</i> L.	v	pe	2	gro	egf streams	1050–1225	ap–my	?	ja–dc	often creeping
<i>Piper muricatum</i> Bl.	h	pe	3	gro	mxf egf	650–1150	ap–my	jl–oc	ja–dc	
<i>Piper aff. pedicellatum</i> C. DC.	v cr	pe	3	gro	mxf egf	800–1400	my–ag	ag–ja	ja–dc	sometimes epiphytic
<i>Piper aff. peepuloides</i> Roxb.	v	pe	2	gro	egf streams	1400–1400	ja–fb	sp–nv	ja–dc	
<i>Piper retrofractum</i> Vahl	v (h, cr)	pe	3	gro	mxf streams egf	825–1300	my–ag	nv–ja	ja–dc	
Chloranthaceae										
<i>Chloranthus erectus</i> (B.-H.) Verd.	h	pe	4	gro	mxf egf	600–1575	jn–jl	sp–dc	ja–dc	
<i>Chloranthus nervosus</i> Coll. & Hemsl.	h	pd	3	gro	bb/df mxf eg/pine	525–1475	my–jl	ag–sp	my–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Sarcandra glabra</i> (Thunb.) Nak. ssp. <i>brachystachys</i> (Bl.) Verdr. var. <i>brachystachys</i>	s h	pe	2	gro	eg/pine	1550–1550	ag-sp	nv-dc	ja-dc	
Myristicaceae										
<i>Horsfieldia amygdalina</i> (Wall.) Warb. var. <i>amygdalina</i>	t	pe	2	gro	mxg egf	650–1050	ag-oc	mr-my	ja-dc	
<i>Horsfieldia thorelii</i> Lec.	t	pe	2	gro	egf	1000–1100	sp-oc	(ja) ap-jn	ja-dc	
<i>Knema conferta</i> (King) Warb.	t	pe	3	gro	mxg egf	825–1000	oc-nv	my-jn	ja-dc	
<i>Knema laurina</i> (Bl.) Warb.	t	pe	2	gro	mxg streams, egf	725–1050	ja-fb	ap-jl	ja-dc	
Lauraceae										
<i>Actinodaphne henryi</i> Gamb.	t	pe	3	gro	mxg egf	650–1425	dc-fb	ap-my	ja-dc	
<i>Alseodaphne andersonii</i> (King ex Hk.f.) Kosterm.	t	pe	3	gro	egf eg/pine	1000–1400	ag-sp(ja)	dc-ap	ja-dc	
<i>Beilschmiedia</i> aff. <i>intermedia</i> Allen	t	pe	3	gro	egf eg/pine	1025–1685	my-jn	jl-mr	ja-dc	
<i>Beilschmiedia</i> aff. <i>percoriacea</i> Allen var. <i>ciliata</i> H. W. Li	t	pe	3	gro	egf eg/pine	1100–1350	mr-ap	mr-jn	ja-dc	
<i>Cinnamomum camphora</i> (L.) Nees & Eberm.	t	pe	2	gro	egf	1350–1350	sp-oc	?	ja-dc	
<i>Cinnamomum caudatum</i> Nees	t	pe	2	gro	egf	980–1350	sp-nv	fb-mr	ja-dc	
<i>Cinnamomum iners</i> Reinw. ex Bl.	t	pe	3	gro	mxg egf	700–1425	ja-fb	ap-my	ja-dc	
<i>Cinnamomum longipetiolatum</i> H. W. Li	t	pe	2	gro	egf	950–1100	?	mr-oc	ja-dc	
<i>Cryptocarya amygdalina</i> Nees	t	pe	3	gro	mxg egf	700–1325	ap-my	ap-my	ja-dc	
<i>Lindera caudata</i> (Wall. ex Nees) Bth.	t	pe	3	gro	egf	1350–1500	dc-fb	my-jl	ja-dc	
<i>Litsea albigans</i> Kurz	t (l)	pe	2	gro	egf	1050–1350	ap-my	fb-mr	ja-dc	
<i>Litsea cubeba</i> (Lour.) Pers. var. <i>cubeba</i>	t (l)	pe	3	gro	da in egf eg/pine dc-ja (fb)	1100–1685	(nv)	jin-oc	ja-dc	
<i>Litsea firma</i> Bl.	t	pe	2	gro	egf	1150–1400	ja-fb	?	ja-dc	
<i>Litsea glutinosa</i> (Lour.) C.B. Rob. var. <i>glutinosa</i>	t	pd	3	gro	bb/df sg	350–1325	jin-ag	ag-nv	my-mr	
<i>Litsea monopetala</i> (Roxb.) Pers.	t	pe	3	gro	mxg egf	650–1500	my-jn	my-sp	ja-dc	
<i>Litsea salicifolia</i> (Roxb. ex Nees) Hk.f.	t (l)	pe	3	gro	mxg egf eg/pine	800–1650	sp-dc (ap-my)	mr-my (dc)	ja-dc	
<i>Litsea semecarpifolia</i> Wall. ex Nees	t	pe	2	gro	egf streams	1350–1450	nv-ja	my-jl	ja-dc	
<i>Litsea zeylanica</i> (Nees) Nees	t	pe	2	gro	egf	1050–1350	dc-ja(fb)	my-jn	ja-dc	
<i>Machilus bombycina</i> King ex Hk.f.	t	pe	2	gro	egf eg/pine	1000–1100	jin	ag	ja-dc	
<i>Persea chariacea</i> Kosterm.	t	pe	2	gro	streams in egf	1300–1350	fb	?	ja-dc	topotype of paratype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Phoebe cathia</i> (D. Don) Kosterm.	t	pe	3	gro	da mxf egf eg/pine	650–1500	fb–jl	my–oc	ja–dc	
<i>Phoebe lanceolata</i> (Wall. ex Nees) Nees	t (l)	pe	4	gro	da eg/pine mxf egf	550–1550	fb–ap	mr (jn–sp)	ja–dc	
<i>Phoebe aff. pallida</i> (Nees) Nees	t	pe	3	gro	egf eg/pine	1000–1300	my–jn	ag–sp	ja–dc	
<i>Phoebe</i> (? <i>neuranthoides</i> S. Lee & F. N. Wei)	t	pe	2	gro	egf	1000–1100	?	ag–sp	ja–dc	
<i>Potameia siamensis</i> Kosterm.	t	pe	2	gro	egf eg/pine	1400–1600	dc–ja (mr)	sp–oc (fb)	ja–dc	topotype of paratype, possibly = <i>Syndicilis</i>
Hernandiaceae										
<i>Illigera thorelii</i> Gagnep.	wc (v)	pd	3	gro	bb/df da	375–650	sp–oc	nv–dc	my–dc	
<i>Illigera trifoliata</i> (Griff.) Dunn ssp. <i>cucullata</i> (Merr.) Kub.	wc	pe	3	gro	mxf egf	750–1050	sp–oc	dc–mr	ja–dc	
Proteaceae										
<i>Helicia formosana</i> Hemsl. var. <i>oblancoolata</i> Sleum.	t	pe	3	gro	egf eg/pine	1100–1450	ap–my	fb–mr	ja–dc	
<i>Helicia nilagirica</i> Bedd.	t	pe	4	gro	da in mxf egf eg/pine	675–1685	ap–my	oc–ap (jn)	ja–dc	
<i>Heliciopsis terminalis</i> (Kurz) Sleum.	t	pe	3	gro	da mxf egf eg/pine	725–1650	ap–my	dc–fb	ja–dc	
Thymelaeaceae										
<i>Aquilaria crassa</i> Pierre ex Lec.	t	pe	1	gro	egf	1000–1100	mr–ap	jn–ji	ja–dc	
<i>Daphne sureli</i> W. W. Sm. & Cave	l	pe	2	gro	eg/pine	1600–1685	nv–ja	dc–fb	ja–dc	
<i>Enkleia siamensis</i> (Kurz) Nev. ssp. <i>siamensis</i>	s sc	pd	3	gro	dof	400–600	ja–mr	fb–mr	my–mr	
<i>Linostoma persimile</i> Craib	s (l)	pd	3	gro	dof bb/df mxf egf	400–1325	oc–nv	nv–dc	my–ja	fruits described: Maxwell, Nat. Hist. Bull. Siam Soc. 40:2 (1992) 187.
Loranthaceae										
<i>Dendrophthoe curvata</i> (Bl.) Miq.	s	pe	3	epi hemipar	dof	350–900	ja–dc	ja–dc	ja–dc	topotype of <i>Loranthus kerrii</i> Craib, syn. = <i>Dendrophthoe falcata</i> (L. f.) Ett.
<i>Dendrophthoe lanosa</i> (Korth.) Dans.	s	pe	3	epi hemipar	dof	400–500	jl–sp	sp–dc	ja–dc	
<i>Dendrophthoe pentandra</i> (L.) Miq.	s	pe	4	epi hemipar	da sg mxf	350–900	dc–ap	fb–my	ja–dc	
<i>Elytranthe albidula</i> (Bl.) Bl.	s	pe	1	epi hemipar	eg/pine	1500–1610	dc–ja	?	ja–dc	
<i>Ginalloa siamica</i> Craib	s	pe	2	epi hemipar	dof	500–600	ja–ap	mr–jn	ja–dc	topotype, often in Viscaceae
<i>Helixanthera parasitica</i> Lour.	s	pe	3	epi hemipar	mxf egf eg/pine	550–1650	ap–jn	jn–ag	ja–dc	
<i>Helixanthera pulchra</i> (DC.) Dans.	s	pe	3	epi hemipar	mxf	750–750	mr–ap	my–jn	ja–dc	
<i>Macrosolen avenis</i> (Bl.) Dans.	s	pe	4	epi hemipar	egf eg/pine	1275–1650	jn–sp	sp–my	ja–dc	topotype of <i>Elytranthe affinis</i> Craib
<i>Macrosolen lowii</i> (King) Tiegh.	s	pe	3	epi hemipar	eg/pine egf	1125–1675	my–ag	?	ja–dc	
<i>Scurrula atropurpurea</i> (Bl.) Dans.	s	pe	3	epi hemipar	bb/df	500–600	oc–dc	dc–mr	ja–dc	topotype of <i>Loranthus cultarium</i> Craib

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Scurrula ferruginea</i> (Roxb. ex Jack) Dans.	s	pe	4	epi hemipar	dof bb/df	450–1300	ja–dc	ja–dc	ja–dc	topotype of <i>Loranthus sootepensis</i> Craib
<i>Scurrula parasitica</i> L.	s	pe	2	epi hemipar	eg/pine	1500–1650	oc–nv	dc–ja	ja–dc	hyperparasitic on other <i>Viscum</i> , often in Viscaceae
<i>Viscum articulatum</i> Burm. f.	s	pe	2	epi hyperpar	dof eg/pine	400–1650	ja–dc	ja–dc	ja–dc	often in Viscaceae
<i>Viscum orientale</i> Willd.	s	pe	3	epi hemipar	egf	1400–1600	fb–ap	mr–my	ja–dc	often in Viscaceae
<i>Viscum ovalifolium</i> Wall. ex DC.	s	pe	4	epi hemipar	egf eg/pine	1400–1650	ja–jl	ap–nv	ja–dc	often in Viscaceae
Santalaceae										
<i>Scleropyrum wallichianum</i> (A. DC.) Am. var. <i>stamensis</i> H. Lec.	t (l) in dof	pe	4	gro streams	bb/df mxf egf	425–1325	fb–mr	jl–sp	ja–dc	topotype
Opiliaceae										
<i>Canisjiera theedii</i> J.F. Gmel.	wc	pe	4	gro	do bb/df mxf	375–850	oc–mr	mr–ap	ja–dc	rarely a tree
<i>Lepionurus sylvestris</i> Bl.	l	pe	3	gro	bb/df mxf egf	550–1250	jn–nv	ag–fb	ja–dc	infrequently a treelet, over-exploited for its edible young leaves
<i>Melientha suavis</i> Pierre ssp. <i>suavis</i>	t (l)	pe	2	gro	dof	400–500	fb	my	ja–dc	
<i>Opilia amentacea</i> Roxb.	wc	pe	2	gro	dof	450–450	fb–mr	jn–jl	ja–dc	
Balanophoraceae										
<i>Balanophora abbreviata</i> Bl.	h	pd	3	gro par	bb/df mxf egf	500–1200	sp–dc	?	leafless	root parasite, lacking chlorophyll
<i>Balanophora fungosa</i> J.R. & G. Forst. ssp. <i>indica</i> (Am.) B. Han. var. <i>indica</i>	h	pd	3	gro par	mxf egf eg/pine	850–1685	oc–fb	?	leafless	root parasite, lacking chlorophyll
<i>Balanophora latiseptala</i> (Tiegh.) Lec.	h	pd	3	gro par	egf eg/pine	1300–1685	sp–dc	?	leafless	root parasite, lacking chlorophyll
<i>Balanophora laxiflora</i> Hemsl.	h	pd	2	gro	mxf	950–950	dc	?	leafless	root parasite, lacking chlorophyll
Euphorbiaceae										
<i>Acalypha brachystachya</i> Horn.	h	a	3	gro	bb/df mxf egf	520–1475	jl–oc	ag–nv	my–dc	new record: Maxwell, Nat. Hist. Bull. Siam Soc. 37:2 (1989)183.
<i>Acalypha kerrii</i> Craib	l (s)	pd	3	gro	bb/df mxf	400–850	mr–my	jl–sp	ap–fb	topotype
<i>Alchornea tiliifolia</i> (Bth.) M.–A.	t (l, s)	pe	3	gro	mxf egf	700–1150	jn–jl	oc–nv	ja–dc	often in open da
<i>Aleurites maluccana</i> (L.) Willd.	t	pe	2	gro cul int	egf	1000–1350	mr–ag	my–jl (sp)	ja–dc	planted
<i>Antidesma acidum</i> Retz.	l	pd	4	gro	da dof bb/df egf eg/pine	400–1525	ap–jn	jl–nv	my–ja	
<i>Antidesma bunius</i> (L.) Spreng.	t	ped	3	gro	mxf egf	725–1450	mr–jn	(jn) ag–oc	ja–dc	topotype of <i>Antidesma colletii</i> Craib
<i>Antidesma ghaesembilla</i> Gaertn.	t (l)	pd	3	gro	dof	600–750	jn–jl	(ag) nv–ja	my–fb	
<i>Antidesma montanum</i> Bl.	t (l)	pe	3	gro	egf	1000–1100	ap–sp	jl–nv	ja–dc	
<i>Antidesma sootepense</i> Craib	t (l)	pe	3	gro	bb/df mxf egf	500–975	my–jl	sp–fb	ja–dc	
<i>Aporosa villosa</i> (Lindl.) Bail.	t (l)	pd	4	gro	dof bb/df mxf eg/pine	500–1500	ja–mr	mr–my	ap–fb	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Aporosa wallichii</i> Hk. f.	t	pd	4	gro	dof bb/df mx f eg/pine	500–1400	ja–mr	ap–my	my–fb	
<i>Baccaurea ramiflora</i> Lour.	t	pe	3	gro	mx f egf	600–1100	fb–mr	my–jl	ja–dc	
<i>Baliospermum montanum</i> (Willd.) M.-A.	s (h)	pe	2	gro	bb/df	625–625	ja–dc	ja–dc	ja–dc	
<i>Baliospermum siamense</i> Craib	h	pe	4	gro	mx f eg/pine	650–1685	jl–oc	ag–nv	ja–dc	topotype, often along streams
<i>Balakata baccata</i> (Roxb.) Ess.	t	pe	3	gro	streams in	400–1350	fb–ag	ap–sp (dc)	ja–dc	often along streams at low elevations, basionym = <i>Sapium baccatum</i> Roxb.
<i>Bischofia javanica</i> Bl.	t	ped	3	gro	bb/df mx f	525–1250	fb–mr	jn–fb	mr–fb	often changing leaves February–March, tropophyllous
<i>Breynia fruticosa</i> (L.) Hk. f.	l	pd	3	gro	dof bb/df mx f egf	400–1150		n–sp	ag–oc	ap–mr
<i>Breynia glauca</i> Craib	l	ped	3	gro	dof bb/df mx f	450–1175	jl–ja	ag–fb	my–fb	topotype
<i>Bridelia affinis</i> Craib	l (s)	pd	3	gro	bb/df mx f	450–1250	ag–oc	oc–dc	ap–ja	topotype
<i>Bridelia glauca</i> Bl. var. <i>glauca</i>	t	pd	3	gro	dof bb/df mx f egf eg/pine	525–1575	ap–nv	oc–ap	my–fb	syn. = <i>Bridelia pubescens</i> Kurz
<i>Bridelia retusa</i> (L.) A. Juss.	t	pd	3	gro	dof bb/df	350–800	jl–sp	oc–nv	ap–fb	syn. = <i>Bridelia pierrei</i> Gagnep.
<i>Bridelia stipularis</i> (L.) Bl.	t (l), s (wc)	pd	3	gro	bb/df mx f	400–975	sp–nv	dc–fb	my–fb	
<i>Bridelia tomentosa</i> Bl.	t (l) wc	pd	3	gro	bb/df mx f	350–1100	oc–nv	nv–dc	my–mr	
<i>Cleidion spiciflorum</i> (Burm. f.) Merr.	t	pe	3	gro	mx f egf	650–1125	ja–fb	my–sp	ja–dc	
<i>Cleistanthus hirsutus</i> Hk. f.	t	pe	3	gro	bb/df mx f streams	375–800	ap–jn	my–jl	ja–dc	
<i>Croton crassifolius</i> Geisel.	h	pd	2	gro	da	350–350	mr–jl	ap–sp	my–dc	
<i>Croton lachnocarpus</i> Bth.	l (s)	pe	2	gro	streams in mx f egf	850–950	jn–jl	?	ja–dc	
<i>Croton robustus</i> Kurz	t	pd	3	gro	bb/df mx f da in egf	500–1150	ja–fb	fb–ap	my–mr	
<i>Croton roxburghii</i> N. P. Balakr.	t	pd	4	gro	bb/df mx f	350–950	ja–mr	mr–ap	my–mr	syn. = <i>Croton oblongifolius</i> Roxb.
<i>Dalechampia elongata</i> Craib	v	pd	2	gro	mx f	600–800	nv–ja	dc	my–dc	
<i>Daphniphyllum laurinum</i> (Bth.) Baill.	t	pe	3	gro	egf streams	1100–1350	mr–a	sp–dc	ja–dc	often in Daphniphyllaceae
<i>Euphorbia bifida</i> Hk. f. & Arn.	h	pd	2	gro	dof	350–500	ap–my	my–jn	mr–sp	syns. = <i>Euphorbia coudercii</i> Gagnep., <i>Euphorbia vachellii</i> Hk. & Arn.
<i>Euphorbia heterophylla</i> L.	h	a	4	gro wee int nat	da	375–1650	my–dc	jn–ja	my–ja	
<i>Euphorbia hirta</i> L.	h	a	4	gro wee nat int	da	350–1650	ja–dc	ja–dc	ja–dc	
<i>Euphorbia lacei</i> Craib	t (l)	pd	1	gro	mx f	500–750	ja–fb	mr–ap	my–dc	
<i>Euphorbia parviflora</i> L.	h	a	3	gro wee	da sg	350–600	my–oc	jn–nv	my–dc	syn. = <i>Euphorbia hypericifolia</i> L.

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Euphorbia prostrata</i> W. Ait.	h	a	3	wee nat	da	350–500	ja–dc	ja–dc	ja–dc	
<i>Euphorbia pulcherrima</i> Willd. ex Klot.	h	pd	2	gro int cul	da in egf eg/pine	700–1300	sp–ja	my–fb	my–fb	also a shrub, ornamental and escaped cultivation
<i>Euphorbia thymifolia</i> L.	h	pe	3	gro wee	da	350–650	ja–dc	ja–dc	ja–dc	
<i>Falconeria insignis</i> Roy.	t	pd	2	gro	bb/df	350–425	ja–fb	fb–mr	my–nv	syn. = <i>Sapium insigne</i> (Roy.) Bth.
<i>Glochidion acuminatum</i> M.–A. var. <i>siamense</i> A.S.	t	pe	3	gro	da in eg/pine	1400–1575	mr–ap	sp–oc	ja–dc	topotype
<i>Glochidion assamicum</i> (M.–A.) Hk. f.	t	pd	3	gro	streams in mxf bb/df	550–750	my–jn	ag–sp	my–dc	
<i>Glochidion coccineum</i> (B.–H.) M.–A.	s	pd	2	gro	streams in dof	400–400	mr–ap	jl–ag	my–mr	
<i>Glochidion eriocarpum</i> Champ.	s l t	pd	3	gro	eg/pine often in da sg	1200–1500	mr–oc	jl–dc	mr–dc	
<i>Glochidion hongkongense</i> M.–A. var. <i>hongkongense</i>	t	pd	3	gro	streams in dof bb/df mxf	450–950	sp–mr	oc–my	my–ap	
<i>Glochidion kerrii</i> Craib	l	pe	3	gro	egf rocks bb/df	1025–1350	nv–ja	sp–fb	ja–dc	topotype, syn. = <i>Glochidion dasystylum</i> Kurz var. <i>kerrii</i> (Craib) T. Chak. & Gang.
<i>Glochidion sphaerogynum</i> (M.–A.) Kurz	t	pe	3	gro	mxf open egf da sg	800–1450	jn–dc	oc–fb	my–dc	often dropping leaves in January
<i>Homonoia riparia</i> Lour.	s	pd	3	rhe gro, often am- phibious	streams in dof bb/df	600–1400	sp–mr	oc–fb	ja–dc	
<i>Macaranga denticulata</i> (Bl.) M.–A.	t	pe	2	gro	da sg	375–550	fb–ap (jl)	nv–my (jl)	my–fb	in seasonal & permanent streams
<i>Macaranga kurzii</i> (O.K.) Pax & Hoffm.	l	ped	3	gro	sg da in mxf egf eg/pine	700–1400	mr–ag	(my) jl–dc	ja–dc	
<i>Mallotus barbatulus</i> M.–A. var. <i>barbatulus</i>	t (l)	pe	2	gro	streams in bb/df mxf	800–1600	my–jl	ag–sp	ja–dc	topotype of syntype of <i>Macaranga andersonii</i> Craib
<i>Mallotus khasianus</i> Hk. f.	t (l)	ped	3	gro	egf streams	600–700	ap–my	sp–oc	ja–dc	infrequently a shrub
<i>Mallotus oblongifolius</i> (Miq.) M.–A.	t (l)	pe	2	gro	egf streams	1000–1400	ja–my	ag–nv	mr–ja	often leafless January–February, tropophyllous
<i>Mallotus paniculatus</i> (Lmk.) M.–A.	t	pd	3	gro	da sg in mxf open egf	1175–1175	ja–mr	fb–ap	ja–dc	possibly = <i>Mallotus peltatus</i> (Geisel.) M.–A.
<i>Mallotus peltatus</i> (Geisel.) M.–A.	l (s,t)	pe	3	gro	mxf streams	700–1350	ag–sp	nv–dc	my–mr	
<i>Mallotus philippensis</i> (Lmk.) M.–A.	t	pe	3	gro	da sg in bb/df mxf egf	550–700	ap–jn	jl–ag	ja–dc	
<i>Mallotus pierrei</i> (Gagnep.) A.S.	l (s)	pd	3	gro	bb/df	350–1500	nv–dc	ja–mr	ja–dc	
<i>Mallotus repandus</i> (Willd.) M.–A.	wc	pe	2	gro	da sg in dof bb/df	350–450	ap–my	my–jn	ap–fb	
<i>Megistostigma burmanicum</i> (Kurz) A.S.	v	pe	3	gro	egf	375–375	ja–fb	fb–ap	ja–dc	open places
<i>Ostodes paniculata</i> Bl.	t	pe	3	gro	egf	1050–1400	ja–nv	ag–ja	ja–dc	topotype of <i>Ostodes kerrii</i> Craib

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Phyllanthus amarus</i> Schum. & Thonn.	h	a	4	gro nat wee	da	350–1650	ja–dc	ja–dc	ja–dc	
<i>Phyllanthus columnaris</i> M.–A.	t	pd	3	gro	bb/df sg	350–600	oc–fb	my–fb	mr–dc	
<i>Phyllanthus emblica</i> L.	t (l)	pd	4	gro	da sg bb/df mxf	600–1620	fb–mr	sp–mr	mr–ja	
<i>Phyllanthus kerrii</i> A.S.	s (h)	pd	2	gro	eg/pine	1550–1550	jn–ag	jl–sp	mr–ja	also a herb
<i>Phyllanthus reticulatus</i> Poir.	l (s), wc,sc	pd	3	gro	streams in dof bb/df mxf	400–950	nv–mr	ja–nv	my–fb	
<i>Phyllanthus roseus</i> (Craib & Hutch.) Beille	l (s)	ped	4	gro	bb/df mxf egf	425–1350	ja–dc	ja–dc	ap–mr	often leafless in mr–ap, topotype; also topotype of <i>Phyllanthodendron album</i> Craib & Hutch., <i>Phyllanthodendron roseum</i> Craib & Hutch. var. <i>glabrum</i> Craib ex Hoss. and var. <i>siamensis</i> (Pax & Hoffm.) Craib
<i>Phyllanthus sootepensis</i> Craib	s (h)	pe	3	gro	da bb/df mxf	350–1375	my–nv	sp–ja	my–mr	topotype
<i>Phyllanthus urinaria</i> L.	h	a	3	gro nat wee	da	350–1650	ja–dc	ja–dc	ja–dc	
<i>Phyllanthus virgatus</i> Forst. f.	h	a	3	gro	dof bb/df	350–500	jl–dc	ag–ja	my–ja	
<i>Sauropus amoebiflorus</i> A.S.	h	pd	3	gro	dof bb/df	350–900	jn–ag	ag–oc	my–fb	
<i>Sauropus bicolor</i> Craib var. <i>bicolor</i>	h	pd	3	gro	dof bb/df mxf eg/pine	450–1620	jn–oc	jl–nv	my–fb	topotype, also topotype of <i>Sauropus rigidus</i> Craib
<i>Sauropus garretii</i> Craib	l	pe	2	gro	streams in mxf bb/df	650–900	jl–sp	oc–nv	ja–dc	upper water catchment valleys
<i>Sauropus hirsutus</i> Beille	s (h)	pd	3	gro	bb/df	350–600	jn–sp	ag–nv	my–dc	
<i>Sauropus orbicularis</i> Craib var. <i>orbicularis</i>	s	pd	2	gro	dof bb/df sg	350–400	jn–ag	ag–oc	my–fb	topotype
<i>Sauropus orbicularis</i> Craib var. <i>minor</i> A.S.	h	pd	3	gro	dof bb/df	400–800	ag–sp	oc–nv	jn–dc	topotype, hardly distinct from <i>Sauropus orbicularis</i> Craib var. <i>orbicularis</i>
<i>Sauropus quadrangularis</i> (Willd.) M.–A. var. <i>puberulus</i> Kurz	h	pd	3	gro	dof	350–500	jn–sp	ag–nv	my–fb	
<i>Sauropus quadrangularis</i> (Willd.) M.–A. var. <i>quadrangularis</i>	h	pd	3	gro	dof bb/df	550–900	jn–ag	sp–nv	my–dc	
<i>Sauropus similis</i> Craib	l (h)	pd	3	gro	bb/df mxf	650–725	my–ag	ag–oc	my–fb	topotype
<i>Securinega virosa</i> (Roxb. ex Willd.) Bail.	l (s)	pd	3	gro	bb/df sg	350–550	mr–jl	jn–jl	my–fb	often scandent
<i>Suregada multiflora</i> (A. Juss.) Bail. var. <i>multiflora</i>	t (l)	pe	3	gro	bb/df mxf sg	350–575	(sp) mr–ap	my–jn	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Trewia nudiflora</i> L.	t	pd	3	gro	bb/df streams	550-1050	(nv) fb-ap	jl-nv	my-nv	
Ulmaceae										
<i>Celtis tetrandra</i> Roxb.	t	pd	3	gro	da in bb/df sg egf	400-1100	fb-mr	ap-my (sp-oc)	fb-nv	
<i>Celtis timorensis</i> Span.	t	pe	2	gro	streams mxf egf	550-1100	dc-fb	mr-my	ja-dc	
<i>Holoptelea integrifolia</i> (Roxb.) Planch.	t	pd	2	gro	bb/df mxf sg	350-850	ja-fb	mr-ap	ap-dc	
<i>Trema orientalis</i> (L.) Bl.	t (l)	ped	3	gro	da sg	1050-1500	mr-ap	(jl) oc-mr	ja-dc	often deciduous mr-ap
<i>Ulmus lanceaefolia</i> Roxb. ex Wall.	t	pe	2	gro	bb/df streams	800-800	fb-mr	mr-ap	ja-dc	
Moraceae										
<i>Artocarpus gomezianus</i> Wall. ex Trec.	t	pd	3	gro	mxg egf	650-1100	fb-ap	my-jn	mr-fb	
<i>Artocarpus lakoocha</i> Roxb.	t	pd	3	gro	dof bb/df	550-1500	fb-ap	mr-my	my-mr	
<i>Artocarpus lanceolata</i> Trec.	t	pe	3	gro	egf	1050-1425	(mr) sp-oc	nv-my	ja-dc	
<i>Broussonetia kurzii</i> (Hk. f.) Corn.	wc (s) sc	pd	2	gro	bb/df	400-400	fb-mr	mr-my	my-ja	
<i>Broussonetia papyrifera</i> (L.) Vent.	t (l)	pd	3	gro often cul	da sg	350-1575	nv-ap	jn-ji	ap-ja	possibly escaped cultivation
<i>Ficus abelii</i> Miq.	s	pe	4	rheo	streams in dof bb/df mxf	350-900	jl-oc	jl-oc	ja-dc	rheophyte, flowers and fruits in figs
<i>Ficus altissima</i> Bl.	t	ped	3	epl gro str	bb/df mxf	350-1050	mr-fb	mr-fb	ja-dc	starts life as an epiphyte, flowers and fruits in figs, sometimes deciduous in bb/df fb-mr
<i>Ficus auriculata</i> Lour.	t	pd	2	gro	streams in dof egf eg/pine	525-1400	fb-ji	mr-nv	ap-fb	flowers and fruits in figs, ramiflorus & cauliflorus
<i>Ficus benjamina</i> L. var. <i>benjamina</i>	t (l)	pe	3	epl epl str	mxg egf	350-1400	ja-dc	ja-dc	ja-dc	starts life as an epiphyte, flowers and fruits in figs
<i>Ficus callosa</i> Willd.	t	pd	2	gro	egf	790-1100	oc-mr	(ag) oc-mr	my-dc	flowers and fruits in figs
<i>Ficus capillipes</i> Gagnep.	t	ped	2	gro	egf	1010-110	mr-jn	ap-ag (dc)	ja-dc	flowers and fruits in figs, often deciduous ap-my
<i>Ficus curtipetes</i> Corn.	t	pe	3	epl gro str	streams in bb/df mxf	400-650	fb-ji	fb-ji	ja-dc	starts life as an epiphyte, flowers and fruits in figs
<i>Ficus cyrtophylla</i> Wall. ex Miq.	l sc	pe	3	gro	egf streams	1375-1475	ap-ji	my-ji	ja-dc	often scandent, flowers and fruits in figs
<i>Ficus fistulosa</i> Reinw. ex Bl. var. <i>fistulosa</i>	t (l)	ped	3	gro	da open bb/df mxg egf sg	350-1400	ja-dc	ja-dc	ja-dc	found leafless 1125 m sp-oc. flowers & fruits in figs, often leafless at low elevations dc-fb
<i>Ficus geniculata</i> Kurz	t (l)	pd	2	gro epl	bb/df	425-550	fb-ap	fb-ap	my-ap	flowers and fruits in figs
<i>Ficus glaberrima</i> Bl. var. <i>glaberrima</i>	t	pe	4	gro epl	streams rocks in bb/df mxf eg	450-1200	ja-dc	ja-dc	ja-dc	flowers and fruits in figs, often on rocks
<i>Ficus hederacea</i> Roxb.	wc	pe	4	gro	mxg egf	550-1200	mr-ag	mr-ag	ja-dc	often creeping, flowers and fruits in figs

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Ficus heterophylla</i> L. f.	wc	pe	3	epi gro	bb/df	600-600	sp-dc	sp-dc	ja-dc	flowers and fruits in figs
var. <i>heterophylla</i>	sc (h)									
<i>Ficus heterophylla</i> Bl.	wc sc	pe	3	gro epl	streams rocks in bb/df mxf	350-700	ja-sp	ja-sp	ja-dc	flowers and fruits in figs
var. <i>heterophylla</i>										
<i>Ficus hirta</i> Vahl var. <i>hirta</i>	l	pe	3	gro	da in dof bb/df mxf egf	350-1150	ja-dc	ja-dc	ja-dc	flowers and fruits in figs
<i>Ficus hirta</i> Vahl var. <i>imberbis</i> Gagnep.	l	pe	2	gro	eg/pine	1300-1300	ag-sp	ag-sp	ja-dc	flowers and fruits in figs
<i>Ficus hirta</i> Vahl var. <i>roxburghii</i> (Miq.) King	t	pd	2	gro	da sg in egf	1050-1300	mr-jn	mr-jn	my-mr	flowers and fruits in figs
<i>Ficus hispida</i> L. f. var. <i>hispida</i>	t (l)	pe	3	gro	da in bb/df sg	350-1525	ja-dc	ja-dc	ja-dc	flowers and fruits in figs
<i>Ficus laevis</i> Bl. var. <i>laevis</i>	wc	pe	3	gro	egf streams	900-1200	jn-oc	jn-oc	ja-dc	flowers and fruits in figs
<i>Ficus lyrata</i> Warb.	t	pe	2	gro cul	da	350-1080	ag-nv	ag-nv	ja-dc	flowers and fruits in figs, ornamental
<i>Ficus microcarpa</i> L. f. var. <i>microcarpa</i>	t	pe	3	gro epi	streams in dof	350-1050	ja-dc	ja-dc	ja-dc	flowers and fruits in figs; initially epiphytic, later geophytic
forma <i>microcarpa</i>					bb/df mxf egf					
<i>Ficus obusifolia</i> Roxb.	t	pe	2	epi	streams in dof bb/df	425-575	nv-ja	nv-ja	ja-dc	flowers and fruits in figs
<i>Ficus parietalis</i> Bl.	wc	pe	3	gro	egf	1050-1200	ap-sp	ap-sp	ja-dc	flowers and fruits in figs
<i>Ficus pisocarpa</i> Bl.	t	pe	2	gro epl str	mxf egf streams	650-1400	oc-fb	oc-fb	ja-dc	"strangling" epilitic or epiphytic, flowers and fruits in figs
<i>Ficus pubigera</i> (Wall. ex Miq.) Miq.	wc	pe	3	gro	bb/df mxf egf	550-1450	sp-my	sp-my	ja-dc	flowers and fruits in figs
var. <i>pubigera</i>										
<i>Ficus racemosa</i> L. var. <i>racemosa</i>	t	pd	3	gro	mxf often along streams	350-1000	nv-jl	nv-jl	my-fb	flowers and fruits in figs, cauliflorous & ramiflorous
<i>Ficus rumphii</i> Bl.	t	pd	2	gro epi epl str	bb/df streams	450-550	ap-my	ap-my	ap-fb	flowers and fruits in figs
<i>Ficus sagittata</i> Vahl var. <i>sagittata</i>	wc	pe	2	gro	mxf	825-825	fb-my	fb-my	ja-dc	flowers and fruits in figs
<i>Ficus sarmentosa</i> B.-H. ex J.E. Sm.	wc	pe	2	gro	egf	1300-1450	mr-my	mr-my	ja-dc	flowers and fruits in figs
var. <i>nipponica</i> (Fr. & Sav.) Corn.										
<i>Ficus semicordata</i> B.-H. ex J.E. Sm.	t (l)	pde	3	gro	sg da in bb/df egf eg/pine	350-1550	fb-my	fb-my	ap-mr	flowers and fruits in figs, usually evergreen above 1000 m
var. <i>semicordata</i>										
<i>Ficus squamosa</i> Roxb.	s	pe	3	gro the	streams in dof bb/df	450-600	jn-sp	jn-sp	ja-dc	flowers and fruits in figs
<i>Ficus subulata</i> Bl. var. <i>subulata</i>	l (s)	pe	3	gro	da in mxf egf	825-1400	ja-dc	ja-dc	ja-dc	flowers and fruits in figs
<i>Ficus superba</i> (Miq.) Miq. var. <i>superba</i>	t	pd	3	epi	mxf egf	750-1350	nv-fb	nv-fb	fb-dc	epiphytic when young, flowers and fruits in figs
<i>Ficus variegata</i> Bl. var. <i>variegata</i>	t	pd	2	gro	egf	900-1200	ja-dc	ja-dc	my-ja	flowers and fruits in figs, cauliflorous & ramiflorous
<i>Ficus virens</i> Ait. var. <i>sublanceolata</i> (Miq.) Corn.	t (l)	pd	2	epl epi str	mxf streams	875-875	ag-oc	ag-oc	my-ja	flowers and fruits in figs
<i>Ficus</i> sp.	t	pe	2	gro	egf	1025-1025			ja-dc	figs not seen

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>MacLura amboinensis</i> Bl. var. <i>amboinensis</i>	wc sc	pe	3	gro	mx f egf	850-1550	sp-mr	ja-jn	ja-dc	
<i>MacLura cochinchinensis</i> (Lour.) Corn. var. <i>pubescens</i> (Trec.) Corn.	wc	pe	2	gro	egf	1075-1500	ap-my	jl-oc	ja-dc	
<i>MacLura fruticosa</i> (Roxb.) Corn.	l (wc, sc)	pd	4	gro	mx f egf	850-1400	oc-ap	ja-jn	my-fb	
<i>Morus macroura</i> Miq.	t	pd	3	gro	mx f egf	600-1550	fb-ap	mr-jn	mr-dc	
<i>Streblus asper</i> Lour. var. <i>asper</i>	t (l)	pe	2	gro	bb/df da sg	350-350	fb-mr	mr-my	ja-dc	
<i>Streblus taxoides</i> (Hey. ex Roth) Kurz	l	pe	2	gro	bb/df	600-600	ap-my	jl-ag	ja-dc	
Urticaceae										
<i>Boehmeria Chiangmaiensis</i> Yaha.	l (s)	pd	3	gro	bb/df open egf sg	550-1500	fb-mr	mr-ap	my-fb	topotype of paratype
<i>Boehmeria clidmioides</i> Miq. var. <i>clidmioides</i>	l (s)	pd	2	gro epl	egf	1000-1100	my-jn	dc-ja	my-ap	also see <i>Boehmeria malabarica</i> Wall. ex Wedd.
<i>Boehmeria diffusa</i> Wedd.	l (s, h)	pd	3	gro	eg/pine	1050-1650	my-oc	jl-nv	my-fb	open places
<i>Boehmeria hamiltoniana</i> Wall. ex Wedd.	l (s)	pd	2	gro	eg/pine da	1580-1580	fb-mr	mr-ap	my-fb	
<i>Boehmeria macrophylla</i> D. Don	l (s)	pe	3	gro	streams in dof bb/df mx f	500-900	ag-dc	sp-ja	ja-dc	
<i>Boehmeria pilosculula</i> (Bl.) Hassk.	h	pe	2	gro	egf da	1025-1025	sp-oc	oc-nv	ja-dc	open areas
<i>Boehmeria pseudotomentosa</i> Yaha.	s	pe	2	gro	egf da	1050-1200	jl-oc	ag-nv	ja-dc	topotype, open areas
<i>Boehmeria thailandica</i> Yaha.	l (s)	pd	2	gro	bb/df da sg	350-350	oc-nv	dc-ja	my-ja	topotype of paratype, open areas
<i>Boehmeria Zollingeriana</i> Wedd.	t (l, s)	pe	3	gro	mx f egf	600-1100	sp-nv	oc-dc	ja-dc	
<i>Debregeasia longifolia</i> (Burm. f.) Wedd.	t (l, s)	pe	3	gro	da eg/pine mx f streams	525-1685	sp-nv	oc-mr	ja-dc	syn. = <i>Debregeasia velutina</i> Gaud.
<i>Debregeasia squamata</i> King ex Hk. f. <i>forma squamata</i>	l	pe	3	gro	egf	1050-1150	jn-ji	sp-oc	ja-dc	also a shrub, syn. = <i>Debregeasia dentata</i> Hk. f.
<i>Dendrocnide sinuata</i> (Bl.) Chew	t (s)	pe	2	gro	mx f	550-650	sp-oc	ja-fb	ja-dc	
<i>Distemon indica</i> Wedd.	h	a	2	gro	streams in bb/df	400-500	jl-ag	oc-dc	my-dc	
<i>Elatostema integrifolium</i> (D. Don) Wedd.	h	pe	2	gro	streams in mx f egf	825-1000	ap-jn	my-ji	ja-dc	
<i>Elatostema lineolatum</i> Wight var. <i>major</i> Wedd.	h	pd	3	epl	rocks in dof bb/df mx f	400-850	jl-sp	ag-oc	my-nv	
<i>Elatostema longipes</i> W.T. Wang	h	pd	3	epl	rocks in egf streams	1025-1475	ag-nv	oc-ap	my-mr	
<i>Elatostema monandrum</i> (B.-H. ex D. Don) Hara	h	pd	2	epl	rocks in egf	675-1475	jl-oc	ag-nv	my-ja	moist places, soil embankments
<i>Elatostema platyphyllum</i> Wedd. var. <i>platyphyllum</i>	h	pd	3	epl	rocks in streams in egf	1375-1575	jn-ji	jl-sp	my-nv	
<i>Girardinia hibiscifolia</i> Miq.	h	a	2	gro	egf	1300-1550	nv-fb	dc-ap	my-fb	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Laportea bulbifera</i> (Sieb. & Zucc.) Wedd.	h	a	3	gro	egf	1400–1575	sp–oc	oc–dc	my–dc	
<i>Laportea interrupta</i> (L.) Chew	h	a	3	gro, less often epl	wet places in dof bb/df	350–700	jn–nv	jl–dc	ap–dc	
<i>Maoutia puya</i> (Wall. ex Hk.) Wedd.	l(h)	ped	3	gro eg/pine	bb/df mxl egf	550–1425	jl–nv	oc–ja	mr–fb	often leafless February–March
<i>Oreocnide rubescens</i> Bl.	t(l,s)	pe	3	gro	streams egf eg/pine	1400–1500	fb–mr	nv–ja	ja–dc	
<i>Pellionia latifolia</i> (Bl.) Boerl.	h	pe	3	gro	mxl streams	600–900	jn–sp	jl–nv	ja–dc	
<i>Pellionia repens</i> (Lour.) Merr.	h(cr)	pe	3	gro epl	streams rocks in bb/df mxl egf	550–1100	jn–ag	jl–oc	ja–dc	
<i>Pilea anisophylla</i> Wedd.	h	pd	2	epl	rocks in streams in bb/df mxl	500–700	jn–sp	jl–oc	my–fb	
<i>Pilea microphylla</i> (L.) Liebm.	h	pe	3	gro epl nat	da in bb/df mxl	350–700	my–nv	jn–dc	ja–dc	often on rocks
<i>Pilea trinervia</i> Wight	h	apd	3	gro epl	mxl eg/pine streams	600–1685	jn–dc	jl–ja	ja–dc	deciduous below c. 850 m mr–my
<i>Pouzolzia hirta</i> Hassk.	h	pd	3	gro	da egf eg/pine	1400–1685	ag–nv	ag–nv	my–dc	open areas
<i>Pouzolzia pentandra</i> (Roxb.) Benn.	h	pd	3	gro	da dof bb/df eg/pine	500–1610	jl–sp	ag–nv	my–dc	
<i>Pouzolzia zeylanica</i> (L.) Benn.	h	a	3	gro	eg/pine da bb/df mxl	500–1525	jn–sp	jl–nv	my–dc	
Juglandaceae										
<i>Engelhardia serrata</i> Bl. var. <i>serrata</i>	t	pd	3	gro	da bb/df mxl	550–1650	ja–fb	mr–ap	my–ap	
<i>Engelhardia spicata</i> Lechen. ex Bl. var. <i>integra</i> (Kurz) Mann.	t	pd	3	gro	eg/pine da in egf da dof mxl eg/pine da in egf	850–1650	fb–mr	mr–ap	ap–mr	along streams in bb/df, syn. = <i>Engelhardia spicata</i> Lechen. ex Bl. var. <i>colebrookeana</i> (Lindl. ex Wall.) O.K.
<i>Engelhardia spicata</i> Lechen. ex Bl. var. <i>spicata</i>	t	pd	3	gro	mxl egf eg/pine	870–1685	dc–fb	fb–ap	mr–dc	
Betulaceae										
<i>Benula alnoides</i> Ham. ex D. Don	t	pde	3	gro	egf eg/pine	1000–1650	dc–ja	(fb) ap–jn	ja–dc	leafless or changing leaves in dc–ja, exploited for its medicinal bark
<i>Carpinus londoniana</i> Winkl.	t	pe	3	gro	mxl streams mxl eg/pine	825–1650	dc–ja	mr–ag	ja–dc	
Myricaceae										
<i>Myrica esculenta</i> B.-H. ex D. Don	t	pe	2	gro	eg/pine	1300–1500	dc–fb	ap–my	ja–dc	
Fagaceae										
<i>Castanopsis acuminatissima</i> (Bl.) A. DC.	t	pe	5	gro	mxl egf eg/pine	850–1650	dc–fb	sp–oc	ja–dc	
<i>Castanopsis argyrophylla</i> King ex Hk. f.	t	pe	3	gro	dof	350–1180	ja–fb	sp–oc	ja–dc	
<i>Castanopsis armata</i> (Roxb.) Spach	t	pe	5	gro	mxl egf eg/pine	800–1685	fb–my	(my) sp–oc	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Castanopsis diversifolia</i> (Kurz) King ex Hk. f.	t	pe	4	gro	da mx f egf eg/pine	700–1685	fb–ap	ag–nv	ja–dc	
<i>Castanopsis indica</i> (Roxb.) A. DC.	t	pde	3	gro	bb/df mx f	500–1025	fb–mr	sp–oc	ap–mr	often leafless March–April
<i>Castanopsis rockii</i> A. Camus	t	pe	2	gro	egf	1150–1150	fb–mr	sp–oc	ja–dc	
<i>Castanopsis tribuloides</i> (Sm.) A. DC.	t	pdc	5	gro	mx f egf eg/pine	650–1650	ap–my	ag–oc	ja–dc	
<i>Lithocarpus aggregatus</i> Barn.	t	pe	3	gro	eg/pine	1200–1550	my–jn	nv–fb	ja–dc	topotype
<i>Lithocarpus craibianus</i> Barn.	t	pe	2	gro	eg/pine	1600–1650	jl–ag	ag–oc	ja–dc	topotype
<i>Lithocarpus elegans</i> (Bl.) Hatus. ex Soep.	t	pe	5	gro	bb/df mx f eg/pine	450–1450	mr–oc	jl–oc	ja–dc	extremely variable
<i>Lithocarpus fenestratus</i> (Roxb.) Rehd.	t	pe	2	gro	eg/pine	800–1300	my–ag	sp–oc	ja–dc	
<i>Lithocarpus finetii</i> (Hick. & A. Camus) A. Camus	t	pe	2	gro	mx f	650–750	fb–mr	sp–oc	ja–dc	topotype of paratype of <i>Lithocarpus intermedius</i> Barn.
<i>Lithocarpus garretianus</i> (Craib) A. Camus	t	pe	3	gro	bb/df mx f egf	550–1100	dc–mr	sp–oc	ja–dc	topotype
<i>Lithocarpus lindleyanus</i> (Wall.) A. Camus	t	pd	3	gro	dof mx f eg/pine	650–1400	ap–my	sp–oc	ap–fb	
<i>Lithocarpus polystachyus</i> (A. DC.) Rehd.	t	pd	3	gro	dof bb/df	550–1300	mr–jn	sp–dc	mr–dc	
<i>Lithocarpus sootepensis</i> (Craib) A. Camus	t	pe	5	gro	bb/df mx f eg/pine	525–1650	sp–mr	ag–nv	ja–dc	topotype
<i>Lithocarpus spicatus</i> (Sm.) Rehd. & Wils. var. <i>brevipetiolatus</i> (A. DC.) Rehd. & Wils.	t	pe	2	gro	egf	1250–1400	?	dc–ja	ja–dc	affinities to <i>Lithocarpus elegans</i> (Bl.) Hatus. ex Soep.
<i>Lithocarpus thomsonii</i> (Miq.) Rehd.	t	pe	2	gro	mx f	600–600	nv–ja	sp–oc	ja–dc	
<i>Lithocarpus truncatus</i> (King) Rehd. & Wils.	t	pe	2	gro	egf eg/pine	1200–1400	mr–my	sp–ja	ja–dc	
<i>Quercus aliena</i> Bl.	t	pd	3	gro	dof	400–850	mr–ap	sp–oc	ap–mr	
<i>Quercus brandisiana</i> Kurz	t	pd	3	gro	dof	750–850	mr–ap	ap–jn	ap–mr	
<i>Quercus glabricapula</i> Barn.	t	pe	3	gro	egf	1450–1450	mr–ap	sp–oc	ja–dc	
<i>Quercus incana</i> Roxb.	t	pe	3	gro	egf	1300–1300	dc–ja	jl–sp	ja–dc	
<i>Quercus kerrii</i> Craib var. <i>kerrii</i>	t	pd	4	gro	dof	350–850	mr–jn	ag–sp	ap–mr	topotype
<i>Quercus kerrii</i> Craib var. <i>pubescens</i> Barn.	t	pd	4	gro	mx f eg/pine	950–1620	ap–my	jl–ag	ap–mr	topotype, q.v. <i>Quercus vestita</i> Rehd. & Wils.
<i>Quercus kingiana</i> Craib	t	pd	3	gro	dof bb/df mx f	875–1450	nv–ja	jl–sp	fb–dc	topotype
<i>Quercus lanata</i> Smith	t	pe	3	gro	mx f eg/pine	800–1580	ja–fb	ag–sp	ja–dc	
<i>Quercus lineata</i> Bl. var. <i>hildebrandii</i> King	t	pe	3	gro	dof mx f egf	800–1600	nv–dc	mr–ap	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Quercus mespilifolia</i> Wall. ex DC.	t	pe	3	gro	mx	800-800	ja-fb	sp-oc	ja-dc	
<i>Quercus semiserrata</i> Roxb.	t	pe	4	gro	mx (streams) egf eg/pine	800-1675	mr-ap	dc-jl	ja-dc	
<i>Quercus vestita</i> Rehd. & Wils.	t	pe	3	gro	egf eg/pine	1200-1600	dc-ja	(fb) ag-sp	ja-dc	
Salicaceae										
<i>Salix tetrasperma</i> Roxb.	t	pd	3	gro the	streams in dof bb/df mx	350-1350	nv-ja	dc-ja	dc-nv	
Angiospermae, Monocotyledoneae										
Butomaceae										
<i>Butomaceae</i>	h	pe	3	aqu	marshes da	350-550	jl-nv	sp-dc	ja-dc	also found in wet thickets
<i>Limnophila flava</i> (L.) Buch.	h	a	2	aqu	marshes da	725-725	sp-fb	oc-mr	jl-ap	also found in wet fields, syn. = <i>Sagittaria sagittifolia</i> L. ssp. <i>leucopetala</i> (Miq.) Hart.
<i>Sagittaria trifolia</i> L.	h									
Triuridaceae										
<i>Triuridaceae</i>	h	pd	1	gro sap	streams in egf	1000-1000	oc-nv	?	leafless	topotype, lacking chlorophyll
Commelinaceae										
<i>Commelinaceae</i>	h (v)	pe	4	gro	mx egf streams	650-1400	my-jl	ag-nv	ja-dc	syn. = <i>Forrestia glabrata</i> (Kunth) Hassk.
<i>Amischotolype glabrata</i> (Kunth) Hassk.	v	pe	3	gro	streams in mx egf	600-1350	ap-jl	jl-dc	ja-dc	syn. = <i>Forrestia mollissima</i> (Bl.) Kds.
<i>Amischotolype mollissima</i> (Bl.) Hassk.	h	pd	3	gro	dof	400-500	ap-my	jl-nv	my-nv	syn. = <i>Forrestia mollissima</i> (Bl.) Kds.
<i>Aneilema discretum</i> Craib	h	pd	3	gro	dof	950-950	jl-nv	sp-oc (jl)	my-nv	topotype
<i>Aneilema divergens</i> Cl.	h	pd	3	gro	dof	500-850	jl-nv	jl-oc	my-nv	
<i>Aneilema herbaceum</i> (Roxb.) Wall. ex Kunth	h	pd	3	gro	dof					
<i>Aneilema ovatum</i> (Hassk.) Wall. ex Cl.	h	pd	2	gro	bb/df mx	525-825	jl-nv	jl-oc	my-nv	
<i>Aneilema scaberrimum</i> (Bl.) Kunth	h	pe	4	gro	streams in mx egf	550-1525	ag-nv (mr)	oc-dc	ja-dc	
<i>Aneilema sinicum</i> Lindl.	h	pd	3	gro	eg/pine	800-1675	jl-nv	ag-oc	my-nv	
<i>Belosynapsis ciliata</i> (Bl.) R. Rao	h	a	3	gro	streams in mx egf	725-1050	ag-oc	oc-dc	jl-nv	often on rocks, cliffs
<i>Commelina benghalensis</i> L.	h	a	3	gro wee	da cult	350-1350	jl-dc	sp-ja	jl-nv	
<i>Commelina diffusa</i> Burm. f.	h	pe	4	gro wee	da streams in dof bb/df mx open eg/pine	525-1685	my-dc	sp-fb	ja-dc	
<i>Commelina longifolia</i> Lmk.	h	pe	3	gro	marshes bb/df mx	550-950	jl-nv	ag-nv	ja-dc	wet places, aquatic, syn. = <i>Commelina salicifolia</i> Roxb.
<i>Commelina paludosa</i> Bl.	h	pe	3	gro	da dof bb/df mx egf eg/pine often along streams	550-1685	ag-nv	oc-ja	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cyanotis axillaris</i> (L.) D. Don	h	a	3	gro	wet places in dof bb/df	350–1200	ag–nv	oc–dc	jn–ja	
<i>Cyanotis cristata</i> (L.) D. Don	h	a pd	4	gro epl epi	dof bb/df mxf eg/pine	425–1685	jn–dc	ag–fb	my–dc	
<i>Floscopa scandens</i> Lour.	h	pe	4	gro	streams in dof bb/df mxf egf	500–1400	nv–ap	dc–jn	ja–dc	
<i>Murdannia loureirii</i> (Hance) Rao & Kam.	h	pd	3	gro	da dof bb/df eg/pine	700–1350	ap–my	jn–jl	my–dc	
<i>Murdannia nudiflora</i> (L.) Bren.	h	ped	3	aqu gro	dof marshes bb/df	350–1200	my–nv	jl–ja	ja–dc	also found in wet places, often a weed
<i>Murdannia scapiflora</i> (Roxb.) Roy.	h	pd	3	gro	dof	450–700	ap–ag	jn–oc	ap–nv	
<i>Pollia hasskarlii</i> R. Rao	h	pe	4	gro epl	eg/pine da wet places in mxf egf	700–1525	jn–jl	ag–nv	ja–dc	usually in wet places
Xyridaceae										
<i>Xyris capensis</i> Thunb.	h	pd	3	gro	eg/pine	1425–1650	sp–nv	nv–ja	my–ja	
<i>Xyris pauciflora</i> Willd.	h	pd	3	aqu	marshes dof	450–700	oc–dc	nv–fb	my–ja	also found in wet places
Eriocaulaceae										
<i>Eriocaulon oryzatorum</i> Mart.	h	a	3	aqu gro	marshes dof bb/df	500–850	sp–mr	oc–ap	my–dc	also found in wet places
<i>Eriocaulon truncatum</i> B.–H. ex Mart.	h	a	3	gro	marshes dof	375–550	sp–mr	oc–ap	my–dc	also found in wet places
<i>Eriocaulon aff. ubonense</i> H. Lec.	h	a	2	gro	marshes wet places in egf eg/pine	1050–1100	ag–oc	ag–oc	jn–dc	
Musaceae										
<i>Musa acuminata</i> Colla ssp. <i>siamea</i> Simm.	h	pe	3	gro	wet areas & streams in da mxf open egf	400–700	ja–dc	ja–dc	ja–dc	flowering peak August–October, fruits 2 months after flowering, peak September–October
<i>Musa balbisiana</i> Colla	h	pe	2	gro	streams wet areas in dof bb/df egf cult	400–1300	ja–dc	ja–dc	ja–dc	possibly a relict of cultivation in natural areas, also definitely cultivated
<i>Musa itinerans</i> Cheesin.	h	pe	4	gro	streams wet areas in dof mxf egf da	700–1400	ja–dc	ja–dc	ja–dc	most common in upper water catchment valleys, in mud
<i>Musa sikkimensis</i> Kurz	h	pe	4	gro	streams wet areas in dof mxf egf da sg	600–1450	ja–dc	ja–dc	ja–dc	peak of flowering period August–October, fruits 2 months after flowering
Zingiberaceae										
<i>Alpinia blepharocalyx</i> K. Sch.	h	pe	2	gro	da eg/pine	1620–1620	fb–mr	jn–jl	ja–dc	
<i>Alpinia galanga</i> (L.) Willd.	h	ped	3	gro	dof bb/df mxf, open egf	600–1400	my–jl	oc–nv	ja–dc	often cultivated, often deciduous fb–ap
<i>Alpinia malaccensis</i> (Burm. f.) Rosc.	h	pe	3	gro	mxf egf streams	700–1525	mr–jn	ag–nv	ja–dc	aff. <i>Alpinia bracteata</i> Rosc.
<i>Amomum koenigii</i> Gmel.	h	pd	3	gro	mxf egf	700–1125	ap–my	jl–oc	my–dc	
<i>Amomum ovoideum</i> Pierre ex Gagnep.	h	pe	3	gro	egf	1000–1000	my–jn	ag–sp	ja–dc	
<i>Amomum repense</i> Pierre ex Gagnep.	h	pe	3	gro	egf eg/pine	1350–1650	my–jn	ag–sp	ja–dc	

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Antonium siamense</i> Craib	h	pe	4	gro	mx f egf	700–1425	my–jn	ag–nv	ja–dc	topotype
<i>Antonium</i> sp.	h	pd	3	gro	egf	1100–1425	my–jn	sp–oc	my–dc	
<i>Antonium</i> sp.	h	pd	2	gro	mx f	650–650	?	ag	my–dc	
<i>Boesenbergia longiflora</i> (Wall.) O. K.	h	pd	3	gro epl	bb/df mx f	450–850	jn–ag	sp–oc	my–nv	
<i>Boesenbergia longipes</i> (King & Prain) Schltr.	h	pd	3	gro	bb/df mx f	500–900	jl–sp	sp–nv	my–nv	syn. = <i>Curcumorpha longiflora</i> (Wall.) Rao & Verma
<i>Boesenbergia rotunda</i> (L.) Mansf.	h	pd	4	gro	bb/df mx f egf	625–1450	jn–sp	ag–nv	my–nv	
<i>Costus globosus</i> Bl. (var. <i>globosus</i>)	h	pe	2	gro	mx f egf	650–1100	jn–ag	nv–dc	ja–dc	
<i>Costus speciosus</i> (Koeh.) J. E. Sm.	h	pd	4	gro epl	da bb/df mx f	650–1620	ag–sp	oc–dc	my–dc	
					egf eg/pine					
<i>Curcuma</i> aff. <i>comosa</i> Roxb.	h	pd	2	gro	bb/df	650–900	jn–ag	?	ap–nv	
<i>Curcuma ecomata</i> Craib	h	pd	4	gro	da dof bb/df eg/pine	500–1550	my–jl	jl–ag	jn–nv	topotype
<i>Curcuma longa</i> L.	h	pd	3	gro	bb/df mx f eg/pine	500–1300	jl–ag	oc–nv	my–nv	
<i>Curcuma parviflora</i> Wall.	h	pd	4	gro	dof bb/df da in egf	350–1300	my–sp	jl–nv	ap–dc	
<i>Curcuma zedoaria</i> (Berg.) Rosc.	h	pd	4	gro	eg/pine da dof	350–1525	ap–jn	my–jl	ap–dc	
<i>Etingera littoralis</i> (Kon.) Gise.	h	pe	3	gro	da mx f egf	625–1550	mr–jn	oc–nv	ja–dc	
<i>Gagnepainia godefroyi</i> (Baill.) K. Sch.	h	pd	3	gro	bb/df mx f	350–850	ap–my	my–jn	my–nv	
<i>Glabba clarkei</i> Baker	h	pd	3	gro	da mx f egf eg/pine	800–1685	jl–sp	sp–dc	my–dc	
<i>Glabba kerrii</i> Craib	h	pd	3	gro	bb/df mx f egf	400–1200	jn–sp	jl–nv	my–dc	topotype
<i>Glabba nisbetiana</i> Craib	h	pd	3	gro	mx f egf	700–1300	jn–jl	sp–oc	my–dc	topotype
<i>Glabba nuda</i> K. Lar.	h	pd	3	gro	dof bb/df mx f	350–1025	ap–my	jn–ag	jn–nv	topotype
<i>Glabba purpurascens</i> Craib	h	pd	3	gro	bb/df mx f	525–925	jn–ag	ag–oc	my–dc	topotype
<i>Glabba reflexa</i> Craib	h	pd	3	gro	dof bb/df	400–925	my–ag	jl–oc	my–dc	topotype
<i>Glabba schomburgkii</i> Hk. f. var. <i>schomburgkii</i>	h	pd	3	gro	bb/df mx f	400–700	jn–jl	ag–sp	my–dc	
<i>Glabba villosula</i> Gagnep.	h	pd	3	gro	dof	650–850	jn–ag	ag–oc	ap–dc	
<i>Glabba xantholeuca</i> Craib	h	pd	2	gro	bb/df	450–450	jn–ag	ag–oc	ap–dc	
<i>Hedychium coccineum</i> Ham. ex J. Sm.	h	pd	3	gro	egf eg/pine	1250–1620	jn–ag	ag–oc	my–dc	
<i>Hedychium ellipticum</i> Ham. ex J. Sm.	h	pd	4	gro epi	egf eg/pine	1075–1685	jn–sp	ag–nv	my–dc	
<i>Hedychium gardnerianum</i> Rosc.	h	pd	4	gro	mx f egf eg/pine	550–1685	jl–nv	oc–ja	my–dc	
<i>Hedychium villosum</i> Wall.	h	pd	2	gro	eg/pine	1620–1620	mr–ap	jn–jl	my–dc	
<i>Kaempferia elegans</i> Wall.	h	pd	2	gro	egf	1125–1125	jn–jl	ag–sp	mr–dc	
<i>Kaempferia rooseana</i> Wall.	h	pd	2	gro	bb/df	400–650	jl–ag	sp–oc	ap–dc	
<i>Kaempferia rotunda</i> L.	h	pd	4	gro	dof bb/df eg/pine	350–1620	mr–jn	my–jl	jn–nv	

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Kaempferia siamensis</i> Siri.	h	pd	3	gro	dof	375–750	mr–jn	my–jl	fb–nv	
<i>Zingiber barbatum</i> Wall.	h	pd	2	gro	bb/df	550–550	jl–ag	sp–oc	my–nv	
<i>Zingiber bradleyanum</i> Craib	h	pd	3	gro	dof bb/df streams *	450–1000	ag–sp	nv–dc	my–ja	topotype
<i>Zingiber aff. integrum</i> Tong	h	pd	4	gro	bb/df egf	600–1250	jl–sp	(ag) oc–dc	my–dc	
<i>Zingiber kernii</i> Craib	h	pd	3	gro	eg/pine da	400–1525	jl–sp	oc–dc	ap–ja	topotype, exploited for its rhizomes which are used as a spice
<i>Zingiber parishii</i> Hk. f.	h	pd	3	gro	bb/df mxg	850–1000	ag–sp	nv–dc	ap–ja	
<i>Zingiber rubens</i> Roxb.	h	pd	3	gro	egf	1100–1450	ag–sp	nv–dc	my–dc	
<i>Zingiber smilacianum</i> Craib	h	pd	4	gro	da eg/pine	1050–1650	jl–sp	nv–ja	jn–dc	topotype
<i>Zingiber</i> sp.	h	pd	3	gro	egf	1125–1400	ag–sp	nv–dc	my–dc	
Marantaceae										
<i>Donax cannaeformis</i> (G. Forst.) K. Sch.	h	pe	3	gro	streams in mxg egf	700–900	mr–my	sp–dc	ja–dc	
<i>Halopegia brachystachys</i> Craib	h	pe	3	gro	bb/df	350–650	jl–oc	sp–nv	ja–dc	
<i>Phrynium capitatum</i> Willd.	h	pe	5	gro	wet places bb/df egf	450–1300	ap–jn	oc–nv	ja–dc	
<i>Stachytarphynum spicatum</i> (Roxb.) K. Sch.	h	pe	2	gro	mxg	450–700	jl–ag	dc–ja	ja–dc	
Liliaceae										
<i>Asparagus filiginosus</i> Ham. ex D. Don	h	pd	2	gro	eg/pine eg/bb	1200–1680	my–jn	oc–nv	ap–dc	
<i>Aspidistra longifolia</i> Hk. f.	h	pe	3	gro	da eg/pine egf	1000–1600	?	?	ja–dc	rarely flowering or fruiting
<i>Aspidistra suteensis</i> K. Lar.	h	pe	3	gro	egf	1250–1685	sp	jn	ja–dc	topotype, rarely flowering or fruiting
<i>Chlorophyllum intermedium</i> Craib var. <i>intermedium</i>	h	pe	3	gro	bb/df mxg egf	450–1500	jl–sp	ag–nv	ja–dc	topotype, q.v. <i>Chlorophyllum orchidistrum</i> Lindl.
<i>Dianella ensifolia</i> (L.) DC.	h	pe	4	gro	da bb/df mxg	550–1650	fb–my	ap–dc	ja–dc	
<i>Disporopsis longifolia</i> Craib	h	pd	4	gro	egf eg/pine	625–1575	jn–jl	ag–ja	ap–ja	topotype
<i>Disporum calcaratum</i> Wall. ex D. Don	h	pd	4	gro	da bb/df mxg	500–1680	my–ag	oc–dc	ap–ja	var. <i>rubiflorum</i> Gagnep. is probably not distinct
<i>Disporum cantoniense</i> (Lour.) Merr. var. <i>cantoniense</i>	h	pd	2	gro	egf eg/pine	1450–1685	my–jl	oc–nv	ap–dc	
<i>Iphigenia indica</i> (L.) A. Gray ex Kunth	h	pd	2	gro	dof	350–950	jl–sp	ag–oc	ap–nv	
<i>Lilium primulinum</i> Bak. var. <i>burmanicum</i> (W. W. Sm.) Stearn	h	pd	2	gro	eg/pine	1350–1650	jl–sp	nv–ja	ap–fb	
<i>Ophiopogon intermedium</i> D. Don	h	pe	3	gro	da mxg egf eg/pine	825–1620	my–jn	oc–nv	ja–dc	topotype of <i>Ophiopogon brevipes</i> Craib
<i>Ophiopogon longifolius</i> Decne.	h	pd	3	gro	dof bb/df mxg	375–825	my–jn	jl–ag	ap–dc	often as a synonym of <i>Ophiopogon longifolius</i> Decne.
<i>Ophiopogon malcolmsonii</i> Roy. ex Hk. f.	h	pe	3	gro	egf eg/pine	1050–1650	my–jl	nv–fb	ja–dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Ophiopogon regneri</i> Bois	h	pd	2	gro	bb/df	525–700	ap-jn	nv-ja	mr-nv	syn. = <i>Ophiopogon marmoratus</i> Pierre ex Rodr.
<i>Ophiopogon reptans</i> Hk. f.	h	pe	2	gro	egf streams	1250–1450	my-jn	dc-fb	ja-dc	
<i>Paris polyphylla</i> J. E. Smith	h	pd	2	gro	egf eg/pine	1025–1685	my-nv	sp-ja	jn-dc	
<i>Peliosanthes teta</i> Andr. ssp. <i>humilis</i> (Andr.) Jess.	h	pe	3	gro	da bb/df mx/f	600–1375	ap-my	dc-fb	my-dc	topotype of <i>Ophiopogon gracilipes</i> Craib, syn. = <i>Peliosanthes gracilipes</i> (Craib) N. Tana.
<i>Polygonatum kingianum</i> Coll. & Hemsl.	h	pd	2	gro	da sg	1100–1400	my-ji	sp-oc	my-dc	Maxwell, Nat. Hist. Bull. Siam Soc. 46:2 (1998) 151–153.
<i>Tupistra albiflora</i> K. Lar.	h	pe	3	gro epl	mx/f egf	600–1100	oc-dc	ji-oc	ja-dc	topotype, infrequently epilithic
Agavaceae <i>Dracaena angustifolia</i> Roxb.	l (h)	pe	2	gro	mx/f egf often near streams	400–1450	fb-mr	fb-mr	ja-dc	
Amaryllidaceae <i>Crinum watii</i> Baker	h	pd	2	gro	bb/df mx/f	350–1025	my	?	my-nv	
<i>Curculigo capitulata</i> (Lour.) O. K.	h	pe	3	gro	eg/pine da mx/f egf	650–1550	my-jn	sp-nv	ja-dc	syn. = <i>Molineria capitulata</i> (Lour.) O. K.
<i>Curculigo gracilis</i> (Kurz) Hk. f.	h	pe	3	gro	egf eg/pine	825–1620	ap-my	ji-ag	ja-dc	
<i>Curculigo latifolia</i> Dry. ex W. T. Ait. var. <i>latifolia</i>	h	pd	3	gro	bb/df egf	600–1350	my-ag	ji-oc	my-dc	
<i>Hypoxis aurea</i> Lour.	h	pd	3	gro	da dof bb/df eg/pine	450–1685	ap-ag	ji-oc	my-dc	
Iridaceae <i>Iris colletii</i> Hk. f.	h	pd	3	gro	dof bb/df eg/pine	450–1685	my-ag	sp-dc	ap-dc	
Smilacaceae <i>Smilax corbularia</i> Kunth ssp. <i>corbularia</i>	v	pe	3	gro	eg/pine da mx/f egf	700–1500	my-jn	ag-nv	ja-dc	
<i>Smilax lanceifolia</i> Roxb.	v	pe	3	gro	eg/pine egf	1050–1525	ja-fb	ag-oc	ja-dc	
<i>Smilax megacarpa</i> A. DC.	v	pe	2	gro	egf	1300–1300	ag-nv	nv-mr	ja-dc	
<i>Smilax ovalifolia</i> Roxb.	v	pe	4	gro	eg/pine da mx/f open egf	700–1550	ja-fb	mr-ji	ja-dc	
<i>Smilax perfoliata</i> Lour.	v	pe	4	gro	bb/df mx/f egf da	400–1400	sp-mr	ji-ja	ja-dc	
<i>Smilax verticalis</i> Gagnep.	v	pd	3	gro	eg/pine da dof	450–1525	ap-jn	ji-sp	ap-dc	
<i>Smilax zeylanica</i> L. ssp. <i>hemsleyana</i> (Craib) T. Koy.	v	pe	4	gro	da bb/df mx/f egf	450–1500	ap-ji	sp-dc	ja-dc	topotype
Araceae <i>Acorus gramineus</i> Sol. ex W. Ait.	h	pe	4	epl rhe	streams, rocks mx/f egf	700–1400	ja-mr	ap-jn	ja-dc	<i>q. v. Acorus rumphianus</i> S. Y. Hu

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Aglaonema simplex</i> (Bl.) Bl.	h	pe	2	gro	egf	1050–1300	ap–my	mr–ap	ja–dc	
<i>Alocasia macrorrhizos</i> (L.) G. Don	h	pe	3	gro also cul	mxf streams egf	450–1575	ja–dc	ja–dc	ja–dc	
<i>Alocasia navicularis</i> (C. Koch & Bou.) C. Koch & Bou.	h	pe	3	gro	egf	1000–1250	jn–jl	nv–ja	ja–dc	
<i>Amorphophallus corrugatus</i> N.E. Br.	h	pd	3	gro	egf	975–1525	mr–ap	my–jn	my–nv	topotype of <i>Thomsonia suteensis</i> Gagnep.; inflorescence, infructescence, & leaf not together on the same plant
<i>Amorphophallus</i> aff. <i>koratensis</i> Gagnep.	h	pd	2	gro	egf	1100–1200	jn–jl	?	my–nv	inflorescence, infructescence, & leaf not together on the same plant
<i>Amorphophallus krausei</i> Engl.	h	pd	3	gro epl	bb/df mxf	525–1025	jn–ag	oc–nv	my–nv	topotype of <i>Amorphophallus suteensis</i> Gagnep.; inflorescence, infructescence, & leaf not together on the same plant
<i>Amorphophallus longituberosus</i> (Engl.) Engl. & Gehrm.	h	pd	3	gro	dof bb/df	375–600	jn–jl	oc–nv	my–nv	inflorescence, infructescence, & leaf not together on the same plant
<i>Amorphophallus macrorrhizus</i> Craib	h	pd	3	gro	dof bb/df	375–550	ap–jn	my–jn	my–nv	topotype; inflorescence, infructescence, & leaf not together on the same plant; also topotype of <i>Amorphophallus longituberosus</i> (Engl.) Engl. & Gehrm. var. <i>robustus</i> Hu
<i>Amorphophallus paeoniifolius</i> (Denn.) Nichol.	h	pd	2	gro	bb/df	350–400	my–jn	nv–ja	my–nv	thickets; inflorescence, infructescence, & leaf not together on the same plant
<i>Amorphophallus yunnanensis</i> Engl.	h	pd	4	gro	eg/pine da egf	1000–1600	mr–ap	my–jl	my–nv	topotype of <i>Amorphophallus kerrii</i> N. E. Br.; inflorescence, infructescence, & leaf not together on the same plant
<i>Arisaema album</i> N.E. Br.	h	pd	3	gro	da egf eg/pine	1300–1525	jn–ag	sp–dc	my–nv	
<i>Arisaema cuspidatum</i> (Roxb.) Engl.	h	pd	3	gro	eg/pine da bb/df (streams) mxf egf	625–1525	my–jn	jl–sp	ap–nv	
<i>Arisaema erubescens</i> (Wall.) Schott	h	pd	3	gro	egf eg/pine	1350–1685	my–jl	ag–nv	ap–dc	topotype of <i>Arisaema hypoglaucaum</i> Craib and <i>Arisaema kerrii</i> Craib
<i>Arisaema praseri</i> Hk. f.	h	pd	3	gro	bb/df mxf egf	525–1350	ap–jn	ag–nv	my–dc	topotype of <i>Arisaema sooteensis</i> Craib
<i>Colocasia antiquorum</i> Schott	h	pe	3	gro	egf marsh	950–1475	jn–oc	ag–nv	ja–dc	
<i>Colocasia esculenta</i> (L.) Schott	h	pe	3	aqu gro	dof bb/df mxf	350–850	my–oc	ag–nv	ja–dc	wet places
<i>Colocasia fallax</i> Schott	h	pd	2	epl	streams in mxf egf da	900–1275	jl–sp	sp–dc	jn–nv	topotype of <i>Colocasia kerrii</i> Gagnep., often on rocks
<i>Colocasia gigantea</i> (Bl. ex Hassk.) Hk. f.	h	pd	3	gro epl	dof (streams) egf often on rocks	550–1575	ag–oc	oc–dc	my–dc	
<i>Epipremnum giganteum</i> (Roxb.) Schott	v cr	pe	3	epl epl	mxf egf	500–1100	jl–sp	ja–mr	ja–dc	
<i>Hapaline benthamiana</i> Schott	h	pd	3	gro	bb/df mxf egf	650–1125	ap–jn	my–jl	my–nv	
<i>Homalomena occulta</i> (Lour.) Schott	h	pe	3	gro	streams mxf egf	450–1050	my–ag	jn–sp	ja–dc	
<i>Lasia spinosa</i> (L.) Thw.	h	pe	3	gro	wet places in dof bb/df mxf egf	450–1125	fb–ap	ap–ag	ja–dc	open wet places

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Pothos chinensis</i> (Raf.) Merr.	v cr	pe	3	gro	mx f egf commonly near streams	650–1550	sp–oc	ja–fb	ja–dc	often appearing epiphytic or epilithic, syn. = <i>Pothos cathartii</i> Schott
<i>Remusatia pumila</i> (D. Don) Li. & Hay	h	pd	2	gro epl	rocks in bb/df mx f egf	500–1125	jin–jl	ag–oc	ap–dc	often on rocks, syn. = <i>Gonatanthus pumilus</i> (D. Don) Engl. & Krause
<i>Remusatia vivipara</i> (Lodd.) Schott	h	pd	3	epi epl	streams or rocks bb/df mx f egf	450–1050	jin–jl	ag–sp	my–oc	
<i>Rhaphidophora glauca</i> (Wall.) Schott	v cr	pe	2	epi	egf	1050–1200	oc–fb	dc–ap	ja–dc	
<i>Rhaphidophora hookeri</i> Schott	v cr	pe	2	gro	mx f egf	1300–1500	ap–my	jl–ag	ja–dc	
<i>Rhaphidophora peepia</i> (Roxb.) Schott	v cr	pe	3	gro	mx f egf eg/pine	350–1685	sp–dc	dc–jl	ja–dc	
<i>Typhonium hirsutum</i> (Hu) Mur. & Mayo	h	pd	1	gro	egf	1125–1150	my–jn	jl–nv	ap–nv	topotype
<i>Typhonium horsfieldii</i> (Miq.) Steen.	h	pd	1	gro epl	egf	1100–1250	jin–jl	sp–oc	my–nv	topotype of <i>Typhonium larsenii</i> Hu
<i>Typhonium trilobatum</i> (L.) Schott	h	pd	3	gro wec	da sg	350–400	ag–nv	oc–dc	my–nv	
Stemonaceae										
<i>Stemona burkillii</i> Prain	v	pd	3	gro	dof bb/df	350–600	my–jn	jl–ag	ap–nv	Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 81.
<i>Stemona kerrii</i> Craib	v cr	pd	3	gro	dof bb/df	525–900	my–nv	jl–dc	ap–nv	topotype; Maxwell, Nat. Hist. Bull. Siam Soc. 39:1 (1991) 82.
<i>Stemona tuberosa</i> Lour. var. <i>tuberosa</i>	v	pd	1	gro	eg/pine da egf	1125–1525	my–jl	jl–sp	my–dc	
Dioscoreaceae										
<i>Dioscorea alata</i> L.	v	pd	4	gro	da in bb/df egf	400–1400	nv–ja	fb–ap	my–dc	
<i>Dioscorea arachidna</i> Prain & Burk.	v	pd	3	gro	bb/df egf	400–1250	ag–oc	oc–ja	my–dc	topotype
<i>Dioscorea birmanica</i> Prain & Burk.	v	pd	2	gro	bb/df	350–400	jl–ag	ag–oc	my–nv	
<i>Dioscorea bulbifera</i> L.	v	pd	3	gro	da bb/df mx f open egf	450–1375	sp–nv	nv–ja	my–dc	
<i>Dioscorea decipiens</i> Hk. f.	v	pd	3	gro	eg/pine da mx f egf	350–1525	sp–nv	dc–mr	my–mr	thickets
<i>Dioscorea esculenta</i> (Lour.) Burk. var. <i>fasciculata</i> (Roxb.) Prain & Burk.	v	pe	2	gro	egf	1250–1400	fb–ap	ja–ap	my–nv	often in disturbed areas
<i>Dioscorea glabra</i> Roxb. var. <i>glabra</i>	v	pd	4	gro	da bb/df mx f	350–1400	oc–nv	nv–ja	my–dc	thickets, topotype of <i>Dioscorea glabra</i> Roxb. var. <i>vera</i> Prain & Burk. and <i>Dioscorea siamensis</i> R. Kunth
<i>Dioscorea hamiltonii</i> Hk. f.	v	pe	2	gro	da egf	1025–1025	sp–oc	ja	ja–dc	open areas
<i>Dioscorea hispida</i> Denn. var. <i>hispida</i>	v	pd	3	gro	bb/df	450–700	ap	jin–jl	my–nv	
<i>Dioscorea hispida</i> Denn. var. <i>mollissima</i> (Bl.) Prain & Burk.	v	pd	3	gro	bb/df eg/bb da	350–1350	jl–ag	oc–nv	ap–nv	open areas
<i>Dioscorea hispida</i> Denn. var. <i>neo-scaphoides</i> Prain & Burk.	v	pd	3	gro	bb/df mx f	350–800	jl–sp	nv–ja	ap–nv	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Dioscorea kamoensis</i> Kunth var. <i>straminea</i> Prain & Burck.	v	pd	3	gro	egf da eg/pine	1325-1610	sp-oc	?	my-nv	topotype, thickets
<i>Dioscorea kerrii</i> Prain & Burck.	v	pd	2	gro	da bb/df	450-500	sp-oc	nv-dc	ap-oc	topotype
<i>Dioscorea membranacea</i> Pierre ex Prain & Burck.	v	pd	3	gro epl	da bb/df egf	375-1550	jin-ag	ag-oc	ap-nv	
<i>Dioscorea pentaphylla</i> L. var. <i>communis</i> Prain & Burck.	v	pd	3	gro	da bb/df mx f egf eg/pine	450-1525	sp-nv	nv-ja	ap-ja	open areas, topotype
<i>Dioscorea prazieri</i> Prain & Burck.	v	pd	3	gro	bb/df mx f egf eg/pine	700-1650	jl-oc	oc-ja	ap-ja	open areas
<i>Dioscorea pseudo-nitens</i> Prain & Burck.	v	pe	2	gro	egf	1375-1475	ap	?	ja-dc	
<i>Dioscorea rockii</i> Prain & Burck.	v	pd	2	gro	egf da sg	1050-1400	oc-nv	dc-ja	ap-ja	
Palmae										
<i>Areca laosensis</i> Becc.	l h s	pe	4	gro	streams in mx f egf	625-1350	mr-ap	oc-ja	ja-dc	
<i>Calamus arborescens</i> Griff.	wc	pe	1	gro	egf	1050-1050	?	?	ja-dc	
<i>Calamus kerrius</i> Becc.	wc	pe	3	gro	mx f egf eg/pine	700-1525	ja-mr	mr-jn	ja-dc	fruits described: Maxwell, Nat. Hist. Bull. Siam Soc. 40:2 (1992) 188.
<i>Livistona speciosa</i> Kurz	t	pe	2	gro	egf	1250-1350	sp-nv	mr-jl	ja-dc	
<i>Phoenix loureiri</i> Kunth var. <i>loureiri</i>	l (h)	pe	3	gro	dof bb/df	500-950	ja-mr	ap-jn	ja-dc	syn. = <i>Phoenix humilis</i> Roy. var. <i>loureiri</i> (Kunth) Becc.
<i>Plectocomia kerrana</i> Becc.	wc	pe	1	gro	egf	1350-1400	ap	dc-my	ja-dc	topotype
<i>Wallichia caryotoides</i> Roxb.	l	pe	4	gro	streams mx f egf	550-1450	oc-nv	nv-ja	ja-dc	
Pandanaceae										
<i>Pandanus penetrans</i> St. John	l	pe	3	gro	mx f (streams) egf	425-1375	?	ag-nv	ja-dc	topotype, also a herb
Apostasiaceae										
<i>Apostasia wallichii</i> R. Br.	h	pd	2	gro	bb/df mx f	550-700	jin-jl	sp-nv	ap-nv	
Taccaceae										
<i>Tacca chantrieri</i> Andre	h	pe	3	gro	mx f egf (streams)	550-800	jin-dc	oc-fb	ja-dc	
<i>Tacca integrifolia</i> Ker-Gawl.	h	pe	3	gro	egf mx f	700-1175	jin-nv	oc-fb	ja-dc	
Burmanniaceae										
<i>Burmannia coelestis</i> D. Don	h	a	2	gro	dof	500-600	oc-nv	nv-dc	ag-oc	
<i>Burmannia wallichii</i> (Miers) Hk. f.	h	a	2	gro sap	bb/df	500-550	oc-nv	nv-dc	leafless	lacking chlorophyll
Orchidaceae										
<i>Acanthophippium striatum</i> Lindl.	h	pe	3	gro	egf (streams)	1100-1450	my-jn	ja-fb	ja-dc	
<i>Acropis indica</i> Wight	h	pe	3	epl	dof	550-850	mr-ap	?	ja-dc	
<i>Aerides falcata</i> Lindl.	h	pe	2	epl	bb/df	350-350	my-jn	jl-sp	ja-dc	
<i>Anoetochilus brevistylus</i> (Hk. f.) Ridl.	h	pe	2	gro	egf (streams)	1275-1275	jl	?	ja-dc	
<i>Anoetochilus elwesii</i> (Cl. ex Hk. f.) King & Pantl.	h	pe	2	gro	egf (streams)	1425-1425	jin-jl	?	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Anoetochilus repens</i> (Dow.) Seid. & Smit.	h	pe	2	gro	egf (streams)	1275-1275	jn-jl	?	ja-dc	topotype
<i>Anoetochilus siamensis</i> Schltr.	h	pe	1	gro	egf	1025-1050	nv	?	ja-dc	topotype
<i>Anoetochilus tortus</i> (King & Pantl.) King & Pantl.	h	pe	1	epi gro	rocks streams egf (streams)	1425-1425	jn-jl	?	ja-dc	
<i>Anthogonium gracile</i> Wall. ex Lindl.	h	pd	3	gro epl	rocks eg/pine	1275-1300	oc-dc	ja-fb	my-dc	lacking chlorophyll
<i>Aphyllorchis caudata</i> Rol. ex Dow.	h	pd	3	gro sap par	egf	1100-1350	oc-nv	dc-ja	leafless	topotype of <i>Aphyllorchis unguiculata</i>
<i>Aphyllorchis montana</i> Rehb. f.	h	pd	3	gro sap par	dof bb/df egf	500-1200	jl-sp	sp-nv	leafless	Rol. ex Dow., lacking chlorophyll
<i>Arundina graminifolia</i> (D. Don) Hochr.	h	pe	1	gro	da dof	600-1150	ag-nv	oc-ja	ja-dc	open areas
<i>Brachycorythis helferi</i> (Rehb. f.) Summ.	h	pd	2	gro	bb/df	550-1000	jl-nv	?	my-dc	topotype
<i>Brachycorythis henryi</i> (Schltr.) Summ.	h	pd	3	gro	dof bb/df	500-700	jl-ag	?	my-dc	topotype
<i>Bromheadia aporoides</i> Rehb. f.	h	pe	2	gro	dof	550-700	ap-my	ag-sp	ja-dc	
<i>Bulbophyllum bitnerianum</i> Schltr.	h	pe	3	epi	egf eg/pine	1050-1300	ag-sp	?	ja-dc	topotype of <i>Bulbophyllum bractescens</i> Rol. ex Kerr
<i>Bulbophyllum congestum</i> Rol.	h	pe	3	epi	mx	650-650	my-jn	?	ja-dc	
<i>Bulbophyllum morphologorum</i> Krzl.	h	pe	2	epi	egf	1475-1475	fb-mr	?	ja-dc	topotype of <i>Bulbophyllum dixonii</i> Rol.
<i>Bulbophyllum nigrescens</i> Rol.	h	pe	3	epi	eg/pine	1250-1250	ap-my	?	ja-dc	
<i>Bulbophyllum propinquum</i> Krzl.	h	pe	3	epi	mx	650-650	my-jn	?	ja-dc	topotype of <i>Bulbophyllum chlorostachys</i> Schltr.
<i>Bulbophyllum secundum</i> Hk. f.	h	pd	3	epi epl	rocks in eg/pine	1250-1650	ap-jn	?	ap-mr	
<i>Bulbophyllum suavissimum</i> Rol.	h	pd	3	epi	eg/pine	1500-1650	fb-mr	?	jn-nv	
<i>Calanthe cardioglossa</i> Schltr.	h	pd	3	gro	rocks mx egf eg/pine	800-1500	oc-dc	?	my-dc	topotype of <i>Calanthe hosseusiana</i> Krzl.
<i>Calanthe clavata</i> Lindl.	h	pe	2	gro	egf streams	1125-1125	nv	?	ja-dc	
<i>Cheirostylis griffithii</i> Lindl.	h	pd	3	gro sap	egf eg/pine	1200-1685	fb	?	my-dc	lacking chlorophyll
<i>Chiloschista parishii</i> Seid.	h	pd	3	epi	mx	450-500	ap-my	?	jn-dc	
<i>Chrysoglossum ornatum</i> Bl.	h	pe	2	epi	egf	1425-1425	jn-jl	?	ja-dc	
<i>Cirrhopetalum retusiusculum</i> (Rehb. f.) Hemsl.	h	pe	3	epi	eg/pine	1450-1450	jl-ag	?	ja-dc	basionym = <i>Bulbophyllum retusiusculum</i> Rehb. f.
<i>Cleisomeria lanata</i> (Lindl.) Lindl.	h	pe	3	epi	dof	500-500	my-jn	?	ja-dc	
<i>Cleisostoma arctinum</i> (Rehb. f.) Garay	h	pe	3	epi	dof	500-500	my-nv	oc-dc	ja-dc	topotype of <i>Sarcianthus recurvus</i> Rol. ex Dow.
<i>Cleisostoma filiforme</i> (Lindl.) Garay	h	pe	3	epi	dof bb/df	400-1200	my-jn	oc-dc	ja-dc	
<i>Cleisostoma fuerstenbergianum</i> Krzl.	h	pe	3	epi	dof mx egf eg/pine	400-1620	my-sp	?	ja-dc	topotype of <i>Sarcianthus flagelliformis</i> Rol. ex Dow.
<i>Cleisostoma racemiferum</i> (Lindl.) Garay	h	pe	2	epi	egf eg/pine	1150-1450	my-jl	ja-dc	ja-oc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cleistanthus rolfianum</i> (King & Pantl.) Garay	h	pe	2	epi eg/pine	1650–1650	my-jn	?	ja-dc	ja-dc	
<i>Coelogyne lentiginosa</i> Lindl.	h	pe	3	epi	mx f egf	550–925	sp-oc	?	ja-dc	
<i>Coelogyne schultesii</i> Jain & Das	h	pe	3	epi	egf eg/pine	1450–1650	jl-sp	?	ja-dc	
<i>Coelogyne trinervis</i> Lindl.	h	pe	3	epi epl	rocks in dof	450–600	sp-nv	oc-dc	ja-dc	
<i>Crepidium acuminatum</i> (D. Don) Szlach.	h	pd	2	gro	eg/pine	1300–1685	jn-ag	?	ap-nv	topotype of <i>Microstylis siamensis</i> Rol. ex Dow.
<i>Crepidium bicaurium</i> (Lindl.) Szlach.	h	pd	2	gro	mx f egf	825–950	my-jn	sp-oc	ap-nv	topotype of <i>Microstylis suteensis</i> Rol. ex Dow.
<i>Crepidium calophyllum</i> (Rchb. f.) Szlach.	h	pd	2	gro	mx f egf streams	600–900	my-jl	sp-oc	ap-nv	syn. = <i>Malaxis calophyllum</i> (Rchb. f.) Kze.
<i>Crepidium orbicularum</i> (W. W. Sm. & Jeff.) Seid.	h	pd	2	gro	eg/pine	1500–1685	jn-ag	?	ap-nv	topotype of <i>Microstylis tenebrosa</i> Rol. ex Dow.
<i>Cymbidium aloifolium</i> (L.) Sw.	h	pe	3	epi	bb/df	350–350	my-jn	?	ja-dc	
<i>Cymbidium dayanum</i> Rchb. f.	h	pe	2	epi	egf mx f	600–1300	ap-my	?	ja-dc	topotype of <i>Cymbidium suteense</i> Rol. ex Dow.
<i>Cymbidium ensifolium</i> (L.) Sw.	h	pd	2	epi	dof dof/pine	450–1200	my-jl	ja-fb	jn-fb	
<i>Cymbidium lancifolium</i> Hk.	h	pe	2	gro	egf eg/pine	1150–1500	my-jl		ja-dc	topotype of <i>Cymbidium kerrii</i> Rol. ex Dow.
<i>Cymbidium siamense</i> Rol. ex Dow.	h	pd	3	gro	dof mx f	825–1000	ap-jn	?	my-dc	topotype
<i>Cymbidium tracyanum</i> O' Brien	h	pe	1	epi	egf eg/pine	1650–1650	mr (dc)	?	ja-dc	
<i>Cyrtosia nana</i> (Rol. ex Dow.) Garay	h	pd	2	gro sap	egf	1100–1325	my-ag	nv	leafless	topotype, syn. = <i>Galeola nana</i> Rol. ex Dow., lacking chlorophyll
<i>Dendrobium aphyllum</i> (Roxb.) Fischer	h	pd	3	epi	dof mx f eg/pine	600–1225	ap-my	?	jn-dc	
<i>Dendrobium cariniferum</i> Rchb. f.	h	pe	3	epi	eg/pine	1500–1650	mr-my	?	ja-dc	
<i>Dendrobium christyanthum</i> Rchb. f.	h	pe	3	epi	eg/pine	1450–1650	jl-ag	?	ja-dc	
<i>Dendrobium compactum</i> Rol. ex W. Hack.	h	pe	2	epi	eg/pine	1325–1650	oc-dc	?	ja-dc	topotype
<i>Dendrobium crystallinum</i> Rchb. f.	h	pe	2	epi	bb/df egf	925–1225	mr-ap	?	ja-dc	
<i>Dendrobium dixanthum</i> Rchb. f.	h	pd	2	epi epl	bb/df	750–925	mr-ap	?	my-dc	
<i>Dendrobium falconeri</i> Hk.	h	pd	2	epi	eg/pine	1200–1650	ap-my	?	jn-dc	
<i>Dendrobium fimbriatum</i> Hk.	h	pe	2	epi	dof dof/pine eg/pine	550–1300	fb-mr	my-dc	ja-dc	
<i>Dendrobium gratiosissimum</i> Rchb. f.	h	pd	2	epi	bb/df	425–425	ap-my	?	my-dc	
<i>Dendrobium heterocarpum</i> Lindl.	h	pd	2	epi	eg/pine	1000–1650	fb-mr	?	my-dc	
<i>Dendrobium lindleyi</i> Steud.	h	pe	2	epi	dof	650–650	mr-ap	?	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Dendrobium moschatum</i> (B.-H.) Sw.	h	pe	2	epi	bb/df mxf streams	550-650	my-jn	?	ja-dc	
<i>Dendrobium ochreatum</i> Lindl.	h	pe	2	epi	do/pine eg/pine	1400-1600	ap-my		ja-dc	
<i>Dendrobium parvum</i> Rchb. f.	h	pe	2	epi	dof	825-825	ap-my	?	ja-dc	
<i>Dendrobium porphyphyllum</i> Guill.	h	pe	2	epi	dof	500-700	ag-sp	?	ja-dc	syn. = <i>Dendrobium indivisum</i> (Bl.) Miq. var. <i>lampangense</i> Rol. ex Dow.
<i>Dendrobium primulinum</i> Lindl.	h	pd	2	epi	dof do/pine	450-1000	ja-fb	?	my-dc	
<i>Dendrobium pulchellum</i> Roxb. ex Lindl.	h	pd	2	epi	dof	500-650	mr-ap	?	my-dc	
<i>Dendrobium secundum</i> (Bl.) Lindl.	h	pd	3	epi	dof	400-850	mr-ap	?	my-nv	
<i>Dendrobium senile</i> Par. & Rchb. f.	h	pe	2	epi	dof	875-875	mr-ap	?	ja-dc	
<i>Dendrobium signatum</i> Rchb. f.	h	pe	2	epi	bb/df	925-925	mr-ap	?	ja-dc	
<i>Dendrobium stuposum</i> Lindl.	h	pd	2	epi	eg/pine	1500-1650	my-jn	?	my-dc	
<i>Dendrobium suteppense</i> Rol. ex Dow.	h	pe	1	epi	eg/pine	1650-1685	ap-my	my-jn	ja-dc	
<i>Dendrobium venustum</i> Teijsm. & Binn.	h	pd	2	epi	bb/df	425-625	ag-sp	?	my-dc	
<i>Dendrobium wilmsianum</i> Schltr.	h	pd	2	epi	eg/pine	1600-1685	nv-dc	?	jn-fb	topotype
<i>Dendrobium</i> sp. (sect. <i>Aporum</i> (Bl.) Lindl.)	h	pd	2	epi	dof	550-550	?	?	my-dc	
<i>Didymoplexiella siamensis</i> (Rol. ex Dow.) Seid.	h	pd	2	sap gro	mxf egf streams	825-1075	ap-jn	?	leafless	topotype, lacking chlorophyll
<i>Diplorora championi</i> (Lindl.) Hk. f.	h	pe	2	epi	eg/pine	1500-1685	mr-ap	?	ja-dc	
<i>Disperis siamensis</i> Rol. ex Dow.	h	pe	2	epi	egf	1000-1000	jl-ag	?	ja-dc	
<i>Drymoda siamensis</i> Schltr.	h	pd	2	epi	dof bb/df	850-950	mr-ap	?	my-dc	
<i>Epipogium roseum</i> (D. Don) Lindl.	h	pd	2	gro sap	egf	1000-1100	my	jn	leafless	lacking chlorophyll
<i>Eria acervata</i> Lindl.	h	pe	2	epi	dof	550-550	mr-ap	?	ja-dc	
<i>Eria affinis</i> Griff.	h	pe	2	epi	egf	1450-1450	jl-ag	?	ja-dc	syn. = <i>Eria bracteescens</i> Lindl. var. <i>affinis</i> (Griff.) Hk. f.
<i>Eria bipunctata</i> Lindl.	h	pe	2	epi	egf	1400-1550	jl-ag	?	ja-dc	
<i>Eria pannea</i> Lindl.	h	pe	3	epi	dof	500-850	my-jl	?	ja-dc	
<i>Eria perpusilla</i> Par. & Rchb. f.	h	pd	2	epi	dof	925-925	my-jn	?	my-dc	
<i>Eria siamensis</i> Schltr.	h	pe	2	epi	egf eg/pine	1350-1650	ja-mr	?	ja-dc	topotype
<i>Eria suteppensis</i> Rol. ex Dow.	h	pe	2	epi	eg/pine	1500-1650	fb-mr	?	ja-dc	topotype
<i>Eulophia geniculata</i> King & Pantl.	h	pd	2	gro	dof	600-700	ag-sp	?	jn-mr	
<i>Eulophia nuda</i> Lindl.	h	pd	3	gro	dof open egf eg/pine da	350-1675	ap-jn	?	jn-ap	topotype of <i>Eulophia burkei</i> Rol. ex Dow.
<i>Eulophia pauciflora</i> Guill.	h	pd	2	gro	dof	400-950	jn-sp	?	jn-fb	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Eulophia siamensis</i> Rol. ex Dow.	h	pd	2	gro	dof	500-700	ag-sp	?	my-dc	
<i>Galeola integra</i> Rol. ex Dow.	h	pd	2	gro	egf	1000-1100	ap-my	my-jn	leafless	topotype, lacking chlorophyll
<i>Gastrodia exilis</i> Hk. f.	h	pd	2	gro sap	egf	1100-1650	ag-oc	?	leafless	topotype of <i>Gastrodia siamensis</i> Rol. ex Dow., lacking chlorophyll
<i>Geodonum attenuatum</i> Griff.	h	pd	2	gro	dof bb/df mxf	500-950	my-jl	?	my-dc	
<i>Geodonum citrinum</i> Jacks.	h	pd	2	gro	bb/df	500-600	jn-jl	?	ap-dc	
<i>Geodonum siamense</i> Rol. ex Dow.	h	pd	2	gro	dof bb/df	425-625	ap-jn	?	ap-dc	topotype
<i>Goodyera fumata</i> Thw.	h	pe	2	gro	egf	1125-1125	mr-ap	?	ja-dc	topotype
<i>Goodyera procera</i> (Ker-Gawl.) Hk.	h	pe	2	gro	rocks streams bb/df mxf	575-1050	mr-ap	ap-my	ja-dc	
<i>Goodyera thailandica</i> Seid.	h	pe	2	gro	egf	1125-1125	fb-mr	?	ja-dc	moist areas
<i>Goodyera viridiflora</i> (Bl.) Bl.	h	pe	2	gro	egf	1125-1125	jl-ag	?	ja-dc	
<i>Habenaria amplexicaule</i> Rol. ex Dow.	h	pd	2	gro	bb/df	450-700	oc-dc	?	my-dc	topotype
<i>Habenaria dentata</i> (Sw.) Schltr.	h	pd	2	gro	dof eg/pine	525-1575	sp-nv	?	jl-ja	
<i>Habenaria fucifera</i> Lindl.	h	pd	2	gro	bb/df	450-650	sp-oc	?	jl-dc	
<i>Habenaria holotricha</i> Gagnep.	h	pd	2	gro	egf	1350-1350	nv-dc	?	jl-ja	
<i>Habenaria hosseusii</i> Schltr.	h	pd	2	gro	dof	425-425	sp	?	jl-nv	
<i>Habenaria humistrata</i> Rol. ex Dow.	h	pd	2	gro	dof	475-900	my-sp	?	ap-nv	topotype
<i>Habenaria limprichtii</i> Schltr.	h	pd	2	gro	eg/pine	1450-1650	jl-ag	?	ap-nv	topotype
<i>Habenaria lucida</i> Wall. ex Lindl.	h	pd	2	gro	dof bb/df	350-700	ag-sp	?	ap-nv	topotype of <i>Habenaria recurva</i> Rol. ex Dow.
<i>Habenaria maliniana</i> (Blanco) Merr.	h	pd	3	gro	dof bb/df mxf eg/pine	450-1300	oc-dc	?	ap-ja	
<i>Habenaria medioflexa</i> Tur.	h	pd	2	gro	bb/df	375-375	nv	?	jn-ja	topotype of <i>Habenaria trichochila</i> Rol. ex Dow.
<i>Habenaria rostellifera</i> Rehb. f.	h	pd	2	gro	dof	525-525	sp-oc	?	jn-nv	
<i>Habenaria stenopetala</i> Lindl. var. <i>stenopetala</i>	h	pd	2	gro	eg/pine	1350-1685	ag-sp	?	jn-dc	topotype of <i>Habenaria sutepensis</i> Rol. ex Dow.
<i>Habenaria viridiflora</i> (Rottl.) ex Sw.) R. Br.	h	pd	2	gro	mxf streams	675-675	ag-sp	?	jn-dc	
<i>Liparis downii</i> Ridl.	h	pd	2	gro	dof	550-700	jl-ag	?	my-nv	
<i>Liparis paradoxa</i> (Lindl.) Rehb. f.	h	pd	3	gro	dof bb/df	600-875	my-jn	?	ap-nv	topotype of <i>Liparis odorata</i> Lindl. var. <i>longiscapa</i> Rol. ex Dow.
<i>Liparis regneri</i> Fin.	h	pd	2	gro	egf	1150-1400	jn-jl	?	my-nv	topotype of <i>Liparis craibiana</i> Kert. open areas
<i>Liparis siamensis</i> Rol. ex Dow.	h	pd	2	gro	da dof	400-1275	jl	?	my-nv	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Liparis sutehensis</i> Rol. ex Dow.	h	pd	3	gro	dof bb/df mx	450-700	jn-ag	?	my-nv	topotype
<i>Liparis viridiflora</i> (Bl.) Lindl.	h	pd	2	epi epl	mx	800-1400	jl-dc	dc-ja	my-fb	
<i>Liparis wrayi</i> Hk. f.	h	pd	2	gro	egf streams	1000-1050	jl	?	my-nv	topotype of <i>Liparis fimbriata</i> Kerr
<i>Luisia thailandica</i> Seid.	h	pe	2	epi	dof eg/pine	825-1450	ap-my	?	ja-dc	topotype of paratype
<i>Monemeria barbata</i> Lindl.	h	pe	2	epi	eg/pine	1500-1500	nv-dc	?	ja-dc	
<i>Nervilia aragoana</i> Gaud.	h	pd	2	gro	dof bb/df mx	375-1250	ap-my	?	jin-nv	
<i>Nervilia calcicola</i> Kerr	h	pd	1	gro	bb/df	625-625	my	?	jin-nv	
<i>Nervilia crociformis</i> (Zoll. & Mor.) Seid.	h	pd	2	gro	bb/df mx	650-1050	jn	?	jl-nv	syn. = <i>Nervilia prainiana</i> (King & Pantl.) Seid.
<i>Nervilia plicata</i> (Andr.) Schltr.	h	pd	2	gro	dof bb/df	450-950	ap-my	?	jin-nv	
<i>Oberonia acutis</i> Griff.	h	pe	2	epi	dof	750-900	ag-sp	nv-dc	ja-dc	topotype of <i>Oberonia hosseusii</i> Schltr. ex Hoss.
<i>Oberonia pachyphylla</i> King & Pantl.	h	pd	2	epi epl	bb/df mx	750-1650	oc-nv	mr-ap	jin-ap	topotype of <i>Oberonia umbraticola</i> Rol.
<i>Ornithochilus difformis</i> (Wall. ex Lindl.) Schltr.	h	pe	2	epi	mx	950-1150	jn-ag	?	ja-dc	syn. = <i>Ornithochilus fuscus</i> Wall. ex Lindl.
<i>Otochilus albus</i> Lindl.	h	pe	3	epi	eg/pine	1400-1650	my-jn	sp-nv	ja-dc	
<i>Pachystoma pubescens</i> Bl.	h	pd	2	gro	dof	500-850	ja-fb	?	my-nv	
<i>Pecteilis susanna</i> (L.) Raf.	h	pd	1	gro	dof	375-525	sp-oc	nv-dc	my-nv	
<i>Peristylus constrictus</i> (Lindl.) Lindl.	h	pd	2	gro	eg/pine dof bb/df	500-1525	jin-ji	?	my-nv	
<i>Peristylus goodyeroides</i> (D. Don) Lindl.	h	pd	2	gro	bb/df eg/pine	825-1620	my-ji	?	ap-nv	
<i>Peristylus gracilis</i> Bl.	h	pd	2	gro	mx	800-1100	ag-sp	?	my-nv	
<i>Peristylus lacertiferus</i> (Lindl.) J. Sm.	h	pd	2	gro	dof bb/df mx	675-1025	ag-sp	?	my-nv	
<i>Peristylus tentaculatus</i> (Lindl.) J. J. Sm.	h	pd	2	gro	mx	850-1650	ag-oc	?	my-nv	topotype of <i>Habenaria garrettii</i> Rol. ex Dow.
<i>Phaius tankervilleae</i> (Banks ex L' Her.) Bl.	h	pe	1	gro	eg/pine	1500-1550	mr-ap	my-jn	ja-dc	
<i>Phalaenopsis cornu-cervi</i> (Breda) Bl. & Rehb. f.	h	pe	2	epi	bb/df	500-500	ap-my	?	ja-dc	
<i>Pholidota articulata</i> Lindl.	h	pe	3	epi, less often epl	mx	650-1650	my-ji	jl-oc	ja-dc	
<i>Pholidota bracteata</i> (D. Don) Seid.	h	pe	2	epi	eg	1100-1685	jl	sp-oc	ja-dc	
<i>Pholidota convallariae</i> (Rehb. f.) Hk. f. var. <i>convallariae</i>	h	pe	2	epi	eg	1500-1650	my-jn	sp-oc	ja-dc	
<i>Pholidota imbricata</i> Hk.	h	pe	2	epi	mx	725-725	jl-ag	oc-nv	ja-dc	

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Polystachya concreta</i> (Jacq.) Garay & Sweet	h	pe	1	epi	dof	850–850	sp-oc	?	ja-dc	topotype of <i>Dendrobium parvum</i> Seid.
<i>Rhynchogyna saccata</i> Seid. & Garay	h	pe	2	epi	dof	425–650	ap (oc)	?	ja-dc	
<i>Rhynchostylis coelestis</i> Rchb. f.	h	pe	2	epi	dof eg	350–600	my	?	ja-dc	
<i>Spathoglottis pubescens</i> Lindl.	h	pd	4	gro	dof eg/pine egf (cliffs)	375–1575	ag-oc	?	my-nv	
<i>Saurochilus loratus</i> (Rol. ex Dow.) Seid.	h	pe	2	epi	egf eg/bb	1000–1100	nv-dc	?	ja-dc	topotype, basionym = <i>Ascochilus loratus</i> Rol. ex Dow.
<i>Stereosandra javanica</i> Bl.	h	pd	2	gro sap	egf streams	925–1100	my-jn	?	leafless	lacking chlorophyll
<i>Sunipia racemosa</i> (J.E. Sm.) Tang & Wang	h	pe	2	epi	egf eg/pine	1350–1620	ap-my	?	ja-dc	
<i>Taeniophyllum glandulosum</i> Bl.	h	pe	2	gro	egf	1100–1100	ja-fb	ap-my	ja-dc	
<i>Tainia angustifolia</i> (Lindl.) Bth. & Hk. f.	h	pe	2	gro	bb/df mx/df egf	450–1075	sp-dc	?	ja-dc	topotype of <i>Tainia suteppensis</i> (Rol. ex Dow.) Seid. & Smit.
<i>Tainia hookeriana</i> King & Paml.	h	pe	2	gro	mx/df	650–650	ja-fb	?	ja-dc	topotype of <i>Ascotainia stamensis</i> Rol. ex Dow.
<i>Tainia speciosa</i> Bl.	h	pe	2	gro	egf	1000–1000	ag-oc	?	ja-dc	
<i>Tainia viridifusca</i> (Hk.) Bth. & Hk. f.	h	pe	1	gro	eg/pine	1450–1450	ja-fb	?	ja-dc	
<i>Trichostema dasyphylla</i> (Par. & Rchb. f.) Krzl.	h	pe	3	epi	egf eg/pine	1300–1685	my-jl	ag-fb	ja-dc	syn. = <i>Eria dasyphylla</i> Par. & Rchb. f.
<i>Tropidia angulosa</i> (Lindl.) Bl.	h	pe	2	gro	egf	1075–1075	sp-oc	ja-fb	ja-dc	
<i>Tropidia curculigoides</i> Lindl.	h	pe	2	gro	dof bb/df mx/df	450–850	jl-sp	?	ja-dc	
<i>Tropidia pedunculata</i> Bl.	h	pe	2	gro	dof mx/df	475–800	jl	nv	ja-dc	
<i>Vanda brunnea</i> Rchb. f.	h	pe	2	epi	dof	500–600	mr-ap	?	ja-dc	
<i>Vanilla siamensis</i> Rol. ex Dow.	v	pe	3	epi gro	mx/df egf streams	525–1250	ap-jn	dc-ja	ja-dc	topotype
<i>Zeuxine affinis</i> (Lindl.) Bth. ex Hk. f.	h	pd	3	gro sap	egf eg/pine	1000–1650	nv-mr	?	jn-ap	topotype of <i>Zeuxine suteppensis</i> Rol. ex Dow.
Cyperaceae										
<i>Bulbostylis barbata</i> (Rottb.) Cl.	h	a	3	gro	dof	350–600	jl-oc	ag-nv	jn-nv	
<i>Bulbostylis densa</i> (Wall.) Hand.-Mazz.	h	a	3	gro	eg/pine	1200–1650	jl-oc	ag-nv	jn-nv	
<i>Carex commixta</i> Sleud.	h	pe	2	gro	egf	1050–1100	nv-dc	dc-ja	ja-dc	syn. = <i>Carex smitinandii</i> Ray.
<i>Carex baccans</i> Nees	h	pe	3	gro	eg/pine	1200–1450	jl-sp	nv-dc	ja-dc	
<i>Carex condensata</i> Ness	h	pe	3	gro	eg/pine	1450–1650	jl-ag	oc-dc	ja-dc	similar to <i>Carex cruciata</i> Wahl.
<i>Carex continua</i> Cl.	h	pd	3	gro	dof	375–850	jl-oc	nv-ja	my-dc	
<i>Carex cruciata</i> Wahl.	h	pe	3	gro	eg/pine	1500–1650	jl-ag	nv-dc	ja-dc	
<i>Carex doisutepensis</i> T. Koy.	h	pe	3	gro	mx/df eg/pine	850–1400	sp-oc	oc-nv	ja-dc	topotype

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Carex filicina</i> Nees	h	pe	3	gro	wet areas in egf	950–1400	jn–sp	ag–nv	ja–dc	open places
<i>Carex horsfieldii</i> Boott	h	pe	3	gro	egf eg/pine	1450–1650	jl–sp	oc–nv	ja–dc	syn. = <i>Carex plagiotoma</i> Nelm.
<i>Carex indica</i> L. var. <i>indica</i>	h	pe	3	gro	mxf egf	800–1100	jl–ag	oc–nv	ja–dc	
<i>Carex indica</i> L. var. <i>microcarpa</i> T. Koy.	h	pe	2	gro	eg/pine	1100–1200	jl–ag	sp–nv	ja–dc	topotype
<i>Carex perakensis</i> Cl.	h	pe	3	gro	egf	1100–1500	jn–ag	sp–nv	ja–dc	
<i>Carex phacota</i> Spreng.	h	pe	2	gro	ponds wet areas in egf	1000–1200	jn–ag	oc–nv	ja–dc	open places
<i>Carex speciosa</i> Kunth ssp. <i>speciosa</i>	h	pd	3	gro	bb/df mxf eg/pine	450–1300	jl–oc	oc–dc	ap–dc	
<i>Carex speciosa</i> Kunth ssp. <i>latifolia</i> T. Koy.	h	pe	2	gro	egf	1100–1250	jl–sp	oc–dc	ja–dc	topotype
<i>Carex tricephala</i> Boeck.	h	pd	3	gro	bb/df da	350–600	jl–sp	oc–dc	ap–dc	topotype of <i>Carex plesiocephala</i> Turr., thickets
<i>Cyperus brevifolius</i> (Rottb.) Hassk. var. <i>brevifolius</i>	h	pe	3	gro	da eg/pine	425–1525	ja–dc	ja–dc	ja–dc	syn. = <i>Kyllingia brevifolia</i> Rottb.
<i>Cyperus compactus</i> Retz.	h	a	3	gro	dof marsh da	350–525	jn–oc	jl–nv	my–dc	
<i>Cyperus compressus</i> L.	h	a	3	gro	sg cult	350–1500	my–dc	jn–ja	ap–ja	
<i>Cyperus corymbosus</i> Rottb.	h	a	3	gro	wet places in da	350–675	ja–dc	ja–dc	ja–dc	
<i>Cyperus cuspidatus</i> Kunth	h	a	3	gro	dof egf eg/pine	350–1200	jn–fb	ag–mr	my–mr	often a weed
<i>Cyperus cyperinus</i> (Retz.) Sur. var. <i>cyperinus</i>	h	ped	3	gro	wet places in da	350–500	my–nv	jn–dc	ja–dc	
<i>Cyperus cyperoides</i> (L.) O.K.	h	ped	3	gro, often a weed	dof mxf eg/pine	500–1650	my–nv	jn–dc	ja–dc	alternative name: <i>Courtoisina cyperoides</i> (L.) Sojak
<i>Cyperus difformis</i> L.	h	a	3	gro	moist/wet da & dof	350–500	my–dc	my–dc	ap–dc	often aquatic or amphibious
<i>Cyperus distans</i> L.f. var. <i>distans</i>	h	a	3	gro	da	350–400	ja–dc	ja–dc	ja–dc	open places, lawns
<i>Cyperus elatus</i> L.	h	pe	2	gro	wet places in da dof	450–720	ja–dc	ja–dc	ja–dc	
<i>Cyperus exaltatus</i> Retz.	h	pe	2	gro	moist areas in dof mxf egf	350–1400	ja–dc	ja–dc	ja–dc	
<i>Cyperus flavidus</i> Retz.	h	a	3	gro	dof	400–700	my–ag	jn–sp	my–nv	syns. = <i>Pycnerus flavidus</i> (Retz.) T. Koy., <i>Cyperus globosus</i> All.
<i>Cyperus haspan</i> L.	h	pe	4	gro	wet places in da	350–1250	ja–dc	ja–dc	ja–dc	often as “halpan”, including ssp. <i>juncoides</i> (Lmk.) Kuk.
<i>Cyperus imbricatus</i> Retz.	h	pe	4	gro	moist areas in da	350–550	ja–dc	ja–dc	ja–dc	
<i>Cyperus involucratus</i> Rottb.	h	pe	3	gro	moist areas in mxf egf	500–1175	ja–dc	ja–dc	ja–dc	syn. = <i>Cyperus flabelliformis</i> Rottb.
<i>Cyperus iria</i> L.	h	a, pe	4	gro	moist areas in da	350–850	ja–dc	ja–dc	ja–dc	
<i>Cyperus kylingia</i> Endl.	h	pe	3	gro	eg/pine da	350–1650	my–dc	my–dc	ja–dc	open places, often a weed. <i>Kyllingia nemoralis</i> (J. R. & G. Forst.) Dandy ex Hutch. & Dalz.

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cyperus laxus</i> Lmk. var. <i>laxus</i>	h	pe	3	gro wee	bb/df mx/da	350-800	jn-nv	jl-dc	ja-dc	syn. = <i>Cyperus diffusus</i> Vahl var. <i>diffusus</i>
<i>Cyperus leucocephalus</i> Retz.	h	pd	3	gro	dof	500-700	my-oc	jn-nv	ap-nv	
<i>Cyperus michelianus</i> (L.) Link ssp. <i>pygmaeus</i> (Rottb.) Asch. & Graebn.	h	a	3	gro wee	moist areas in da cult	350-600	jn-oc	jl-nv	my-dc	syn. = <i>Cyperus pygmaeus</i> Rottb.
<i>Cyperus niveus</i> Retz.	h	pd	3	gro	dof bb/df	500-600	my-oc	jn-nv	ap-nv	
<i>Cyperus nutans</i> Vahl var. <i>eleusinoides</i> (Kunth) Haines	h	pe	3	gro wee	wet places in da	350-550	ja-dc	ja-dc	ja-dc	open places
<i>Cyperus nutans</i> Vahl var. <i>nutans</i>	h	pe	4	gro aqu wee	wet places in da	350-1375	ja-dc	ja-dc	ja-dc	open places
<i>Cyperus pilosus</i> Vahl	h	a	3	gro wee	wet areas in da cult	350-1250	my-oc	my-oc	ap-nv	open places, mostly a weed
<i>Cyperus polystachyos</i> Rottb. var.	h	a	3	gro	moist areas in da	375-500	ja-dc	ja-dc	ja-dc	
<i>Cyperus pumilus</i> L. ssp. <i>pumilus</i>	h	a	3	gro wee	moist areas in da	350-600	ja-dc	ja-dc	ap-dc	syn. = <i>Pycneus pumilus</i> (L.) Nees ssp. <i>pumilus</i>
<i>Cyperus pumilus</i> L. ssp. <i>membranaceus</i> (Vahl) Kuk.	h	a	2	gro wee	wet areas in da cult	350-1300	my-oc	my-oc	ap-nv	syn. = <i>Pycneus pumilus</i> (L.) Nees ssp. <i>membranaceus</i> (Vahl) T. Koy.
<i>Cyperus rotundus</i> L. ssp. <i>rotundus</i>	h	ped	4	gro wee rhe	da	350-600	ja-dc	ja-dc	ja-dc	open places
<i>Cyperus sesquiflorus</i> (Torr.) Mattf.	h	pde	3	gro	dof eg/pine	500-1650	my-oc	jn-nv	ja-dc	often leafless fb-my, alternative name = <i>Kyllingia odorata</i> Vahl ssp. <i>cylindrica</i> (Nees) T. Koy.
<i>Cyperus sulcinus</i> Cl.	h	a	3	gro	dof	350-650	jl-oc	ag-nv	my-nv	syn. = <i>Pycneus sulcinus</i> (Cl.) Cl.
<i>Cyperus tenuiculmis</i> Boeck.	h	a	3	gro	dof mx/df egf	500-1150	my-oc	jn-nv	my-dc	
<i>Cyperus unioloides</i> R. Br.	h	a	3	gro	dof da	350-700	my-ag	jn-sp	my-oc	syn. = <i>Pycneus unioloides</i> (R. Br.) Urb.
<i>Eleocharis congesta</i> D. Don var. <i>congesta</i>	h	pe	1	aqu	ponds wet areas in egf eg/pine	1000-1400	mr-jn	ap-ag	ja-dc	
<i>Fimbristylis adenolepis</i> Kern	h	a	3	gro	eg/pine	1300-1685	jn-nv	jl-dc	my-dc	
<i>Fimbristylis aestivalis</i> (Retz.) Vahl var. <i>aestivalis</i>	h	pd	3	gro wee	da	350-500	my-dc	jn-dc	my-dc	disturbed wet areas
<i>Fimbristylis cinnamometorum</i> (Vahl) Kunth	h	a	3	gro	dof	400-800	my-nv	jn-dc	my-dc	
<i>Fimbristylis dichotoma</i> (L.) Vahl ssp. <i>dichotoma</i>	h	pe	4	wee gro	da bb/df mx/df	350-1650	ja-dc	ja-dc	ja-dc	
<i>Fimbristylis eragrostis</i> (Nees & Mey.) Hance	h	pd	3	gro	dof bb/df	500-850	ap-oc	my-nv	ap-dc	topotype of <i>Fimbristylis tortispica</i> Turr.
<i>Fimbristylis fimbristylodes</i> (F. Muell.) Druce	h	a	3	gro	wet areas in dof	350-550	jl-oc	ag-nv	my-nv	seasonally wet places
<i>Fimbristylis hookeriana</i> Boeck.	h	a	2	gro	streams in dof	350-650	jl-sp	ag-oc	my-nv	
<i>Fimbristylis intonsa</i> S.T. Blake	h	pd	3	gro	dof	500-850	ag-dc	sp-ja	jl-ja	
<i>Fimbristylis merrillii</i> Kern	h	a	2	gro	dof	450-650	ag-oc	sp-nv	my-nv	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Fimbristylis miliacea</i> (L.) Vahl	h	pe	3	gro wee	dof	350-650	my-oc	jn-nv	ja-dc	syn. = <i>Fimbristylis littoralis</i> Gaud. var. <i>littoralis</i>
<i>Fimbristylis nutans</i> (Retz.) Vahl	h	pd	3	gro	dof da cult	350-550	jl-sp	ag-oc	my-nv	wet fields
<i>Fimbristylis ovata</i> (Burm. f.) Kern	h	pd	3	gro	dof	500-800	ag-dc	sp-ja	jl-ja	
<i>Fimbristylis schoenoides</i> (Retz.) Vahl	h	a	2	gro	da dof	350-700	jl-sp	ag-oc	my-nv	seasonally moist places
<i>Fimbristylis straminea</i> Turr.	h	pd	3	gro	wet places in dof	350-850	jl-nv	ag-nv	my-dc	topotype
<i>Fimbristylis tetragona</i> R. Br.	h	pd	3	gro	dof streams	375-850	jl-dc	ag-ja	my-dc	
<i>Fimbristylis thomsonii</i> Boeck.	h	pd	3	gro	egf eg/pine	1200-1500	ap-jn	my-jl	ap-nv	
<i>Fimbristylis yunnanensis</i> Cl.	h	pd	2	gro	dof do/pine	400-900	jn-sp	jl-oc	my-dc	
<i>Fuirena ciliaris</i> (L.) Roxb.	h	a	3	gro	wet areas in dof	350-550	jl-dc	ag-ja	my-ja	
<i>Fuirena umbellata</i> Rothb.	h	pe	2	gro	bb/df	900-1350	ja-dc	ja-dc	ja-dc	
<i>Lipocarpa chinensis</i> (Osb.) Kern	h	pde	3	gro	in egf	525-1100	jn-dc	jl-ja	ja-dc	annual in some dof
<i>Lipocarpa hemisphaerica</i> (Roth) Goetgh.	h	a	2	gro	wet areas in dof	400-850	jl-oc	ag-nv	my-nv	
<i>Lipocarpa pygmaea</i> Kern	h	a	3	gro wee	da cult	350-550	jl-oc	ag-nv	my-nv	
<i>Rhynchospora rubra</i> (Lour.) Mak.	h	a	3	gro	dof	400-925	jn-sp	jl-oc	my-nv	
<i>Rhynchospora rugosa</i> (Vahl) Gale ssp. <i>brownii</i> (Roem. & Schult.) T. Koy.	h	pe	2	gro	ponds wet areas in dof	600-900	my-sp	jn-oc	ja-dc	
<i>Scirpus grossus</i> L. f.	h	pe	3	aqu gro	ponds wet areas in dof	350-450	jn-sp	jn-sp	ja-dc	syn. = <i>Actinoscirpus grossus</i> (L. f.) Goetgh.
<i>Scirpus juncoides</i> Roxb. var. <i>juncoides</i>	h	pe	3	gro	dof bb/df	350-750	jn-fb	jl-mr	ja-dc	wet areas, alternative name = <i>Schoenoplectus juncoides</i> (Roxb.) Palla
<i>Scirpus mucronatus</i> L. ssp. <i>mucronatus</i>	h	pe	3	aqu	ponds in egf	900-1300	ja-dc	ja-dc	ja-dc	syn. = <i>Schoenoplectus mucronatus</i> (L.) Palla
<i>Scirpus siamensis</i> (Cl.) Kern	h	a	2	gro	streams in dof	400-700	ag-oc	sp-nv	my-nv	syn. = <i>Ascolepis dispacoides</i> (Schumacher) J. Ray. ssp. <i>siamensis</i> (Cl.) J. Ray.
<i>Scirpus squarrosus</i> L.	h	a	2	gro wee	ponds wet areas in dof	350-350	ag-nv	sp-dc	my-dc	open places, often a weed. syn. = <i>Lipocarpa squarrosa</i> (L.) Goetgh.
<i>Scirpus subcapitatus</i> Thw. & Hk.	h	pe	2	gro	streams wet areas in egf	950-1250	jn-sp	jl-oc	ja-dc	syn. = <i>Trichophorum subcapitatum</i> (Thw. & Hk.) D. J. Simp.
<i>Scirpus ternatus</i> Reinw. ex Miq.	h	pe	3	gro	wet areas in egf	1400-1400	ap-oc	my-nv	ja-dc	
<i>Scleria bentharii</i> Cl.	h	pd	3	gro	dof	500-800	jl-oc	ag-nv	my-nv	
<i>Scleria ciliaris</i> Nees	h	pd	3	gro	da egf	350-1100	jl-dc	ag-ja	my-dc	open places
<i>Scleria kerrii</i> Turr.	h	pde	3	gro	dof	400-550	jl-nv	ag-nv	ja-dc	topotype, often leafless in mr-ap

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Scleria levis</i> Retz.	h	pd	4	gro	dof bb/df eg/pine	425-1350	jl-oc	ag-ja	my-ja	
<i>Scleria lithosperma</i> (L.) Sw. var. <i>lithosperma</i>	h	pd	3	gro	dof	375-850	jl-oc	ag-nv	ap-ja	syn. = <i>Scleria lithosperma</i> (L.) Sw. ssp. <i>lithosperma</i>
<i>Scleria mikawana</i> Mak.	h	a	2	gro	dof	400-900	ag-oc	sp-nv	my-nv	
<i>Scleria pergracilis</i> (Nees) Kunth	h	pd	3	gro	dof	500-750	jl-oc	ag-nv	my-nv	
<i>Scleria psilorrhiza</i> Cl.	h	pd	3	gro	dof	350-850	ag-oc	sp-nv	jn-nv	
<i>Scleria reticulata</i> (Holt.) Kern	h	pd	3	gro	eg/pine da bb/df streams	525-1550	jl-de	ag-ja	my-ja	basionym = <i>Diplacrum reticulatum</i> Holt.
<i>Scleria scrobiculata</i> Nees & Mey. ex Nees	h	pd	2	gro	dof	400-850	ag-oc	sp-nv	my-nv	
<i>Scleria terrestris</i> (L.) Fass.	h	pe	4	gro	bb/df mxf egf da in egf & eg/pine	400-1550	ja-de	ja-de	ja-de	
Gramineae										
<i>Acroceras tonkinense</i> (Bala.) C. E. Hubb.	h	a	3	gro	bb/df da	350-500	jn-oc	ag-nv	ap-de	thickets
<i>Alloteropsis cimicina</i> (L.) Stapf	h	a	3	gro	da bb/df	350-400	jl-nv	ag-nv	my-de	
<i>Alloteropsis semialata</i> (R. Br.) Hitch.	h	a	3	gro	dof eg/pine	450-1620	ap-jn	my-ag	my-de	
<i>Andropogon chinensis</i> (Nees) Merr.	h	pd	4	gro	dof bb/df	550-1350	nv-fb	de-mr	my-mr	
					dof/pine eg/pine					
<i>Apluda mutica</i> L.	h	pd	4	gro	da dof bb/df	350-950	nv-ja	de-fb	my-mr	
<i>Apocypis courtallumensis</i> (Steud.) Henr.	h	pd	3	gro	dof	450-900	sp-nv	oc-ja	my-fb	
<i>Aristida chinensis</i> Munro	h	pd	3	gro	dof da	350-700	oc-ja	nv-fb	my-fb	
<i>Aristida cumingiana</i> Trin. & Rupr.	h	pd	4	gro	dof	450-900	nv-ja	de-fb	my-fb	
<i>Arthraxon castratus</i> (Griff.) Nara. ex Bor	h	a	3	gro	egf eg/pine da sg	600-1500	oc-de	de-fb	my-de	often on rocks
<i>Arthraxon lancifolius</i> (Trin.) Hochr.	h	a	3	gro epl epi wee	dof bb/df mxf eg/pine	725-1685	oc-ja	nv-fb	my-de	often on rocks or in streams
<i>Arundinella bengalensis</i> (Spr.) Druce	h	pd	3	gro	dof bb/df mxf do/pine	600-950	oc-de	nv-ja	my-de	
<i>Arundinella nepalensis</i> Trin.	h	pd	3	gro	dof mxf	450-850	oc-fb	nv-mr	jn-mr	
<i>Arundinella setosa</i> Trin. var. <i>setosa</i>	h	pd	5	gro	dof eg/pine	450-1685	oc-ja	nv-fb	my-fb	
<i>Bothriochloa bladhii</i> (Retz.) S.T. Blake	h	a	3	gro wee	mxf	350-1200	oc-de	nv-ja	my-ja	
<i>Brachiaria ramosa</i> (L.) Stapf	h	a	3	gro	bb/df mxf streams	500-600	ap-sp	my-oc	my-de	
<i>Capillipedium assimile</i> (Steud.) A. Camus	h	pd	4	gro	dof streams	400-600	jn-nv	jl-de	my-ja	
<i>Capillipedium parviflorum</i> (R. Br.) Stapf	h	pd	3	gro	dof eg/pine da	800-1620	nv-ja	de-fb	my-fb	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cenchrus brownii</i> Roem. & Schult.	h	a	3	gro wee	da	350-400	oc-ja	nv-fb	ag-mr	
<i>Cenotheca lappacea</i> (L.) Desv. var. <i>lappacea</i>	h	a	2	gro	da egf	825-1500	nv-ja	dc-fb	jn-fb	thickets
<i>Chloris barbata</i> Sw.	h	a	3	gro wee	da	350-400	jl-nv	ag-ja	my-fb	
<i>Chloris virgata</i> Sw.	h	a	3	gro wee	da	800-1400	sp-dc	oc-ja	jn-fb	
<i>Chrysopogon aciculatus</i> (Retz.) Trin.	h	pe	3	gro wee	da	375-1400	jl-nv	ag-nv	ja-dc	thickets, lawns
<i>Chrysopogon zizanioides</i> (L.) Robery	h	pe	3	gro cul	da	900-1100	nv-dc	dc-ja	ja-dc	syn. = <i>Veriveria zizanioides</i> (L.) Nash ex Small, planted for soil erosion control
<i>Coix lacryma-jobi</i> L. var. <i>lacryma-jobi</i>	h	pe	2	gro	streams bb/df mxf wee cul	350-1100	oc-fb	nv-mr	ja-dc	often escaping cultivation
<i>Cynodon dactylon</i> (L.) Pers.	h	ape	3	gro wee	eg/pine da sg	350-1550	oc-ap	nv-my	ja-dc	
<i>Cynodactylon accrescens</i> (Trin.) Stapf	h	ped	4	gro wee	da eg/pine bb/df mxf egf	350-1650	ja-dc	ja-dc	ja-dc	thickets
<i>Cynodactylon oxyphyllum</i> (Steud.) Stapf	h	pe	3	gro	da bb/df mxf	350-1650	jn-nv	jl-dc	ja-dc	
<i>Dactyloctenium aegyptium</i> (L.) P. Beauv.	h	ped	4	gro wee	da sg	350-1100	ja-dc	ja-dc	ja-dc	thickets
<i>Dichanthium caricosum</i> (L.) A. Camus	h	a	3	gro	bb/df mxf	400-950	mr-ji	ap-ag	my-dc	thickets
<i>Dictyonis fastigata</i> (Sw.) Kunth	h	pd	3	gro	do bb/df	400-700	oc-dc	nv-ja	my-dc	
<i>Digitaria fibrosa</i> (Hack.) Stapf	h	a	3	gro	dof	500-850	my-oc	jn-nv	my-dc	
<i>Digitaria fuscens</i> (Presl) Henr.	h	a	3	gro	eg/pine	1500-1620	jl-nv	ag-nv	ap-ja	
<i>Digitaria longiflora</i> (Retz.) Pers.	h	a	2	gro wee	da	700-1100	jl-nv	ag-dc	my-dc	fields & thickets
<i>Digitaria setigera</i> Roth ex Roem. & Schult. var. <i>setigera</i>	h	pd	4	gro wee	da bb/df	350-1650	jn-dc	jl-ja	my-fb	thickets
<i>Digitaria siamensis</i> Henr.	h	a	3	gro	dof	500-700	jn-oc	jl-nv	my-nv	probably includes <i>Digitaria larsenii</i> Bor
<i>Digitaria ternata</i> (A. Rich.) Stapf ex Dyer	h	a	3	gro	dof	500-700	jl-oc	ag-nv	my-nv	
<i>Digitaria violascens</i> Link	h	a	3	gro	da sg	350-1575	ja-dc	ja-dc	my-dc	
<i>Echinochloa colona</i> (L.) Link	h	a	3	gro wee	aqu	350-500	jn-ja	jn-ja	my-ja	aquatic or amphibious
<i>Echinochloa crusgalli</i> (L.) P. Beauv. var. <i>crusgalli</i>	h	a	3	gro wee	aqu	350-700	ag-ap	ag-ap	jn-ap	aquatic or amphibious, often as <i>crus-galli</i>
<i>Eleusine indica</i> (L.) Gaertn.	h	ape	4	gro wee	da dof bb/df	350-1400	ja-dc	ja-dc	ja-dc	fields & thickets
<i>Elytrophorus spicatus</i> (Willd.) A. Camus	h	a	2	gro	da	350-725	oc-fb	nv-mr	ag-mr	
<i>Enteropogon dolichostachys</i> (Lag.) Keng ex Laza.	h	pd	3	gro	da, dof	350-400	oc-nv	nv-dc	(ap)	basinym = <i>Chloris dolichostachya</i> Lag.
<i>Eragrostis amabilis</i> (L.) Nees	h	a or pd	4	gro wee	da	350-1200	my-dc	jn-ja	ap-ja	syn. = <i>Eragrostis tenella</i> (L.) P. Beauv. ex Roem. & Schult.
<i>Eragrostis montana</i> Bala.	h	a	3	gro	dof bb/df	350-600	my-nv	jn-dc	my-ja	thickets, syn. = <i>Eragrostis malayana</i> Stapf

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Eragrostis nigra</i> Nees ex Steud.	h	a	3	gro wee	eg/pine da	350-1650	my-dc	jn-ja	my-dc	fields & thickets
<i>Eragrostis pilosa</i> (L.) P. Beauv.	h	a	3	gro wee	da	350-400	jl-dc	ag-ja	my-ja	
<i>Eragrostis poaeoides</i> P. Beauv.	h	a	3	gro	da in egf eg/pine	1300-1400	my-ag	jn-sp	ap-nv	
<i>Eragrostis unioides</i> (Retz.) Nees ex Steud.	h	pe	4	gro wee	da in dof bb/df	425-800	ag-ja	sp-fb	ap-fb	thickets
<i>Eulalia leschenaultiana</i> (Decne.) Ohwi	h	pd	2	gro	dof	400-600	sp-dc	oc-ja	jn-ja	
<i>Eulalia pallens</i> (Hack.) O.K.	h	pd	3	gro	dof do/pine	700-1200	nv-fb	ja-mr	jn-mr	
<i>Eulalia quadrinervis</i> (Hack.) O.K.	h	pd	3	gro	dof	600-900	nv-ja	ja-mr	my-dc	
<i>Eulalia siamensis</i> Bor	h	pd	4	gro	dof eg/pine do/pine	400-1685	oc-fb	nv-mr	jn-mr	
<i>Eulalia speciosa</i> (Deb.) O.K. var. <i>speciosa</i>	h	pd	3	gro	eg/pine	1450-1650	oc-mr	nv-ap	my-mr	
<i>Eulaliopsis binata</i> (Retz.) C. E. Hubb.	h	pd	3	gro	dof	350-550	mr-jn	ap-jl	fb-oc	
<i>Garnotia acutigluma</i> (Steud.) Ohwi	h	a	3	gro	mxg eg/pine often on rocks	650-1685	oc-ja	nv-fb	jn-fb	often on rocks. syn. = <i>Garnotia tenella</i> (Arm. ex Miq.) Jan.
<i>Garnotia patula</i> (Munro) Bth. var. <i>patula</i>	h	a	3	gro	dof bb/df	400-650	sp-dc	oc-ja	jn-ja	
<i>Hemarthria compressa</i> (L. f.) R. Br.	h	pd	3	gro	bb/df	350-500	jl-dc	ag-ja	my-fb	
<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. & Schult.	h	pd	5	gro wee	da dof bb/df	350-900	oc-ja	nv-fb	jn-fb	thickets
<i>Heteropogon triticeus</i> (R. Br.) Stapf	h	pd	3	gro	dof	450-600	oc-ja	nv-fb	jn-fb	
<i>Hyparrhenia rufa</i> (Nees) Stapf var. <i>siamensis</i> Clayton	h	pd	4	gro	da dof	450-900	oc-ja	nv-fb	jn-ja	topotype
<i>Imperata cylindrica</i> (L.) P. Beauv. var. <i>major</i> (Nees) C. E. Hubb. ex Hubb. & Vaugh.	h	pe	5	gro wee	da dof bb/df eg/pine	350-1685	ja-oc	fb-nv	ja-dc	fire-tolerant
<i>Ischaemum rugosum</i> Salisb. var. <i>rugosum</i>	h	a	3	gro	streams dof	375-500	jl-nv	ag-nv	my-dc	
<i>Leersia hexandra</i> Swz.	h	pe	3	gro aqu	wet places in mxg	375-500	oc-ja	nv-fb	ja-dc	
<i>Leptochloa chinensis</i> (L.) Nees	h	a	3	gro wee	moist/wet da	350-500	jn-ag	jn-ag	my-sp	often aquatic or amphibious
<i>Microstegium vagans</i> (Nees ex Steud.) A. Camus	h	pd	5	gro wee	da dof bb/df mxg eg/pine do/pine	500-1650	nv-fb	dc-mr	my-mr	
<i>Mnesithea granularis</i> (L.) Kon. & Sos.	h	a	3	gro	dof da	350-1350	ag-nv	sp-dc	my-dc	weed in da
<i>Mnesithea mallicoma</i> (Hance) A. Camus	h	pd	3	gro wee	dof bb/df mxg eg/pine do/pine	450-1475	ag-ja	sp-fb	my-ja	
<i>Mnesithea striata</i> (Nees ex Steud.) Kon. & Sos.	h	pd	3	gro wee	da dof bb/df mxg egf eg/pine do/pine	400-1650	sp-ja	oc-ja	jn-fb	
<i>Rotboellia cochinchinensis</i> (Lour.) Clay.	h	a	4	gro	da sg	350-700	sp-dc	oc-ja	my-ja	syns. = <i>Ophiuros exaltatus</i> (L. f.) O.K. and <i>Rotboellia exaltatus</i> L.
<i>Optismenus burmannii</i> (Retz.) P. Beauv.	h	a	2	gro wee	da	350-1500	oc-fb	dc-mr	jl-mr	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Opismenus compositus</i> (L.) P. Beauv.	h	a	3	gro	mx f egf	700-1500	oc-fb	nv-mr	my-mr	
<i>Oryza meyeriana</i> (Zoll. & Mor.) Baill. var. <i>granulata</i> (Watt) Duist.	h	pd	3	gro	bb/df	450-900	jn-sp	jl-oc	my-dc	
<i>Ottocloa nodosa</i> (Kunth) Dandy	h	pe	4	gro	da bb/df	350-600	ap-nv	my-dc	my-dc	thickets
<i>Panicum humile</i> Nees ex Steud.	h	a	3	gro	dof moist areas	500-700	ag-nv	sp-dc	my-dc	syn. = <i>Panicum walense</i> Mez
<i>Panicum maximum</i> Jacq.	h	pe	4	gro wee	da	350-1250	oc-mr	nv-my	ja-dc	thickets
<i>Panicum miliaceum</i> L.	h	a	3	gro wee	da	1100-1400	nv-dc	dc-ja	jl-ja	
<i>Panicum notatum</i> Retz.	h	pd	4	gro	da in bb/df mx f egf	350-1400	oc-mr	nv-ap	my-ap	thickets, disturbed places
<i>Panicum repens</i> L.	h	a	3	gro	mx f streams	500-650	my-oc	jn-nv	my-dc	wet areas
<i>Paspalum conjugatum</i> Berg.	h	pe	4	gro wee	eg/pine da	350-1650	jl-ap	ag-my	ja-dc	fields
<i>Paspalum orbiculare</i> Forst.	h	pd	4	gro wee	da	350-700	jn-ja	jl-fb	my-dc	fields
<i>Paspalum scrobiculatum</i> L. var. <i>bispicatum</i> Hack.	h	a	3	gro wee	bb/df da	600-1400	ag-dc	sp-ja	my-dc	often a weed
<i>Pennisetum pedicellatum</i> Trin.	h	pd	5	gro wee	da	350-1500	oc-dc	nv-ja	my-fb	
<i>Pennisetum polystachyon</i> (L.) Schult.	h	pd	4	gro	da sg	350-1500	oc-nv	dc-ja	jn-ja	
<i>Pennisetum purpureum</i> Schumacher.	h	a	3	gro	ponds da sg	350-1350	dc-fb	fb-ap	jn-fb	
<i>Perotis indica</i> (L.) O.K.	h	a	3	gro	dof bb/df	350-800	ag-nv	sp-dc	my-dc	
<i>Phragmites vallatoria</i> (Pluk. ex L.) Veldk.	h	pe	5	gro wee	eg/pine da streams	375-1550	nv-mr	dc-ap	ja-dc	thickets
<i>Poa annua</i> L.	h	a	2	gro	da eg/pine	1685-1685	sp-dc	oc-ja	my-dc	
<i>Pogonatherum panicum</i> (Lmk.) Hack.	h	pd	3	epl gro wee	dof	375-850	dc-fb	ja-mr	my-dc	often on rocks in streams
<i>Polyoca digitata</i> (L. f.) Druce	h	pd	3	gro	dof	350-850	sp-dc	oc-ja	my-ja	
<i>Polyris indica</i> (Hout.) Veldk.	h	a	4	gro	da	350-500	nv-fb	dc-fb	my-dc	
<i>Pseudochinolaena polystachya</i> (H. B. K.) Stapf	h	pe	3	gro	egf eg/pine	1075-1525	my-nv	jn-dc	ja-dc	
<i>Pseudopogonatherum contortum</i> (Brongn.) A. Camus	h	a	3	gro	dof	500-650	nv-ja	dc-fb	my-ja	
<i>Pseudopogonatherum irritans</i> (R. Br.) A. Camus	h	pd	3	gro	dof	500-900	nv-ja	dc-fb	my-fb	
<i>Rhynchelytrum repens</i> (Willd.) C. E. Hubb.	h	a	4	gro int nat wee	da	350-1400	my-dc	jn-ja	my-dc	
<i>Saccharum arundinaceum</i> Retz.	h	pe	3	gro	da	350-1550	nv-fb	dc-mr	ja-dc	thickets
<i>Saccharum fallax</i> Balan.	h	pe	3	gro	da dof bb/df mx f	600-900	nv-mr	dc-ap	ja-dc	thickets, syn. = <i>Narenga fallax</i> (Balan.) Bor
<i>Sacciolepis indica</i> (L.) A. Chase	h	a	3	gro wee	da streams eg/pine	350-1685	sp-ja	oc-fb	my-dc	
<i>Schizachyrium brevifolium</i> (Sw.) Nees	h	pd	3	gro	bb/df	500-700	oc-dc	my-ja	my-ja	often on rocks

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Schizanthium sanguineum</i> (Retz.) Alst.	h	pd	3	gro	dof	450-900	oc-ja	nv-fb	my-fb	
<i>Setaria nervosa</i> (Rott.) Stapf	h	pd	4	gro	dof	450-600	sp-dc	oc-ja	my-ja	
<i>Setaria flavida</i> (Retz.) Veldk.	h	pd	3	gro	da bb/df	350-550	in-sp	jl-nv	my-dc	syn. = <i>Paspalidium flavidum</i> (Retz.) A. Camus
<i>Setaria palmifolia</i> (Koen.) Stapf var. <i>palmifolia</i>	h	pe	3	gro	eg/pine da sg	550-1685	sp-dc	oc-ja	ja-dc	
<i>Setaria parviflora</i> (Poir.) Kerg.	h	a	3	gro wee	da dof bb/df eg/pine	400-1650	in-nv	jl-dc	ap-dc	syn. = <i>Setaria pallide-fusca</i> (Schum.) Stapf & C. E. Hubb.
<i>Setaria sphacelata</i> (Schumach.) Stapf & C. E. Hubb. ex Moss ex Stapf & C. E. Hubb. var. <i>anceps</i> (Stapf & C. E. Hubb.) Veldk.	h	pe	2	gro wee int nat	da, fields	1300-1350	my-ag	my-ag	ja-dc	agricultural areas
<i>Setaria verticillata</i> (L.) P. Beauv.	h	a	3	gro wee	da sg	350-1500	sp-dc	oc-ja	my-fb	
<i>Sorghum nitidum</i> (Vahl) Pers.	h	pd	3	gro wee	da	350-600	nv-ja	dc-fb	my-fb	
<i>Sporobolus diander</i> (Retz.) P. Beauv.	h	ped	4	gro wee	da	350-1685	ag-nv	sp-ja	ja-dc	thickets, deciduous below 650 m
<i>Sporobolus indicus</i> (L.) R. Br. var. <i>flaccidus</i> (R. & S.) Veldk.	h	a	3	gro	da	550-1620	sp-ja	oc-fb	my-fb	thickets
<i>Sporobolus tetragonus</i> Bor	h	a	3	gro	dof	450-600	sp-nv	oc-dc	my-dc	
<i>Themeda arguens</i> (L.) Hack.	h	pd	5	gro	dof da sg	400-700	nv-fb	dc-mr	my-dc	
<i>Themeda arundinacea</i> (Roxb.) Ridl.	h	pe	3	gro	da sg in egf eg/pine	1100-1400	nv-dc	dc-ja	ja-dc	
<i>Themeda triandra</i> Forsk.	h	pd	5	gro	da dof bb/df eg/pine	350-1650	sp-ap	oc-my	my-dc	
<i>Thysanolaena latifolia</i> (Roxb. ex Horn.) Honda	h	pe	5	gro wee	da sg	350-1685	dc-mr	ja-ap	ja-dc	thickets
<i>Tripogon trifidus</i> Munro ex Stapf	h	pd	2	gro wee	rocks in eg/pine	1450-1450	ag-nv	sp-dc	my-dc	on cliffs
<i>Urochloa distachya</i> (L.) T. Q. Nguyen	h	a	3	gro wee	da cult	350-1000	sp-dc	nv-ja	in-ja	syn. = <i>Brachiaria distachya</i> (L.) Stapf
<i>Urochloa panicoides</i> P. Beauv. var. <i>pubescens</i> (Kunth) Bor	h	a	3	gro wee	da	350-400	jl-nv	ag-nv	my-dc	thickets
Gramineae, Bambusoideae										
<i>Ampelocalamus patellaris</i> (Gamb. emend. Stapf) Stapf.	h	pe	3	gro	da in egf	1025-1600	dc-ja (my)	ja-fb	ja-dc	syn. = <i>Dendrocalamus patellaris</i> Gamb.
<i>Bambusa bambos</i> (L.) Voss. ex Vilms.	h	pde	3	gro cul	da bb/df	375-500	fb-mr	mr-ap	ap-ja	often cultivated, often leafless February-March
<i>Bambusa burmanica</i> Griff.	h	pe	3	gro	mxl egf	850-1400	?	?	ja-dc	
<i>Bambusa griffithiana</i> Munro	h	pe	2	gro	streams in bb/df	700-900	nv	dc	my-fb	
<i>Bambusa membranacea</i> (Munro) Stapf. & Xia	h	pe	5	gro	bb/df	500-950	ja-fb	mr-jn	ap-fb	basinonym = <i>Dendrocalamus membranaceus</i> Munro
<i>Bambusa pallida</i> Munro	h	pd	3	gro	bb/df da in egf	450-1250	dc-ja	ja-fb	my-fb	evergreen in egf
<i>Bambusa tulda</i> Roxb.	h	pd	5	gro	bb/df mxl	550-950	ja-sp	fb-oc	in-fb	
<i>Bambusa vulgaris</i> Schrad. ex Wend. var. <i>striata</i> (Lodd. ex Penny) Gamb.	h	pe	3	gro cul	da	350-1050	dc-ja	ja-fb	ja-dc	open areas, ornamental
<i>Bambusa vulgaris</i> Schrad. ex Wend. var. <i>vulgaris</i>	h	pe	3	gro	egf eg/pine	1400-1500	dc-ja	ja-fb	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cephalostachyum pergracile</i> Munro	h	pe	2	gro	bb/df	800-900	ja-fb	mr-ap	ja-dc	
<i>Dendrocalamus giganteus</i> (Wall.) Munro	h	pe	2	gro	egf	1050-1050	oc-nv	nv-dc	ja-dc	
<i>Dendrocalamus nudus</i> Pilg.	h	pd	5	gro	dof bb/df	400-950	jl-ag	ag-sp	ap-fb	topotype
<i>Dinorchloa maclellandii</i> (Munro) Kurz	h	pe	3	gro	bb/df eg/pine eg/bb	900-1450	oc-nv	fb-mr	ja-dc	
<i>Gigantochloa albo-ciliata</i> (Munro) Kurz	h	pd	3	gro	bb/df	600-825	dc-ap	ja-my	my-ap	
<i>Gigantochloa apus</i> (Schult.) Kurz	h	pe	2	gro	eg/pine	975-975	sp-oc	oc-nv	ja-dc	
<i>Teinostachyum dullooia</i> Gamb.	h	pe	2	gro	egf	1075-1075	nv-dc	mr	ja-dc	alternative name: <i>Neohouzeana dullooia</i> (Gamb.) A. Camus
<i>Thyrostachys oliveri</i> Gamb.	h	pe	3	gro cul	egf	1400-1610	ja-fb	fb-mr	ja-dc	
Gymnospermae										
Cycadaceae										
<i>Epicyas tonkinensis</i> (L. Lind. & Rod.) de Laub.	l	pe	3	gro	mx f eg/pine	700-1300	fb-jl	mr-jl	ja-dc	topotype of <i>Cycas micholitzii</i> Dyer var. <i>simplicipinna</i> Smit., syn. = <i>Cycas simplicipinna</i> (Smit.) K. D. Hill
Podocarpaceae										
<i>Podocarpus nerifolius</i> D. Don	t	pe	1	gro	egf	1050-1400	ja-mr	mr-jn (ag)	ja-dc	
Pinaceae										
<i>Pinus kesiya</i> Roy. ex Gord.	t	pe	3	gro	eg/pine	950-1685	ja-mr	nv-ja	ja-dc	also commonly planted, formerly much more common
<i>Pinus merkusii</i> Jungh. & De Vriese	t	pe	1	gro	eg/pine	1200-1200	ja-mr	nv-ja	ja-dc	commonly planted
Cephalotaxaceae										
<i>Cephalotaxus griffithii</i> Hk. f.	t	pe	1	gro	egf	1400-1550	mr-ap	sp-oc	ja-dc	
Cupressaceae										
<i>Cupressus torulosa</i> D. Don	t	pe	3	gro int	eg/pine	1600-1685	mr-my	dc-mr	ja-dc	planted for watershed conservation
Gnetaceae										
<i>Gnetum leptostachyum</i> Bl.	wc	pe	3	gro	mx f eg/pine	450-1665	ja-ap	jn-ag	ja-dc	
<i>Gnetum montanum</i> Mg.	wc	pe	3	gro	mx f egf	450-1350	ap-my	jl-sp	ja-dc	
Pteridophyta										
Psilotaceae										
<i>Psilotum nudum</i> (L.) Beauv.	h	pd	1	epi epl	streams in dof bb/df	350-500	jn-sp	jn-sp	my-dc	
Lycopodiaceae										
<i>Lycopodium cernuum</i> L.	h	pe	3	gro	bb/df mx f egf	550-1300	ja-dc	ja-dc	ja-dc	open places
<i>Lycopodium squarrosum</i> Forst.	h	pe	1	epi	eg/pine	1500-1525	jn-nv	jn-nv	ja-dc	
Selaginellaceae										
<i>Selaginella argentea</i> (Wall. ex Hk. & Grev.) Spring	h	a	3	gro, epl	da in bb/df, egf	500-1000	jl-oc	jl-oc	my-nv	
<i>Selaginella delicatula</i> (Desv.) Alst.	h	a	3	gro	bb/df mx f da in egf	350-600	ag-nv	ag-nv	jn-dc	
<i>Selaginella helferi</i> Warb.	h (v)	pe	3	gro	streams in bb/df mx f egf	600-1400	ja-dc	ja-dc	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Selaginella involvens</i> (Sw.) Spring	h	a	3	gro epi	bb/df mx	500-875	jn-fb	jl-mr	ap-fb	
<i>Selaginella kurzii</i> Bak.	h	a	3	epl gro	bb/df mx eg/pine often on rocks and cliffs	550-1400	ag-nv	ag-nv	my-dc	often on rocks and cliffs, often along streams
<i>Selaginella minutifolia</i> Spring	h	a	3	gro	rocks streams in bb/df mx	600-1000	oc-dc	oc-dc	jn-ja	
<i>Selaginella ostenfeldii</i> Hier.	h	pd	4	gro	dof bb/df	450-850	jn-oc	jn-oc	ap-dc	
<i>Selaginella pennata</i> (D. Don) Spring	h	a	3	gro	bb/df	550-975	ag-nv	ag-nv	my-nv	often on soil embankments
<i>Selaginella repanda</i> (Desv.) Spring	h	a	3	gro	dof bb/df eg/bb da in egf	525-1000	jl-oc	jl-oc	my-nv	often on soil embankments, sometimes a weed
<i>Selaginella roxburghii</i> (Hk. & Grev.) Spring var. <i>roxburghii</i>	h	a	3	gro epl	eg/pine	1200-1400	sp-dc	sp-dc	my-ja	on cliffs
Equisetaceae <i>Equisetum debile</i> Roxb. ex Vauch.	h	pe	3	gro	streams bb/df mx egf	400-1350	nv-dc	nv-dc	ja-dc	
Ophioglossaceae <i>Ophioglossum petiolatum</i> Hk.	h	pd	2	gro	dof bb/df	500-925	jn-oc	jn-oc	my-dc	
Marattiaceae <i>Angiopteris evecta</i> (Forst.) Hoffm.	h	pe	3	gro	streams mx egf	700-1400	ja-dc	ja-dc	ja-dc	
Gleicheniaceae <i>Dicranopteris linearis</i> (Burm. f.) Underw. var. <i>linearis</i>	h	ped	4	gro	da	400-1620	my-ja	my-ja	ja-dc	thickets, often deciduous below 600 m fb-my
<i>Dicranopteris splendida</i> (Hand.-Maz.) Tag.	h	pe	3	gro	egf eg/pine	1000-1600	nv-ja	nv-ja	ja-dc	
Schizaeaceae <i>Lygodium flexuosum</i> (L.) Sw.	v	pd	4	gro	dof bb/df mx	350-1250	mr-oc	mr-oc	mr-ja	
<i>Lygodium giganteum</i> Tag. & K. Iw.	v	ped	3	gro	dof bb/df	450-700	jl-oc	jl-oc	mr-nv	
<i>Lygodium japonicum</i> (Thunb.) Sw.	v	pd	3	gro	dof	425-850	jl-oc	jl-oc	mr-nv	
<i>Lygodium polystachyum</i> Wall. ex Moore	v	pd	3	gro	bb/df mx	600-900	ap-sp	ap-sp	mr-dc	
Hymenophyllaceae <i>Crepidomanes lateolatum</i> (v. d. Bos.) Copel.	h	pd	2	epl epi	rock egf	1075-1400	sp-nv	sp-nv	my-dc	
<i>Hymenophyllum exsertum</i> Wall. ex Hk.	h	pe	2	epl	egf eg/pine	1075-1650	my-sp	ja-sp	ja-dc	syn. = <i>Mecodium exsertum</i> (Wall. ex Hk.) Copel., fronds shriveling ja-ap
Cyatheaceae <i>Cyathea chinensis</i> Copel.	t	pe	1	gro	streams egf	1350-1400	ja-dc	ja-dc	ja-dc	
<i>Cyathea gigantea</i> (Wall. ex Hk.) Holtt.	h (l)	pe	3	gro	streams mx	650-950	ap-sp	ap-sp	ja-dc	
<i>Cyathea podophylla</i> (Hk.) Copel.	l (h)	pe	2	gro	streams mx	950-1075	jl-dc	jl-dc	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
Deunstiaediaceae										
<i>Hypolepis punctata</i> (Thunb.) Mett. ex Kuhn	h	pe	3	gro	streams in dof bb/df	350-750	ja-dc	ja-dc	ja-dc	
<i>Microlepia platyphylla</i> (D. Don) J. Sm.	h	pe	3	gro	egf eg/pine	1300-1550	sp-dc	sp-dc	ja-dc	
<i>Microlepia puberula</i> v. A. v. Ros.	h	pe	2	gro	mx	700-900	sp-fb	sp-fb	ja-dc	
<i>Microlepia spelunca</i> (L.) Moore	h	pe	4	gro	mx	550-1350	ja-dc	ja-dc	ja-dc	
<i>Microlepia strigosa</i> (Thunb.) Presl	h	pe	3	gro	mx	650-900	jl-dc	jl-dc	ja-dc	
<i>Pteridium aquilinum</i> (L.) Kuhn ssp. <i>aquilinum</i> var. <i>wightianum</i> (Ag.) Try.	h	pe	5	gro	da mx	625-1685	ap-jn	ap-jn	ja-dc	open areas, fire-tolerant
Lindsaeaaceae										
<i>Lindsaea chienii</i> Ching	h	pe	3	gro	mx	950-950	sp-nv	sp-nv	ja-dc	
<i>Lindsaea ensifolia</i> Sw. ssp. <i>ensifolia</i>	h	pe	3	gro	dof bb/df	500-850	ja-dc	ja-dc	ja-dc	
<i>Sphenomeris chinensis</i> (L.) Maxon var. <i>chinensis</i>	h	pe	2	gro	da mx	700-1350	ja-dc	ja-dc	ja-dc	open areas
Davalliaceae										
<i>Araioestegia pulchra</i> (D. Don) Copel.	h	pd	3	epl	rocks streams mx	850-1620	my-oc	my-dc	ap-dc	
<i>Davallia trichomanoides</i> Bl. var. <i>lorrainii</i> (Hance) Holtt.	h	pd	3	epl	rocks streams mx	750-1350	jn-oc	jn-oc	ap-dc	
<i>Davallodes membranulosum</i> (Hk.) Copel.	h	pd	3	epl	eg	1000-1000	jn-oc	jn-oc	ap-dc	
<i>Gymnogrammitis dareiformis</i> (Hk.) Ching ex Tard. & C. Chr.	h	pd	3	epl	rocks in eg/pine	1600-1685	jl-nv	jl-nv	ap-dc	syn. = <i>Araioestegia dareiformis</i> (Hk.) Copel.
<i>Leucostegia immersa</i> Presl	h	pd	3	epl	rocks in streams mx	850-1685	jl-nv	jl-nv	ap-dc	infrequently in soil
<i>Pachyleuria repens</i> (L. f.) M. Kato	h	pe	3	epl	mx	775-1620	ja-dc	ja-dc	ja-dc	epiphyte, less often on soil embankments
Oleandraceae										
<i>Nephrolepis biserrata</i> (Sw.) Schott	h	pd	3	gro	rocks bb/df streams	500-700	jl-dc	jl-dc	my-dc	
<i>Nephrolepis cordifolia</i> (L.) Presl	h	pd	3	epl	rocks bb/df mx	800-950	sp-dc	sp-dc	my-dc	
<i>Nephrolepis delicatula</i> (Dcne.) Pichi-Ser.	h	pd	3	epl	rocks bb/df	800-1450	jn-dc	jn-dc	my-dc	
<i>Oleandra undulata</i> (Willd.) Ching	h	pd	3	gro	rocks mx	500-1650	jn-oc	jn-oc	my-dc	
Parkeriaceae										
<i>Adiantum edgeworthii</i> Hk.	h	pd	2	epl	rocks in dof eg/pine	650-1610	jn-nv	jl-dc	my-dc	
<i>Adiantum erylliae</i> C. Chr. & Tard.	h	pd	2	epl	rocks dof	400-600	jl-nv	jl-nv	my-dc	
<i>Adiantum philippense</i> L.	h	pd	3	gro	dof bb/df	375-1200	jl-oc	jl-oc	ap-dc	
<i>Adiantum zollingeri</i> Mett. ex Kuhn	h	pd	4	gro	rocks dof	375-850	jn-oc	jn-oc	ap-dc	
<i>Ceratopteris thalictroides</i> (L.) Brongn.	h	a	2	gro	moist areas in da	375-750	jl-nv	jl-nv	ap-dc	moist areas, in mud, often aquatic

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Cheilanthes belangeri</i> (Bory) C. Chr.	h	pd	3	gro epl	rocks bb/df mxf moist places	425–800	ag-nv	ag-nv	jn-dc	
<i>Cheilanthes pseudofarinosa</i> (Ching & S. K. Wu) K. Iw.	h	pd	3	gro epl	rocks dof bb/df mxf egf eg/pine	675–1675	ag-dc	ag-nv	jn-dc	
<i>Cheilanthes tenuifolia</i> (Burm. f.) Sw.	h	pd	3	gro epl	rocks dof bb/df mxf	600–800	ag-nv	ag-nv	jn-dc	
<i>Coniogramme fraxinea</i> (D. Don)	h	pe	2	gro epl	rocks streams in egf	1450–1600	oc-mr	oc-mr	ja-dc	
<i>Diels var. serrulata</i> (Bl.) Hieron.	h	pd	3	gro epl	rocks streams	350–850	jn-nv	jn-nv	my-dc	
<i>Hemionitis arifolia</i> (Burm. f.) Moore	h	pe	2	gro epl	rocks streams in bb/df	375–1350	ja-dc	ja-dc	ja-dc	
<i>Pityrogramma calomelanos</i> (L.) Link	h	pe	2	gro epl						
Vitaceae										
<i>Antrophyum callifolium</i> Bl.	h	pe	2	epl	rocks in egf eg/pine	1400–1500	ag-nv	ag-nv	ja-dc	
<i>Antrophyum parvulum</i> Bl.	h	pe	2	epl	rocks in egf	950–1300	my-dc	my-dc	ja-dc	
<i>Antrophyum winitii</i> Tag. & K. Iw.	h	pe	3	epl	mxf egf	750–1050	jn-nv	jn-nv	ja-dc	
<i>Vitaria flexuosa</i> Fee	h	pe	3	epl epl	eg/pine	1550–1650	jn-dc	jn-dc	ja-dc	
<i>Vitaria sikimensis</i> Kuhn	h	pe	3	epl	mxf egf	750–1050	jn-nv	jn-nv	ja-dc	
Pteridaceae										
<i>Pteris asperula</i> J. Sm. ex Hieron.	h	pe	2	gro	egf	950–1400	ja-dc	ja-dc	ja-dc	
<i>Pteris baurita</i> L.	h	pe	3	gro	mxf egf	650–1350	jn-nv	jn-nv	ja-dc	
<i>Pteris cretica</i> L.	h	pe	2	gro	egf	950–1000	my-nv	my-nv	ja-dc	
<i>Pteris decrescens</i> Christ	h	pe	3	epl gro	dof bb/df mxf egf	500–1100	ap-nv	ap-nv	ja-dc	
<i>Pteris ensiformis</i> Burm. f.	h	pe	2	gro	egf eg/pine	1000–1550	ag-mr	ag-mr	ja-dc	
<i>Pteris heteromorpha</i> Fee	h	pe	3	gro	bb/df mxf	500–850	ja-dc	ja-dc	ja-dc	
<i>Pteris longipes</i> D. Don	h	pe	2	gro	egf	1000–1400	ja-dc	ja-dc	ja-dc	
<i>Pteris venusta</i> Kunze	h	pe	3	gro	bb/df mxf	500–950	ja-dc	ja-dc	ja-dc	
<i>Pteris vittata</i> L.	h	pe	2	gro epl epl	egf eg/pine	1600–1620	oc-mr	oc-mr	ja-dc	
<i>Pteris wallichiana</i> Ag.	h	pe	2	gro	streams egf eg/pine	1150–1575	sp-ja	sp-ja	ja-dc	
Aspleniaceae										
<i>Asplenium apogonum</i> Mur. & Hat.	h	pe	3	epl epl	rocks streams in mxf egf	550–1200	jl-fb	jl-fb	ja-dc	
<i>Asplenium bilabiatum</i> Mur. & Cheng	h	pe	3	gro	mxf streams	600–900	jn-oc	jn-oc	ja-dc	
<i>Asplenium cheilosorum</i> O.K. ex Mett.	h	pe	2	epl gro	egf	1250–1650	nv-ap	nv-ap	ja-dc	
<i>Asplenium crinicaule</i> Hance	h	pe	3	epl epl	rocks in mxf eg/pine gro	950–1400	jl-nv	jl-nv	ja-dc	
<i>Asplenium ensiforme</i> Wall. ex Hk. & Grev.	h	pe	3	epl epl	rocks egf streams	900–900	ja-mr	ja-mr	ja-dc	
<i>Asplenium excisum</i> Presl	h	ped	2	gro epl	mxf	550–550	jn-oc	jn-oc	ja-dc	evergreen in perennially moist or wet places
<i>Asplenium macrophyllum</i> Sw.	h	pe	2	epl	rocks egf streams	950–1200	my-nv	my-nv	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Asplenium nidus</i> L. var. <i>nidus</i>	h	pe	2	epl epl	rocks streams egf	1050-1500	oc-ja	oc-ja	ja-dc	
<i>Asplenium obscurum</i> Bl.	h	pe	2	epl epl	rock mxf egf streams	550-1500	ja-dc	ja-dc	ja-dc	
<i>Asplenium rockii</i> C. Chr.	h	pe	2	epl	rocks in egf	1050-1050	ag-nv	ag-nv	ja-dc	topotype
<i>Asplenium yoshinagae</i> Mak.	h	pe	3	epl epl	rocks egf bb/df mxf	1075-1425	jn-oc	jn-oc	ja-dc	
Blechnaceae										
<i>Blechnum orientale</i> L.	h	pe	3	epl gro	streams mxf egf	950-1400	ap-nv	ap-nv	ja-dc	
<i>Brainea insignis</i> (Hk.) J. Sm.	h	pe	2	gro	mxf egf eg/pine	750-1650	ja-dc	ja-dc	ja-dc	
Lomatopsideaceae										
<i>Bolbitis appendiculata</i> (Willd.) K. Iwats.	h	pe	3	gro epl	rocks in streams mxf egf	600-1300	sp-ja	sp-ja	ja-dc	syn. = <i>Egenolfia appendiculata</i> (Willd.) J. Sm.
<i>Bolbitis heteroclita</i> (Presl) Ching ex C. Chr.	h	pe	3	gro epl	rocks streams mxf	975-1050	ap-ji	ap-ji	ja-dc	often creeping on rocks, tree trunks
<i>Bolbitis hookeriana</i> K. Iw.	h	pe	3	gro	rocks streams mxf	800-950	sp-nv	sp-nv	ja-dc	
<i>Bolbitis scalpurata</i> (Fee) Ching	h	pe	2	epl	rocks in streams in mxf	650-800	nv-ap	nv-ap	ja-dc	
<i>Bolbitis sinensis</i> (Bak.) K. Iw. var. <i>sinensis</i>	h	pe	3	epl gro	rocks streams mxf egf	800-1200	jn-nv	jn-nv	ja-dc	syn. = <i>Egenolfia sinensis</i> (Bak.) Maxon var. <i>sinensis</i>
<i>Bolbitis virens</i> (Wall. ex Hk. & Grev.) Schott var. <i>virens</i>	h	pe	3	gro epl	rocks streams mxf egf	550-1350	ja-dc	ja-dc	ja-dc	
<i>Elaphoglossum marginatum</i> (Fee) Moore	h	pe	2	epl	eg/pine	1500-1650	jn-nv	jn-nv	ja-dc	
<i>Elaphoglossum yoshinagae</i> (Yac.) Mak.	h	pe	3	epl	eg/pine	1550-1620	ji-oc	ji-oc	ja-dc	
Dryopteridaceae										
<i>Arachniodes henryi</i> (Christ) Ching	h	pe	3	gro	egf	1100-1300	my-oc	my-oc	ja-dc	
<i>Dialcalpe aspidioides</i> Bl.	h	pe	3	gro	eg/pine	1500-1650	my-oc	my-oc	ja-dc	
<i>Didymochlaena truncatula</i> (Sw.) J. Sm.	h	pe	2	gro	egf	1450-1450	oc-fb	oc-fb	ja-dc	
<i>Dryopteris cochleata</i> (D. Don) C. Chr.	h	pd	3	gro	dof bb/df eg/pine	500-1350	ji-dc	ji-dc	my-dc	
<i>Dryopteris hirtipes</i> (Bl.) O.K.	h	pe	3	gro	streams egf	1150-1250	oc-mr	oc-mr	ja-dc	
<i>Dryopteris integriloba</i> C. Chr.	h	pe	3	gro	streams mxf	850-950	sp-dc	sp-dc	ja-dc	
<i>Dryopteris neoassamensis</i> Ching	h	pe	4	gro	mxf egf eg/pine	700-1650	ji-dc	ji-dc	ja-dc	
<i>Dryopteris pseudosparsa</i> Ching	h	pe	2	gro	mxf egf	700-1300	ja-dc	ja-dc	ja-dc	
<i>Dryopteris irregularis</i> (Presl) Holtt.	h	pe	2	gro	egf	1100-1550	oc-ap	oc-ap	ja-dc	
<i>Polystichum attenuatum</i> Tag. & K. Iw.	h	pe	2	gro	egf eg/pine	1200-1650	ja-dc	ja-dc	ja-dc	
<i>Polystichum biaristatum</i> (Bl.) Moore	h	pe	2	gro	egf eg/pine	1000-1450	ja-dc	ja-dc	ja-dc	
<i>Polystichum eximium</i> (Kuhn) C. Chr.	h	pe	3	gro	streams mxf egf	825-1100	ja-dc	ja-dc	ja-dc	
<i>Tectaria christii</i> Copel.	h	pe	3	gro	streams mxf egf	700-1325	jn-nv	(jn) ag-nv	ja-dc	
<i>Tectaria fauriei</i> Tag.	h	pe	2	gro	rocks in egf	1400-1475	ja-dc	ja-dc	ja-dc	on rocks in streams

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Tectaria fuscipes</i> (Wall. ex Bedd.) C. Chr.	h	pe	2	gro epl	bb/df mxf	700-800	dc-ap	dc-ap	ja-dc	
<i>Tectaria herpetocaulos</i> Holtt.	h	pe	3	gro	mxf egf	650-1125	jl-dc	jl-dc	ja-dc	
<i>Tectaria impressa</i> (Fee) Holtt.	h	pe	3	gro	mxf	550-850	jl-ap	jl-ap	ja-dc	syn. = <i>Tectaria variolosa</i> (Wall. ex Hk.) C. Chr.
Thelypteridaceae										
<i>Thelypteris arida</i> (D. Don) Mort.	h	pe	3	gro	streams dof bb/df	500-750	jl-nv	jl-nv	ja-dc	syn. = <i>Christella arida</i> (D. Don) Holtt.
<i>Thelypteris ciliata</i> (Wall. ex Bth.) Ching	h	pe	3	epl	streams mxf egf	700-1500	ja-dc	ja-dc	ja-dc	syn. = <i>Trigonospora ciliata</i> (Wall. ex Bth.) Holtt.
<i>Thelypteris confluens</i> (Thunb.) Mort.	h	pe	2	gro	egf	1400-1500	ja-dc	ja-dc	ja-dc	
<i>Thelypteris crinipes</i> (Hk.) K. Iw.	h	pe	3	gro	streams in mxf bb/df	600-800	ja-dc	ja-dc	ja-dc	syn. = <i>Christella crinipes</i> (Hk.) Holtt.
<i>Thelypteris cylindrothrix</i> (Rosenst.) K. Iw.	h	pe	3	gro	bb/df mxf egf	650-1300	jl-dc	jl-dc	ja-dc	syn. = <i>Christella cylindrothrix</i> (Rosenst.) Holtt.
<i>Thelypteris dentata</i> (Forssk.) St. John	h	pe	3	gro	bb/df streams da	375-450	jn-nv	jn-nv	ja-dc	syn. = <i>Christella dentata</i> (Forssk.) Bro. & Jer.
<i>Thelypteris hirtisora</i> (C. Chr.) K. Iw.	h	pe	3	gro	eg/pine	1125-1650	mr-jl	mr-jl	ja-dc	
<i>Thelypteris hispidula</i> (Decne.) Reed	h	pe	3	gro	egf	1100-1300	jn-nv	jn-nv	ja-dc	syn. = <i>Christella hispidula</i> (Decne.) Holtt.
<i>Thelypteris interrupta</i> (Willd.) K. Iw.	h	pe	2	gro	wet places in mxf egf marsh	350-1350	ag-dc	ag-nv	ja-dc	syn. = <i>Cyclosorus interruptus</i> (Willd.) H. Ito
<i>Thelypteris lakimpurensis</i> (Rosenst.) K. Iw.	h	pe	2	gro	streams in mxf egf	700-1000	nv-mr	nv-mr	ja-dc	
<i>Thelypteris nudata</i> (Roxb.) Mort.	h	pe	3	gro	streams mxf egf	600-1575	ja-dc	ja-dc	ja-dc	syn. = <i>Pronephrium nudatum</i> (Roxb.) Holtt.
<i>Thelypteris papilio</i> (Hope) K. Iw.	h	pe	2	gro	mxf streams	650-650	jl-nv	jl-nv	ja-dc	
<i>Thelypteris parasitica</i> (L.) Fosb.	s (h)	pe	4	gro	bb/df mxf da	500-850	my-mr	my-mr	ja-dc	syn. = <i>Christella parasitica</i> (L.) Lev.
<i>Thelypteris repens</i> (Hope) Ching	h	pe	2	gro	egf marsh	1350-1350	ag-dc	ag-nv	ja-dc	
<i>Thelypteris subelata</i> (Bak.) K. Iw.	h	pe	3	gro	mxf egf	700-1450	ja-dc	ja-dc	ja-dc	syn. = <i>Christella subelata</i> (Bak.) Holtt.
<i>Thelypteris terminans</i> (Hk.) Tag. & K. Iw.	h cr	pe	3	gro	streams egf	1025-1250	my-fb	my-fb	ja-dc	syn. = <i>Amphineuron terminans</i> (Hk.) Holtt.
<i>Thelypteris truncata</i> (Poir.) K. Iw.	h	pe	3	gro	streams mxf egf	675-1350	dc-my	dc-my	ja-dc	syn. = <i>Pneumatopteris truncata</i> (Poir.) K. Iw.
<i>Thelypteris xylodes</i> (Kunze) Ching	h	pe	2	gro	egf marsh	1350-1350	ag-dc	ag-nv	ja-dc	
Athyriaceae										
<i>Anisocampium cumingianum</i> Presl	h	pd	3	gro	bb/df mxf (streams) eg/bb	450-1100	jn-dc	jn-dc	my-dc	syn. = <i>Athyrium cumingianum</i> (Presl) Ching
<i>Athyrium anisopterum</i> Christ	h	pe	4	gro	do/pine eg/pine	1200-1680	jl-nv	jl-nv	ja-dc	fire-tolerant
<i>Athyrium dissitifolium</i> (Bak.) C. Chr.	h	pe	3	gro epl	mxf egf	600-1500	nv-my	nv-my	ja-dc	
<i>Cornopteris opaca</i> (D. Don) Tag.	h	pe	2	gro	rocks, streams egf	1350-1500	ja-dc	ja-dc	ja-dc	

Species	Habit	Pheno-logy	Abun-dance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Diplazium asperum</i> Bl.	h	pe	3	gro	streams mxf	550-800	sp-dc	sp-dc	ja-dc	
<i>Diplazium donianum</i> (Mett.) Tard.	h	pe	2	gro	mx	550-800	oc-fb	oc-fb	ja-dc	
<i>Diplazium esculentum</i> (Retz.) Sw.	h	pe	3	gro the	streams in bb/df mxf	350-725	ja-dc	ja-dc	ja-dc	open, moist/wet places
<i>Diplazium leptophyllum</i> Christ	h	pe	3	gro	egf streams	1050-1350	ja-dc	ja-dc	ja-dc	moist places
<i>Diplazium polypodioides</i> Bl.	h	pe	3	gro	streams in mxf egf	550-1500	sp-ja	sp-ja	ja-dc	
<i>Diplazium siamense</i> C. Chr.	h	pe	2	gro	egf	1050-1400	jl-dc	jl-dc	ja-dc	topotype, moist places
<i>Kunawatsukia cuspidata</i> (Bedd.) Pic.-Set.	h	pd	3	gro	da egf eg/pine streams eg/bb	1025-1550	my-oc	my-oc	my-dc	fire-tolerant
Polypodiaceae										
<i>Aglaomorpha coronans</i> (Wall. ex Mett.) Copel.	h	pe	2	epi epl	mx (streams) egf	700-1300	ap-dc	ap-dc	ja-dc	
<i>Arthromeris amplexifolia</i> (Christ) Ching	h	pd	3	epi	egf eg/pine	1100-1650	ag-nv	ag-nv	my-dc	
<i>Belvisia henryi</i> (Hieron. ex C. Chr.) Ray.	h	pe	2	epi epl	rocks streams mxf egf	725-1125	my-nv	my-nv	ja-dc	
<i>Crypsinus cruciformis</i> (Ching) Tag.	h	pd	3	epi epl	rocks streams dof bb/df mxf	650-1675	jn-dc	jn-dc	my-dc	
<i>Crypsinus griffithianus</i> (Hk.) Copel.	h	pd	2	epi gro	rocks in mxf	675-675	ag-dc	ag-nv	my-dc	
<i>Crypsinus oxylobus</i> (Wall. ex O.K.) Sledge	h	pd	3	epi epl	rocks eg/pine	1450-1650	ag-dc	ag-nv	my-dc	
<i>Crypsinus rhynchophyllus</i> (Hk.) Copel.	h	pd	2	epi epl	rocks eg/pine	1500-1685	mr-dc	mr-dc	my-dc	
<i>Drynaria bonii</i> C. Chr.	h	pd	3	epi less	rocks in bb/df often epi	425-600	my-dc	my-dc	my-dc	
<i>Drynaria fortunei</i> (O.K. ex Mett.) J. Sm.	h	pe	2	epi	egf	1025-1200	fb-ap	fb-ap	ja-dc	
<i>Drynaria propinqua</i> (Wall. ex Mett.) J. Sm. ex Bedd.	h	pd	3	epi, less often epl	eg/pine	1450-1685	ap-dc	ap-dc	jn-dc	
<i>Drynaria rigidula</i> (Sw.) Bedd.	h	pd	3	epi	dof bb/df	400-700	jn-nv	jn-nv	my-dc	
<i>Lepisorus bicolor</i> (Tak.) Ching	h cr	pe	3	epi	egf eg/pine	1125-1550	jn-dc	jn-dc	ja-dc	
<i>Lepisorus heterolepis</i> (Rosenst.) Ching	h	pe	2	epi	eg/pine	1500-1675	ap-dc	ap-dc	ja-dc	
<i>Lepisorus nudus</i> (Hk.) Ching	h cr	pe	3	epi epl	egf	1250-1550	ap-dc	ap-dc	ja-dc	
<i>Lepisorus scolopendrium</i> (Ham. ex D. Don) Tag.	h	pe	3	epi epl	rocks egf eg/pine	1075-1675	my-dc	my-dc	ja-dc	
<i>Lepisorus subconfluens</i> Ching	h	pe	3	epi	eg/pine	1600-1675	ap-dc	ap-dc	ja-dc	
<i>Leptochilus decurrens</i> Bl.	h	pe	3	epi gro	rocks streams mxf	325-1450	ja-dc	ja-dc	ja-dc	
<i>Leptochilus ellipticus</i> (Thunb.) Noot.	h	pd	2	gro	streams egf	1300-1550	fb-oc	fb-oc	ja-dc	syns. = <i>Colysis pentaphylla</i> (Bak.) Ching, <i>Colysis pothifolia</i> (D. Don) Presl
<i>Loxogramme chinensis</i> Ching	h	pe	2	epi epl	rocks eg/pine	1000-1400	ag-ja	ag-ja	ja-dc	

Species	Habit	Phenology	Abundance	Life mode	Habitat	Elevation (m)	Flower month	Fruit month	Leaf month	Notes
<i>Microsorium membranaceum</i> (D. Don) Ching	h	pd	3	epl epi	rocks mx f egf streams eg/pine	650–1685	jn–nv	jn–nv	my–dc	
<i>Platyserium wallichii</i> Hk.	h	pd	3	epl epl	rocks bb/df	450–950	sp–dc	sp–dc	my–dc	
<i>Polypodium amoenum</i> (J. Sm. ex Hk. & Grev.) Mett.	h	pd	2	epl epl	rocks eg/pine	1500–1685	my–sp	my–sp	my–dc	
<i>Polypodium argutum</i> (J. Sm. ex Hk. & Grev.) Hk.	h	pd	2	epl	eg/pine	1600–1620	ap–dc		jn–dc	
<i>Polypodium manniense</i> Christ	h	pe	2	epl	egf	1075–1400	ag–dc	ag–nv	ja–dc	
<i>Polypodium subauriculatum</i> Bl.	h	pd	2	epl epl	mx f	500–900	jn–nv	jn–nv	ap–dc	
<i>Pyrrosia adnascens</i> (Sw.) Ching	h cr	pe	3	epl epl	rocks dof bb/df mx f	400–900	ja–dc	ja–dc	ja–dc	
<i>Pyrrosia eberhardii</i> (Christ) Ching	h	pe	3	epl	eg/pine	1500–1685	ja–dc	ja–dc	ja–dc	
<i>Pyrrosia lanceolata</i> (L.) Far.	h	pe	3	epl epl	egf eg/pine	1150–1650	ja–dc	ja–dc	ja–dc	
<i>Pyrrosia mollis</i> (O.K.) Ching	h cr	pe	2	epl	egf	1300–1500	my–dc	my–dc	ja–dc	
<i>Pyrrosia porosa</i> (Wall. ex Presl) Hoven. var. <i>porosa</i>	h	pe	2	epl	mx f	750–950	ap–dc	ap–dc	ja–dc	
<i>Pyrrosia stigmosea</i> (Sw.) Ching	h	pe	3	epl epl	rocks bb/df mx f egf streams eg/pine	450–1450	ja–dc	ja–dc	ja–dc	
Marsileaceae										
<i>Marsilea crenata</i> Presl	h	a	3	gro aqu	da	350–750	fb–mr	fb–mr	my–dc	moist or wet fields
Salvinaceae										
<i>Salvinia cucullata</i> Roxb. ex Bory	h	pe	2	aqu	ponds da	350–500	ja–dc	ja–dc	ja–dc	open areas
Azollaceae										
<i>Azolla pinnata</i> R. Br.	h	pe	3	aqu	ponds da	350–1350	ja–dc	ja–dc	ja–dc	open areas

PART IV

Exploitation and Conservation

Stephen Elliott

THE CONSERVATION VALUE OF DOI SUTEP–PUI NATIONAL PARK

The diversity of forest types and vascular plant species described in this monograph signifies the high conservation value of Doi Sutep–Pui National Park. The park's historical importance for development of botanical sciences in Thailand and its importance, as a type locality, to taxonomy has also already been detailed.

In addition to botanical interest, however, the park is home to a diverse fauna. Animal species include at least 326 birds (Round, 1984), 500 butterflies (Pinratana, 1977–85), 300 moths (Banziger, 1988), 61 mammals (Mahidol University Conservation Data Center, 2000; Elliott *et al.*, 1989), 28 amphibians and 50 reptiles (Nabhitabhata, 1987); all in a national park which covers just 261 km². Many of these animals play crucial ecological roles in the reproductive ecology of plant species on Doi Sutep–Pui by carrying out pollination and seed dispersal. Animals also influence plant community dynamics by modifying the habitat to favour certain plant species or exclude others.

Doi Sutep–Pui is also important as a site for ecological studies, which are discovering how seasonally dry forest ecosystems regenerate (Hardwick *et al.*, 1997). This knowledge is being used to improve forest management and to restore forest to degraded sites (Elliott *et al.*, 1995; Forest Restoration Research Unit, 1998). With more than 600 tree species, suited to a wide range of soil and climate conditions, Doi Sutep–Pui could provide a valuable seed source for forest restoration projects throughout northern Thailand. It could become especially important as a seed source for some of the rarer tree species (Kopachon *et al.*, 1996).

Situated so close to a major urban area, the national park is also important for environmental education. It provides ideal opportunities for field excursions and acts as an outdoor laboratory for Chiang Mai's many schools and three universities (Elliott & Beaver, 1991).

In addition to its biological value, the park also has high cultural and religious significance. Doi Sutep–Pui is most famous as the location of the Buddhist temple, Wat Prataht, which was constructed on an eastern sub-peak of the mountain, at about 1050 m above sea level, in 1372 or 1373 A.D. and is believed to house a relic of the Lord Buddha. Doi Sutep's cultural history, however, stretches back much further than the 14th century. Lawa tribal people were settled on the mountain by at least the 7th century and probably before. The guardian spirits of Chiang Mai city and Wat Prataht Doi Sutep–Pui are the ancient Lawa spirits, Pu Sae and Ya Sae. These spirits are still revered by the people of Chiang Mai and are worshipped in an annual ceremony, at the foot of Doi Sutep, near Mae Hia Nai Village, involving the sacrificial slaughter of a young buffalo. The Camadevivamsa, an early 15th century text, refers to Doi Sutep–Pui as "Sugar Cane Mountain", renowned as the home of the 7th-century Lawa sage, Vasudeva (also called Rishi Warsuthep), from whom the modern name of the mountain was subsequently derived (Swearer & Premchit,

1998; Higham & Thosarat, 1998). Vasudeva is a central character in local mythology. He is believed to be one of the architects of Haripunchai (today the city of Lamphun), the ancient capital of the Mon civilization in northern Thailand and to have invited Princess Chamadevi, from Lopburi, to rule over the city. With the establishment of Chiang Mai city in 1296 A.D., the mountain probably took on an even greater significance for local people, providing them with foods, medicines, bamboo, and timber to construct houses and boats.

Early citizens of Chiang Mai relied upon the mountain as a source of clean water. Until the early 20th century, the city was linked to Doi Sutep–Pui by aqueducts, which carried water from Huay Gayo (stream) to the city's northwestern corner. The mountain remains a grade B1 watershed and still supplies much of the western outskirts of Chiang Mai with water.

Today the mountain remains a sacred place of pilgrimage of the highest importance for most northern Thai people, a fact that has probably helped deter extensive forest clearance and urban development of the mountain's southern slopes. The mountain's main importance to the local economy is as an earner of foreign exchange. It is the principal tourist attraction of Chiang Mai Province, where tourism is one of the most important industries. On Doi Sutep–Pui, however, most tourists visit the temple, Puping Palace (a cool-season retreat of the Royal Family), and the Hmong hill tribe community, Ban Meo Doi Pui. Although there is a huge demand for nature-based, eco-tourism on the mountain (Elliott, 1992), it is not being met. Most tourists seeking nature walks or bird watching sites fail to obtain adequate information and leave the national park disappointed. This is a shame since, if tourism were based more on Doi Sutep–Pui's natural attractions, it would encourage conservation and could generate income to support conservation management.

With Doi Sutep–Pui serving so many different functions to different groups of people, often with conflicting interests, it is hardly surprising that the national park and its diverse botanical communities are continuously threatened with over-exploitation. Although such conflicting interests pose a considerable challenge to those responsible for managing the national park, their resolution is essential if the mountain's rich botanical heritage is to be conserved.

THREATS TO THE BOTANICAL DIVERSITY OF DOI SUTEP–PUI NATIONAL PARK

Deforestation

Deforestation is the single most serious threat to botanical diversity in the national park. Being situated close to major centers of ancient civilizations, some chopping of trees for timber, firewood, and clearance of land for agricultural settlement would have occurred on Doi Sutep–Pui from the Iron Age onwards. However, major deforestation, resulting in a significant reduction of wildlife habitat and fragmentation of remaining forest, is a relatively recent occurrence (Photo 16). Reports about how much of the national park remains under forest cover are contradictory. National park officials have provided various estimates of forest cover for the national park, ranging from 40.2% to 73.5%. According to the first draft management plan for Doi Sutep–Pui National Park (Kasetsart University, 1988) between 1975 and 1985 forest cover fell from 225.34 km² (85.8%) to 148.98 km² (56.7%). Such comparisons, however, should be considered with caution, since differences in the figures can result from the different methods employed by different surveyors and different definitions of what constitutes forest. This is illustrated in the

latest study (Thailand Development Research Institute Foundation, 1997) which used computer analysis of satellite images to compare forest cover with a previous survey done in 1983. The report appears to show an increase in forest area from 173.4 km² (66.0%) in 1983 to 233.3 km² (83.1%) in 1993. The 1983 study classified degraded areas (49.4 km²) and plantations (16.4 km²) separately, whilst such areas were "not classified" in the later study, but must have been mistakenly classified as forest, to accumulate the total area surveyed. Areas occupied by agriculture and buildings were classified by both studies and increased from 39.7 km² (15.1%) in 1983 to 47.3 km² (16.8%) in 1993.

Several different activities have caused forest loss, but perhaps the most important have been logging in the lowlands, clearance of land for agriculture, and various tourism development projects. Although the 1997 report quoted above states that at least 16.8 % of the park has been converted to agriculture, national park officials have put this estimate as high as 43 % in recent years. Agricultural conversion usually affects large areas, often centered around hill tribe villages in the park's interior or adjacent to settlements along the boundary of the national park (Photo 1). The main reasons for this are increasing demand for agricultural products from the growing urban center of Chiang Mai and promotion of agricultural activities by several agricultural research centers based in the national park.

A huge increase in the number of people living in or around the national park has also promoted agricultural expansion at the expense of forest cover. In 1964 a survey recorded 369 people living inside what was to become Doi Sutep–Pui National Park. They were permitted to stay for the remainder of their lives, but were not allowed to sell their land. Only 148 people insisted on staying, but large numbers of immigrants soon joined them. By 1981 the number of people living in the park had increased to 1,956 and by 1988 the population had exploded to 13,694 (Kasetsart University, 1988). This last figure included people living along the boundaries of the national park, that were probably not included in earlier surveys, since the exact position of the national park boundary is uncertain and disputed. The latest report (Thailand Development Research Institute Foundation, 1997) compiles figures from the Land Department and Public Welfare Department to show a total population of 6,460 people or 1,135 families, living in 16 villages situated completely within the national park boundaries. The same report lists 76 settlements around the boundary of the national park with a total population of 51,109 people (growing at 2.4% per year) in 12,861 families (see Table 5 for 1999 hilltribe statistics). The pressure on forests near the boundaries of the national park is, therefore, clearly intense and likely to increase in the immediate future.

Many development projects that clear forest in the national park have been initiated to profit from the tourism boom. Stimulated by a phenomenal increase in land prices in the late 1980's and early 1990's, all kinds of methods were used to obtain land ownership documents for the development of resorts and other tourist attractions within the national park. Most are along the Mae Rim–Sameung road, which cuts through the northern part of the national park (Figure 1).

It is not only private tourism developers and agricultural communities who are to blame for deforestation on Doi Sutep–Pui. The establishment of government offices has also resulted in the loss of about 10 km² of forest. No fewer than 39 government agencies (TV transmitters, agricultural research stations, police and army posts *etc.*) lay claim to land in the park. Park officials consider that about 20 of these offices are technically illegal. The RFD themselves

recently greatly expanded tourist facilities at Montatahn Waterfalls. Many new buildings have been constructed at the expense of pristine **mx**f, thus degrading a previously beautiful area into another “resort”-like facility of not only dubious intent, but also questionable value.

Government officials advocate a pragmatic approach to the problem of encroachment by bringing encroachers to court on a case-by-case basis, rather than employing draconian measures to expel them all. However, such legal battles are lengthy and complicated due to ambiguous or forged land rights documents, often obtained with the connivance of corrupt officials. Several thousand such court cases would have to be fought to remove all encroachers from the park. Between 1987 and 1991, only 67 were successfully prosecuted and ordered to leave.

Fire

Fire is an annual hazard on Doi Sutep–Pui. It has probably always been a natural phenomenon in seasonally dry tropical forests, but human activities have greatly increased the extent and frequency of fires (Photos 4 & 17). Fires are started by local people to clear fields of weeds before planting crops and to release nutrients into the soil. Sometimes these fires escape into surrounding areas and burn out of control for many days. Local people also start fires to stimulate new growth of grass to attract game for hunting or to flush game out from dense forest. Some local people believe that fire stimulates the production of edible mushrooms, but research has shown fungal mycelia in burned areas is reduced after fire, compared with non-burnt areas (Juprachakorn, 1990; Kamsathorn, 1990). By clearing away the undergrowth, fire makes mushrooms easier to see, creating an illusion of increased production. Some fires are caused by careless behaviour, such as when cigarette butts are thrown away still alight, whilst others are started maliciously as part of local conflicts over control of the land.

The most significant effects of fire on the forest ecosystems in the national park are damage to mature vegetation, destruction of the ground flora, the soil seed bank, young tree seedlings and saplings. This destroys the ability of forest to regenerate. If fire occurs frequently enough to prevent establishment of young trees in the long term, the mature trees are not replaced when they die. This results in forest with a sparse, incomplete open canopy, a poorly developed or absent understorey, and a ground flora dominated by fire-resistant grasses. This situation already prevails in much of Doi Sutep–Pui’s deciduous dipterocarp–oak forest. Eventually, this process leads to replacement of forest with degraded grassland. In degraded areas, frequent fires are one of the main factors preventing re-establishment of forest through the natural processes of succession, although lack of seed sources and seed dispersing animals are also constraints (Maxwell, 1993). Fire also has a significant impact on the forest ecosystems by causing losses of nutrients in smoke and killing ground-dwelling animals.

Studies that compared an area of deciduous dipterocarp–oak forest, protected from fire for 27–28 years with an adjacent frequently burnt area, on the lower slopes of Doi Sutep near Wat Palaht (520 m elevation), showed that frequent fires reduced both the density and species richness of the tree seedling community (Meng, 1997). Protection from fire increased the species richness of both the ground flora and tree communities (Kafle, 1997; Pokaew, 1993) and increased both the seed rain and the seed bank and soil moisture (Meng, 1997). Trees protected from fire retained their leaves for longer into the dry season and produced more fruit than trees in the burnt area (Kafle, 1997). These studies showed conclusively that protection from fire enhanced the biodiversity and conservation value of the forest.

Roads

One of the most effective methods to conserve biodiversity in any protected area is to control access, but in Doi Sutep–Pui National Park, access is neither controlled nor limited. In fact, construction of new roads and improvement of existing ones has made it easier than ever for loggers and hunters to penetrate previously inaccessible areas of the park. Road construction activities damage the vegetation and increase soil erosion, causing siltation of watercourses. Improved access facilitates activities which damage the forest *e.g.* collecting showy orchids and ferns for sale, rubbish dumping (Photo 18), tree felling *etc.*, and increases the risk of forest fires. Traffic disturbs wildlife and destroys the sense of wilderness, sought by many visitors to the park.

Extinct, Extirpated, or Endangered Plant Species

Proving that a plant species has definitely been extirpated from the national park is almost impossible, since there is always a faint chance that a species might still exist in inaccessible places, away from where we have worked. However, there are several species, which we have previously observed growing in single sites, which have disappeared in recent years and are highly likely to have become extirpated from the park. Such species include *Hoya engleriana* Hoss. (Asclepiadaceae) and *Dendrobium sutapense* Rol. *ex* Dow. (Orchidaceae).

Except for topotypes, plant species recorded on Doi Sutep–Pui by other authors, but not observed by us, have not been included in the enumeration. This is due to the difficulties of dealing with multiple taxonomic name changes and uncertainties about specimens collected and identified many years ago. Just considering the 512 species named from specimens collected on Doi Sutep–Pui, (*i.e.* type locality), we have not seen 55 of them and it is probable that they no longer grow on the mountain (see Table 7). Some may have been endemic to the mountain. For example, in 1958 K. Larsen discovered a curious violet, saprophytic plant *Sciaphilla thaidanica* (Triuridaceae) on Doi Sutep–Pui (Larsen, 1961). Since then, however, there have been no further records of this strange Doi Sutep–Pui endemic.

Disappearances of some plants are undoubtedly due to changes in habitat, especially increased frequency of fires and agricultural expansion. Almost complete loss of entire habitat types such as teak forest and pine forest and conversion of large areas of forest into cultivated fields and abandoned degraded areas must have resulted in losses of species with specific habitat requirements.

In addition, over-collection of plants with ornamental value, for the horticulture trade and by individual collectors has resulted in the extirpation of several species, especially orchids such as *Paphiopedilum callosum* (Rchb. f.) Pfitz. (Banziger, 1988), *Calanthe triplicata* (Willem) Ames, *Arundina graminifolia* (D. Don) Hochr., and *Phaius tankervilleae* (Banks *ex* L' Her.) Bl. (all Orchidaceae). *Psilotum nudum* (L.) Beauv. (Psilotaceae), is also a great loss to the mountain due to its scientific interest, being the most primitive of vascular plants found in Thailand. According to Maxwell, both *Cycas siamensis* Miq. (*Epicycas siamensis* (Miq.) de Laub.), from lowland **dof** and **bb/df** and *Cycas pectinata* B.-H. (Cycadaceae), found in upland **eg/pine** areas, have been extirpated from the national park because of their ornamental value, fire, and habitat destruction. Over-exploitation of many food plants and those with purported medicinal properties has also reduced the populations of several plant species to critically low levels. For example, *Melientha suavis* Pierre ssp. *suavis* (Opiliaceae) is collected for its edible leaves, whereas

Pueraria mirifica A. S. & Suvant. (Leguminosae, Papilionoideae), *Sapria himalayana* Griff. (Rafflesiaceae), and *Betula alnoides* Ham. ex D. Don (Betulaceae) are all exploited for their dubious medicinal properties. *Mahonia nepalensis* DC. (Berberidaceae), whose roots have purported medicinal value, and *Cephalostachyum pergracile* Munro (Gramineae, Bambusoideae), culms of which are used as a container for a condiment of sticky rice, have also become uncommon. *Aquilaria crassna* Pierre ex Lec. (Thymelaeaceae, sandalwood) has become so scarce that only a few trees from one remote location are known in the National Park—a secret which Maxwell refuses to divulge to those he does not trust.

Effects of Extirpation of Animal Species on Plant Communities

Even where the forest survives, there are few large animals due to hunting. Roads now enable hunters to reach previously inaccessible areas and hunting is growing as a recreational pastime for city dwellers. Hunting has eliminated all large mammal species from the national park (except barking deer, *Muntiacus muntjak*) in the past thirty years. Hunting has also exterminated at least ten bird species including all species of hornbills (formerly five hornbill species were present (Round, 1984). Even now, hunting continues unabated, especially during the cool season, when gunfire may be heard anywhere on the mountain. Hunters' platforms and the remains of wildlife barbecues are commonly found (Photo 19). With the extermination of large animals from the park, hunters now turn their attention towards smaller species: squirrels and birds. There are two main groups of hunters in Doi Sutep–Pui National Park: local villagers, often using homemade guns and casual urban-based visitors, using more sophisticated weapons. Both groups hunt for sport. No residents of the national park rely on game as an essential food source.

Extirpation of large mammals and birds from the park has had serious consequences for the ecological functioning of the forest. In particular, seed dispersal is disrupted. The consequence is a reduction in animal-dispersed plant species, with wind-dispersed species filling the vacant niches. About 10% of deciduous dipterocarp–oak forest trees and 20% of evergreen forest trees relied on primates as seed dispersers. With the extirpation of most primates from the park, the reproductive ecology of these trees is adversely affected. In former times the main dispersers of large tree seeds from forest into degraded areas would have been rhinos, elephants, and wild cattle. The disappearance of these mammals from the mountain means that trees with very large seeds have no mechanism to re-colonize degraded areas. Trees establishing in such areas today tend to be restricted to those species with small, wind-dispersed seeds or those dispersed by extant smaller animals. Thus, even where forest is regenerating naturally, biodiversity is limited. For some plant species, passage of the seed through the gut of an animal is a prerequisite for germination (Traveset, 1998). Extirpation of large animals and the reduction of smaller animals to low populations will undoubtedly affect such plant species. Today the most important dispersers of tree seed are birds (especially bulbuls, barbets, starlings, mynahs, leaf birds and the common koel), fruit bats and civets, but none of these animals can disperse seeds larger than about 2 cm. For long term survival of the forest with its current high level of plant species richness, it is essential that regulations forbidding hunting in the park are vigorously enforced. It may be necessary to re-introduce some important seed-dispersing animals, such as hornbills and gibbons. Although sufficient habitat for viable populations of such animals still exists in the national park, attempts to re-introduce these species would be futile unless the hunting problem can be solved (Photo 19).

Table 14 lists 53 species that we consider to be in most need of conservation action.

Table 14. Vascular plant species in imminent danger of extirpation from Doi Sutep–Pui National Park

Species	Family	Habit	Abundance*	Known Elevation (m)
<i>Clematis eichleri</i> (M. Tam.) M. Tam.	Ranunculaceae	v	1	1075
<i>Thalictrum foliolosum</i> DC.	Ranunculaceae	v	1	1685
<i>Polyalthia littoralis</i> (Bl.) Boerl.	Annonaceae	t	1	325–350
<i>Polyalthia</i> sp.	Annonaceae	t	1	1000
<i>Cocculus laurifolius</i> DC.	Menispermaceae	l	1	1000–1125
<i>Hibiscus mutabilis</i> L.	Malvaceae	l	1	1275
<i>Firmiana colorata</i> (Roxb.) R. Br.	Sterculiaceae	t	1	1400–1500
<i>Schoutenia glomerata</i> King ssp. <i>peregrina</i> (Craib) Roehm. & Hart.	Tiliaceae	t	1	350
<i>Tetrastigma yunnanense</i> Gagnep.	Vitaceae	wc	1	1300–1500
<i>Callerya atropurpurea</i> (Wall.) Schot	Leguminosae, Papilionoideae	t	1	1000–1100
<i>Sorbus verrucosa</i> (Decne.) Rehd. var. <i>verrucosa</i>	Rosaceae	t	1	1550–1650
<i>Crypteronia paniculata</i> Bl. var. <i>paniculata</i>	Crypteroniaceae	t	1	620–1650
<i>Haldina cordifolia</i> (Roxb.) Rids.	Rubiaceae	t	1	500
<i>Hymenopogon parasiticus</i> Wall.	Rubiaceae	s	1	1275–1625
<i>Monotropa hypopitys</i> L.	Monotropaceae	h	1	1425–1650
<i>Pouteria grandiflora</i> (Wall.) Baeh.	Sapotaceae	t	1	1250–1340
<i>Diospyros coactanea</i> Flet.	Ebenaceae	t	1	400–500
<i>Schrebera swietenoides</i> Roxb.	Oleaceae	t	1	450–550
<i>Aganosma cymosa</i> (Roxb.) G. Don var. <i>cymosa</i>	Apocynaceae	wc	1	350–400
<i>Hoya engleriana</i> Hoss.	Asclepiadaceae	h	0–1	1550–1685
<i>Fagraea ceilanica</i> Thunb.	Loganiaceae	s (t)	1	1500
<i>Cordia mhaya</i> Kerr	Boraginaceae	t	1	425
<i>Utricularia exoleta</i> R. Br.	Lentibulariaceae	h	1	550–1400
<i>Strobilanthes rubro-glandulosus</i> Craib	Acanthaceae	h, s	1	1000
<i>Aristolochia versicolor</i> Hwang	Aristolochiaceae	v	1	1250
<i>Aquilaria crassna</i> Pierre ex Lec.	Thymelaeaceae	t	1	1000–1100
<i>Elytranthe albida</i> (Bl.) Bl.	Loranthaceae	s	1	1500–1610
<i>Euphorbia lacei</i> Craib	Euphorbiaceae	t (l)	1	500–750
<i>Sciaphila tuberosa</i> K. Lar.	Triuridaceae	h	0–1	1000
<i>Typhonium hirsutum</i> (Hu) Mur. & Mayo	Araceae	h	1	1125–1150
<i>Typhonium horsfieldii</i> (Miq.) Steen.	Araceae	h	1	1100–1250
<i>Stemona tuberosa</i> Lour. var. <i>tuberosa</i>	Stemonaceae	v	1	1125–1525
<i>Calamus arborescens</i> Griff.	Palmae	s, wc	1	1050
<i>Plectocomia kerrana</i> Becc.	Palmae	wc	1	1375–1400
<i>Anoectochilus siamensis</i> Schltr.	Orchidaceae	h	1	1025–1050
<i>Anoectochilus tortus</i> (King & Pantl.) King & Pantl.	Orchidaceae	h	1	1425
<i>Cymbidium tracyanum</i> O' Brien	Orchidaceae	h	0–1	1650
<i>Calanthe triplicata</i> (Willem) Ames	Orchidaceae	h	0	1000–1400
<i>Dendrobium sutepense</i> Rol. ex Dow.	Orchidaceae	h	1	1650–1685
<i>Nervilia calcicola</i> Kerr	Orchidaceae	h	1	625
<i>Paphiopedilum callosum</i> (Rchb. f.) Pfitz.	Orchidaceae	h	0	?

Species	Family	Habit	Abundance*	Known Elevation (m)
<i>Pecteilis susannae</i> (L.) Raf.	Orchidaceae	h	1	375–525
<i>Phaius tankervilleae</i> (Banks ex L' Her.) Bl.	Orchidaceae	h	0–1	1500
<i>Polystachya concreta</i> (Jacq.) Garay & Sweet	Orchidaceae	h	1	850
<i>Tainia viridifusca</i> (Hk.) Bth. & Hk. f.	Orchidaceae	h	1	1450
<i>Eleocharis congesta</i> D. Don var. <i>congesta</i>	Cyperaceae	h	1	1000–1400
<i>Podocarpus neriifolius</i> D. Don	Podocarpaceae	t	1	1050–1400
<i>Pinus merkusii</i> Jungh. & De Vriese	Pinaceae	t	1	1200
<i>Cephalotaxus griffithii</i> Hk. f.	Cephalotaxaceae	t	1	1400–1550
<i>Psilotum nudum</i> (L.) Beauv.	Psilotaceae	h	0–1	350–500
<i>Lycopodium squarrosum</i> Forst.	Lycopodiaceae	h	1	1500–1525
<i>Cyathea chinensis</i> Copel.	Cyatheaceae	t	1	1350–1400

*0 = recently extirpated or 1 = in imminent danger of extirpation from Doi Sutep–Pui National Park

CURRENT CONSERVATION MANAGEMENT OF BOTANICAL RICHNESS IN THE NATIONAL PARK

Reforestation

The first attempt to replant trees in the national park began in the late 1950's when the FAO (Food and Agricultural Organization of the United Nations) started providing assistance to the Royal Forest Department. Lowland areas were initially planted with selected strains of *Tectona grandis* L. f. (teak, Verbenaceae), while upland areas, especially upper water catchment valleys, were planted with *Pinus kesiya* Roy. ex Gord. (pine, Pinaceae), both native species, are suitable for the habitats they were planted in. The top 50 m of Doi Pui was clear-cut in the late 1950's and replanted with *Pinus kesiya* and *Cupressus torulosa* D. Don (Cupressaceae), from the Himalayas. Since that time the replanted forest there has thrived, but not spread, while none of the original forest there has been able to redevelop. Several species of *Eucalyptus*, especially *E. camadulensis* Dehn., *E. deglupta* Bl., and *E. maculata* Hk. (Myrtaceae), have also been introduced.

Recent years have seen a dramatic change in the reforestation policy of the national park, in line with national initiatives such as the "Plant a Big Forest for Our King" project to mark the Golden Jubilee of His Majesty King Bhumibol Adulyadej. The park policy is now to gradually replace plantations of exotic species with native forest trees. For example, in 1999 the *Cupressus* plantation on the summit of Doi Pui was under-planted with native trees, ready to replace the over-mature *Cupressus* trees as they die off. *Eucalyptus* plantations around the park have been earmarked for similar treatment. New plantings of eucalypts have ceased.

Many degraded areas in the park have been included in the Golden Jubilee tree-planting program. Most such areas were formerly cultivated by Hmong villagers and are clustered around Ban Meo Doi Pui, Ban Chang Kian, Ban Mae Sa Mai, and Doi Pui checkpoint and summit. Since 1993, villagers from all the main villages in the park have joined events to replant these areas with indigenous tree species. Furthermore, agreements not to subsequently cultivate

the planted sites have mostly been adhered to. Other organizations such as Chiang Mai University, Payap University, and private-sector companies have participated in tree planting events by supplying sponsorship and labor.

Although, initial attempts at restoring forest on Doi Sutep–Pui generated a great deal of enthusiasm and public support, the results were variable, mostly due to lack of technical knowledge and poor implementation. Indiscriminate slashing of weeds often destroyed more naturally established tree seedlings than were replaced with planted ones. Rather few tree species were planted, on any particular site, reducing the value of the plantings for biodiversity. Low quality planting stock, poor planting methods, and inadequate aftercare often resulted in high mortality of the planted trees. Fire control measures failed to prevent several of the planted areas from being burnt (Photo 17).

With such a rapid change in policy, from monoculture plantations to mixed plantings with native forest tree species and with little technical information available, it was inevitable that initial attempts to restore Doi Sutep–Pui's forests would be problematical. Therefore, in November 1994 the Forest Restoration Research Unit (FORRU) was established at the headquarters of the national park to develop effective methods to complement and accelerate natural forest regeneration on deforested sites, for conservation of biodiversity and watersheds (Elliott *et al.*, 1995). FORRU is a joint initiative between Chiang Mai University (CMU) and Doi Sutep–Pui National Park headquarters. The unit has concentrated on three main areas of research: i) species selection to maximize biodiversity in planted areas; ii) improved nursery techniques to produce high quality planting stock, and iii) improved silvicultural treatments to maximize the performance of trees after planting.

FORRU is testing the suitability of the framework species method of forest restoration (Goosem & Tucker, 1995; Tucker and Murphy, 1997, Forest Restoration Research Unit, 1998), by selecting indigenous tree species capable of rapidly shading out weeds and attracting wildlife into planted plots. So far research has mostly concentrated on restoring evergreen forest in watershed areas above 1200 m elevation, but the work is now expanding to consider lowland areas.

In FORRU's research nursery, researchers have determined the best methods to clean seeds and treat them to accelerate germination and increase the final germination percentage (Kopachon, 1995). Optimal media and container types were identified to maximize seedling health and vigor (Zangkum, 1998) and production schedules have been formulated for more than 40 species (Forest Restoration Research Unit, 2000). A second tree nursery was established at the largest village in the park, the Hmong community of Ban Mae Sa Mai, in order to test the practicability, by local communities, of the new techniques developed and to act as an education and demonstration center.

Demonstration plots were planted near the village to: i) assess the relative performance of different tree species; ii) determine the most appropriate treatments to enhance tree performance after planting, and iii) monitor the return of biodiversity to planted areas (Photos 21 & 22).

The information generated by FORRU is made freely available to national park officers, villagers, NGO's, and educational groups and is disseminated through publications (*e.g.* Forest Restoration Research Unit, 1998 and 2000) and frequent workshops. This project has attracted interested from other provinces in Thailand as well as neighboring countries, thus confirming the critical role of Doi Sutep–Pui National Park as a natural laboratory and regional center for ecological research and education.

Fire Prevention

Considerable efforts have been directed towards prevention and suppression of forest fires on Doi Sutep–Pui in recent years. A fire control unit is situated inside the national park and fire control activities are co-ordinated by a larger fire control center just outside the southern boundary of the national park near Wat Umong. A helicopter and small fire engine are available to extinguish fires. Fire tools are placed at strategic locations throughout the park and a small army of seasonally employed fire fighters is on standby day and night, from January to April, to respond to fire outbreaks. Despite all these efforts, however, local people and careless tourists continue to start fires that ravage large parts of the park annually and the fire control unit is unable to extinguish them all.

The particularly disastrous fire season of 1998, when many reforestation plots were destroyed, prompted the Provincial Forest Office to increase the budget for fire control and implement measures to increase co-operation with local people (Photo 17). Park officials organized villagers to protect designated areas around their villages, as well as to establish a network of fire breaks between the larger villages. This increased effort successfully reduced fires in 1999 and 2000 and the program is continuing.

Such enormous effort and expenditure directed at suppressing fires would not be necessary if fires were not started in the first place (Photo 17). Fires are often started due to ignorance, carelessness, and as a political weapon in land disputes. These problems can only be solved by better education, building better relationships between the park authorities and local people, and enforcement of the law.

Controlling Access

As one of the most heavily visited national parks in Thailand, it is difficult to limit access or to resist the constant demands from tour operators for better transportation facilities within the park. Currently, few areas of the park are subject to controlled access. The summit of Doi Pui is strictly off-limits to visitors when the Royal Family are in residence at Puping Palace. A manned checkpoint and barrier prevent access. Access to Mae Sa Waterfall is subject to an entrance fee, which might help to deter over-crowding of this beauty spot. In 1999, other checkpoints were established to levy entrance fees at the tracks to Ban Chiang Kian and Montatahn Waterfalls. Some of these checkpoints proved uneconomic and have since been abandoned. In recent years, the main road to Wat Prataht Doi Sutep–Pui has been widened to a three-lane highway (Photo 20); the track to Montatahn Waterfalls has been widened and the tracks to Ban Meo Doi Pui and Doi Pui summit have been upgraded to surfaced roads. The track from Pongyang to Ban Mae Sa Mai is currently being surfaced with concrete. An attempt to convert the track from Doi Pui checkpoint to Site B into a surfaced road in 1997 was thwarted by environmentalists. Therefore, at present, access to the more remote or fragile areas of the park seems to be actively encouraged by the park's policy on transportation, rather than controlled.

Conservation and Re-introduction of Endangered or Extirpated Species

Apart from the forest restoration activities, already described, there is little management to conserve individual plant species that have become endangered or to reintroduce plant species that have become extirpated from the park.

Most of the extirpated or endangered plant species listed in Table 15 could be conserved by better protection of the last remaining plants. This would involve continuous monitoring of remaining plant populations, preventing further habitat degradation, and stricter enforcement of the laws forbidding collection of plants within the national park.

Some species might benefit from attempts to establish new populations within the national park by transplanting plants from surviving populations to undisturbed areas where the species formerly grew. Reintroduction programs should be considered for those species listed in Table 15, involving collection of planting stock from nearby localities where such species still survive. Such conservation activities, focusing on the conservation of individual plant species, require intensive research to determine the habitat requirements and the reproductive ecology of the species concerned.

Management of Key Animal Species

At present there is no routine monitoring of animal populations that play a vital role in the reproductive ecology of plants *e.g.* seed-dispersers, pollinators, *etc.* There are no plans to reintroduce extirpated animals such as primates or hornbills, although sufficient habitat still exists in the national park. At present no security is available to guarantee the safety of reintroduced animals.

In the early 1990's Wildlife Fund Thailand mooted a plan to re-introduce gibbons and perhaps other extirpated wildlife in the national park. There was also a plan to have Hmong villagers there oversee and otherwise protect these animals with the idea that various ecotourism benefits would be gained. Aside from the inability of the RFD to accept or organize this pilot project, it was also considered, and perhaps quite realistically, impossible to prevent hunting—thus the plan never developed. Unless key pollinators and seed-dispersing animals can be introduced, the biodiversity in the national park will continue to decline—ultimately to the point of irreparable degradation. The loss of another of the remaining few natural national treasures of Thailand is quite imminent.

CONSERVATION MANAGEMENT RECOMMENDATIONS

1. Current forest restoration activities should continue and be improved in accordance with the latest research results and effective methods to restore lowland forests should be developed.
2. Existing plantations of exotic tree species should be gradually thinned and replaced with indigenous trees.
3. All stages of forest restoration projects should be planned in co-operation with local communities, from species selection to propagation, planting, aftercare, and protection of planted trees, and monitoring of the restored areas.
4. Recent improvements in the fire prevention and suppression program need to be maintained and strengthened.
5. Education and public information programs concerning fire prevention need to be increased and improved.
6. A sensible access policy for the national park needs to be formulated and implemented. Such a policy should include restricting access to the wilderness zone (as identified in the first

draft management plan for the national park (Kasetsart University, 1988)) and encouraging visitors to use areas that already have facilities catering for intensive visitor use.

7. No further expansion or improvement of the road system should be allowed in the national park.

8. A research program to routinely monitor populations of rare or endangered plant species in the national park should be devised and implemented.

9. Public awareness of the need to conserve endangered plant species should be increased and laws prohibiting collection of plants from the national park should be more strictly enforced.

10. Research to develop effective methods to propagate and plant or translocate endangered plant species needs to be carried out.

11. Laws prohibiting hunting in the national park should be more strictly enforced. Public awareness of the need to maintain animal populations within the national park needs to be increased.

12. Only after successful implementation of recommendation 11, experiments to re-establish populations of key animal species, particularly those responsible for dispersing large seeds, should be carried out.

13. Training of national park staff in conservation, nature education, ecotourism, basic ecology, and biodiversity surveying; and

14. Proper development of education centres, nature trails, existing guest facilities at the headquarters, and camping sites.

REFERENCES CITED

- Ashton, P. 1990. Thailand: Biodiversity center for the tropics of Indo-Burma. *J. Sci. Soc. Thailand* 16, 107–116.
- Bänziger, H. 1988. How wildlife is helping to save Doi Sutep: Buddhist sanctuary and national Park of Thailand. *Symb. Bot. Ups.* 28:3, 255–267.
- Barnett, E. C. 1962. *Florae Siamensis Enumeratio* III:3. Siam Society, Bangkok; 181–240.
- Baum, F., E. v. Braun, A. Hess, and K. E. Koch. 1982. Geological Map of Northern Thailand, 1: 250,000; sheet 5. Federal Institute for Geosciences and Natural Resources; Hanover, Germany.
- Blakesley, D., S. Elliott, and V. Anusarnsunthorn. 1998. Low technology tree propagation and the restoration of natural forest ecosystems. In: M. R. Davey, P. G. Anderson, K. C. Lowe, and J. B. Power eds., *Tree Biotechnology: Towards the Millennium*. Nottingham University Press.
- Craib, W. G. 1911. Contributions to the flora of Siam, Dicotyledones. *Bull. Misc. Info. (Kew Bull.)*; 7–60, 385–474. Reprinted: University of Aberdeen Studies 57 (1912) 210 pp.
- . 1912. Contributions to the flora of Siam, Monocotyledones. *Bull. Misc. Info. (Kew Bull.)* 397–435. Reprinted: Aberdeen University Studies 61 (1913) 41 pp.
- . 1914. Contributions to the Flora of Siam. *Additamenta* V, 4–11.
- . (“Prof. B. Craib”). 1931. The flora and vegetation of Siam. *The Mid-Pacific Mag.* 41:4, 328–335.
- Credner, W. 1935. Siam das land der Tai. reprint 1966: O. Zeller, Osnabruck; 105–135.
- Downie, D. G. 1925. Contributions to the flora of Siam. *Additamentia* XVI, XVII.. *Kew Bull.* 367–394, 404–426.
- De’Ath, C. 1992. A history of timber exports from Thailand with emphasis on the 1870–1937 period. *Nat. Hist. Bull. Siam Soc.* 40:1, 49–66.
- Edwards, M. V. 1950. Burma forest types. *Indian Forest Record (Silviculture)* 7:2, 133–173.
- Elliott, S. 1992. Tourists’ perceptions of wildlife and national parks in northern Thailand. *J. Wildlife in Thailand* 3:1, 43–50.
- , J. F. Maxwell, and O. P. Beaver. 1989. A transect survey of monsoon forest in Doi Sutep–Pui National Park. *Nat. Hist. Bull. Siam Soc.* 37:2, 137–171.
- , S. Ua–Apisitwong and O. Beaver, 1989. The small mammal communities of Doi Sutep–Pui National Park. *Proc. 10th Ann. Wildlife Symp.*, Kasetsart University, Bangkok.
- , and O. Beaver, 1991. The importance of Doi Sutep–Pui National Park for wildlife conservation, scientific research and education. In “The Future of Doi Sutep”, proceedings of a seminar held at Chiang Mai University, 14–15 March 1991, The For Chiang Mai Group, Chiang Mai (in Thai). Reprinted in *Tigerpaper* (FAO), 14:3, 23–30 (in English).
- , V. Anusarnsunthorn, N. Garwood, and D. Blakesley. 1995. Research Needs for restoring the forests of Thailand. *Nat. Hist. Bull. Siam Soc.* 43(2): 179–184.
- , P. Navakitbumrung, S. Zangkum, C. Kuarak, J. Kerby, D. Blakesley, and V. Anusarnsunthorn. 2000. The performance and response to fertilizer of six native tree species, planted to accelerate the recovery of biodiversity in a degraded upland watershed. In Elliott, S., J. Kerby, K. Hardwick, D. Blakesley, K. Woods and V. Anusarnsunthorn

- (Eds.). *Forest Restoration for Wildlife Conservation*. Biology Department, Faculty of Science, Chiang Mai University, Thailand, in press.
- Forest Restoration Research Unit. 1998. *Forests for the Future: Growing and Planting Native Trees for Restoring Forest Ecosystems*. Biology Department, Faculty of Science, Chiang Mai University, Thailand; 60 pp.
- Forest Restoration Research Unit. 2000. *Tree Seeds and Seedlings for Restoring Forests in Northern Thailand*. Biology Department, Faculty of Science, Chiang Mai University, Thailand; 151 pp.
- Fosberg, F. R. 1958. On the possibility of a rational, general classification of humid tropical vegetation. *Proceedings of the Symposium on Humid Tropical Vegetation*; Tjiaw, Indonesia; UNESCO; 46.
- Garrett, H. B. G. and A. F. G. Kerr. 1925. Doi Angka —the highest mountain in Siam. *J. Siam Soc.* 19, 1–19.
- Goosem, S. and N. Tucker, 1995. *Repairing the Rainforest*. Cassowary Publications, Cairns, Australia; 70 pp.
- Hardwick, K., J. Healey, S. Elliott, N. C. Garwood, and V. Anusarnsunthorn. 1997. Understanding and assisting natural regeneration processes in degraded seasonal evergreen forests in Northern Thailand. *Forest Ecology and Management* 99: 203–214.
- Hastings, P. J. and M. Liengsakul. 1984. Evidence for Holocene climatic change from Doi Intanon, Chiang Mai. *Environmental Geology and Geologic Techniques Meeting*, Chiang Mai, Thailand; February 1984; 10 pp. mimeograph.
- Hennipman, E. and A. Touw. 1966. Report on the Thai-Dutch botanical expedition 1965/1966. *Nat. Hist. Bull. Siam Soc.* 21:3–4, 269–273.
- Higham, C. and R. Thosarat. 1998. *Prehistoric Thailand from Early Settlement to Sukothai*. River Books, Bangkok; 234 pp.
- Hjelmqvist, H. 1968. Fagaceae, Betulaceae, and Corylaceae. *Studies in the flora of Thailand* 44. *Dansk Bot. Ark.* 23:4, 475–516.
- Holdridge, L. R., W. C. Grenke, W. H. Hatheway, T. Liang, and J. A. Tosi. 1971. *Forest Environments in Tropical Life Zones*. Pergamon Press, Oxford; 4–14.
- Hosseus, C.C. 1907. Die aus Siam bekannten Acanthaceen. *Bot. Jahr.* 41: 62–73.
- . 1907a. Zwei interessante neuheiten aus Siam im Kgl. Bot. Garten zu Dahlem. *Notiz. Berl.–Dahl.* 4 (Oct.), 314–318 and taf. 1 & 2.
- . 1907b. Eine neue Rafflesiaceengattung aus Siam. *Bot. Jahr.* XLI, 55–61 and taf. 1, 2.
- . 1908. Beitrage zur flora des Doi–Sutap, unter vergleichender berucksichtigung einiger anderer hohenzuge nord–Siams. *Engl. Bot. Jahr.* XL: 93, 92–99.
- . 1910. Beitrage zur flora Siams. *Bot. Centralbl. Beih.* XXVII:2, 455–507 pp.
- . 1911. Die botanisches ergebnisse meiner expedition Nach Siam. *Bot. Centralbl. Beih.* XXVIII:2, 357–457 pp.
- . 1911a. Einige neue arten meiner Siam–expedition. *Feddes rept.* 10 (Oct.) 61–64.
- IUCN. 1973. *A working system for classification of world vegetation*. IUCN Occasional Paper no. 5; Morges, Switzerland; 22 pp.
- Jacobs, M. 1962. *Reliquae Kerrianae*. *Blumea* XI:2, 427–493.
- Juprachakorn, P. 1990. Effects of forest fire on cellulolytic micro–organisms in the soil. B.Sc. thesis, Biology Department, Chiang Mai University; 44 pp.

- Kafle, S. K. 1997. Effects of forest fire protection on plant diversity, tree phenology, and soil Nutrients in a deciduous dipterocarp-oak forest in Doi Sutep-Pui National Park. M.Sc. thesis, Graduate School, Chiang Mai University, Chiang Mai, Thailand; 91 pp.
- Kamsathorn, S. 1990. Effects of forest fire on pectinolytic micro-organisms in soil. B.Sc. thesis, Biology Department, Chiang Mai University; 58 pp.
- Kaosoot, B.; N. Nawngphanpitak, P. Saifahk, and G. Boonnagahn. 1996. Land use planning in the upper Ping River watershed. Department of Land Use Planning, Land Development Department, Ministry of Agriculture and Cooperatives; Bangkok, Thailand; 8.
- Kasetsart University. 1988. A draft management plan for Doi Sutep-Pui National Park, Kasetsart University, Bangkok.
- Kerr, A. F. G. 1911. Contributions to the flora of Siam: sketch of the vegetation of Chiang Mai. Bulletin of Miscellaneous Information (Kew Bull.) 1911:1, 1-6.
- _____. 1933. William Grant Craib (obituary). Kew Bull. 409-412.
- Kopachon, S., 1995. Seed germination and seedling development of dry tropical forest trees: a comparison between dry-season-fruiting and rainy-season-fruiting species. M. Sc. thesis, Graduate School, Chiang Mai University; 86 pp.
- _____, K. Suriya, K. Hardwick, G. Pakaad, J. Maxwell, V. Anusarnsunthorn, D. Blakesley, N. Garwood, and S. Elliott. 1996. Forest restoration research in northern Thailand: 1. The fruits, seeds and seedlings of *Hovenia dulcis* Thunb. (Rhamnaceae). Nat. Hist. Bull. Siam Soc. 44: 41-52.
- Küchler, A. 1966. The vegetation west of the Maenam Ping near Chiang Mai, Thailand; 1:30,000; a one sheet map inserted in Kuchler & Sawyer, 1967 (q.v.).
- _____. and J. O. Sawyer. 1967. A study of the vegetation near Chiang Mai, Thailand. Trans. Kansas Acad. Sci. 70:30, 281-348.
- Kurz, S. 1877. Forest Flora of British Burma I, Calcutta; XIII-XXX.
- Larsen, K. 1961. Triuridaceae. Studies in the flora of Thailand. Dansk Botanisk Arkiv 20;1: 48-49.
- Mahidol University. 1992. Rapid assessment of forest/wildlife/river ecology in area affected by Kaeng Sua Ten Dam. Center for Conservation Biology, Faculty of Science, Mahidol University; Bangkok, Thailand; 7-69.
- _____. 1995. Survey of natural teak forests in Thailand. Center For Conservation Biology, Faculty of Science, Mahidol University; Bangkok, Thailand; 71 pp + map.
- Maxwell, J. F. 1988. The Vegetation of Doi Sutep-Pui National Park, Chiang Mai Province, Thailand. Tigerpaper (FAO) 15:4, 6-14.
- _____. 1989. Botanical notes on the vascular flora of Chiang Mai Province, Thailand. Nat. Hist. Bull. Siam Soc. 37:2, 177-185 pp.
- _____. 1991. Botanical notes on the vascular flora of Chiang Mai, Thailand: 2. Nat. Hist. Bull. Siam Soc. 39:1, 71-83.
- _____. 1992. Botanical notes on the flora of northern Thailand: 3. Nat. Hist. Bull. Siam Soc. 40:2, 185-189.
- _____. 1992. Lowland vegetation (450-c. 800 m) of Doi Chiang Dao Wildlife Sanctuary, Chiang Mai Province, Thailand. Tigerpaper (FAO) 19:3, 21-25.
- _____. 1993. More rot, less fire for Doi Sutep. Chiang Mai Newsletter 2:6 (June) 1, 3.
- _____. 1994. Botanical notes on the flora of Thailand: 4. Nat. Hist. Bull. Siam. Soc. 42:2.

- 259–262.
- . 1995. Vegetation and vascular flora of the Ban Saneh Pawng area, Lai Wo Subdistrict, Sangklaburi District, Kanchanaburi Province, Thailand. *Nat. Hist. Bull. Siam Soc.* 43:1, 131–170.
- . 1996. Vegetation of the Mai Soi conservation area, Chom Tong District, Chiang Mai Province, Thailand. *Tigerpaper (FAO)* 23:1, 22–27.
- . 1998. Botanical notes on the flora of northern Thailand: 6. *Nat. Hist. Bull. Siam Soc.* 46:2, 149–154.
- . 1998. Upland vegetation of Doi Chiang Dao Wildlife Sanctuary, Chiang Mai Province, Thailand, *Tigerpaper (FAO)* 25:3, 5–11.
- . 1999. Mae Yom national park: A precious national botanical treasure. *Nat. Hist. Bull. Siam Soc.* 47:1, 7–11.
- . 1999a. Botanical note: *Hoya thomsonii* Hk. f. (Asclepiadaceae)—A new record for Thailand. *Nat. Hist. Bull. Siam Soc.* 47:2, 259 pp.
- . 2000. Vegetation in the Seephandon Wetland, Lao PRD. *Nat. Hist. Bull. Siam Soc.* 48, 47–93.
- . S. Elliott, P. Palee, and V. Anusarnsunthorn. 1995. The vegetation of Doi Kuhn Tan National Park, Lamphun–Lampun Provinces, Thailand. *Nat. Hist. Bull. Siam Soc.* 43:2, 185–206.
- . S. Elliott, P. Palee, and V. Anusarnsunthorn. 1997. The vegetation of Jae Sawn National Park, Lampang Province, Thailand. *Nat. Hist. Bull. Siam Soc.* 45:1, 71–97.
- . and V. Anusarnsunthorn. 1999. Distribution and conservation of bamboo species in northern Thailand. In A. N. Rao & V. R. Rao eds. *Bamboo and Rattan Genetic Resources and Use Research Reports*. IPGRI–APO; Serdang, Malaysia; 131–155.
- Meng, M. 1997. Effects of forest fire protection on seed dispersal, seed bank, and tree seedling establishment in a deciduous dipterocarp–oak forest in Doi Sutep–Pui National Park. M.Sc. thesis, Graduate School, Chiang Mai University, Chiang Mai, Thailand; 89 pp.
- Medway, Lord. 1972. Phenology of a tropical rain forest in Malaysia. *Biol. J. Linn. Soc.* 4, 117–125.
- Nabhitabhata, J. 1987. Wildlife in Doi Sutep–Pui National Park. *Kog–Ma Watershed Bull. (Kasetsart University, Bangkok)* 48, 1–41.
- Neal, D. G. 1967. Statistical description of the forests of Thailand. Military Research & Development Center; Bangkok, Thailand; 343 pp.
- Ogawa, H.; K. Yoda, and T. Kira. 1961. A preliminary survey on the vegetation of Thailand. *Nature and Life in SE. Asia I*; Kyoto, Japan; 65–74, 149–150.
- Pinratana, A. 1977–85. Butterflies of Thailand. Vols. 1–5. Viratham Press, Bangkok; 486 pp.
- Pokaew, C. 1993. The diversity of trees and seedling in burnt and non-burnt forest. Independent study for Master of Science in Biology, Chiang Mai University. 49 pp.
- Richards, P. W. 1952. *The Tropical Rain Forest—An Ecological Study*. University Press, Cambridge; 315–345.
- . 1996. *idem*. 2nd ed. Cambridge University Press, Cambridge; 389–405.
- Robbins, R. G. and T. Smitinand. 1966. A botanical ascent of Doi Inthanond. *Nat. Hist. Bull. Siam Soc.* 21: 3 & 4, 205–227.
- Rolfe, R. A. 1906. New orchids —decade 27. *Bull. Misc. Info. (Kew Bull.)* 84.
- . 1908. New orchids: decade 31. *Bull. Misc. Info. (Kew Bull.)* 70.

- _____. 1908a. New orchids: decade 32. Bull. Misc. Info. (Kew Bull.) 412–414.
- _____. 1909. New orchids: decade 38. Bull. Misc. Info. (Kew Bull.) 62.
- Round, P. D. 1984. The status and conservation of the bird community in Doi Sutep–Pui National Park, north–west Thailand. Nat. Hist. Bull. Siam Soc. 32:1, 21–46.
- Royal Forest Department. 1950. Types of forests in Thailand. Royal Forest Department; Bangkok, Thailand; 9 pp. + colour map (1952).
- _____. 1962. Types of forests in Thailand. Royal Forest Department; Bangkok, Thailand; 12 pp. + colour map.
- Samapuddhi, K. 1957. The forests of Thailand and forestry programmes. Royal Forest Department, no. R. 20; Bangkok, Thailand; 4–10.
- Santisuk, T. 1985. Conservation of temperate and subalpine vegetation of the mountains and ridges of Doi Chiang Dao. In: Nature Conservation in Thailand. Siam Society, Bangkok; 237–242 (in Thai).
- _____. 1988. An Account of the Vegetation of Northern Thailand. Franz Steiner, Stuttgart, Germany; 100 pp. + 75 plates.
- _____. 1997. Geographical and ecological distribution of the two tropical pines, *Pinus kesiya* & *Pinus merkusii*, in southeast Asia. Thai Forest Bull. (Bot.) 25, 102–116.
- _____. 1998. Doi Chiang Dao, A mountain of concern: rare and endangered plants. The Botanical Garden Organization Newsletter 6, 11–18.
- Sawyer, J. O. and C. Chermisrivathana. 1969. The flora of Doi Sutep, Doi Pui, Chiang Mai, North Thailand. Nat. Hist. Bull. Siam Soc. 23: 1–2, 99–132.
- Seidenfaden, G. 1979. Orchid genera in Thailand VIII, *Bulbophyllum* Thou. Dansk Bot. Ark. 33:3, 203.
- Smitinand, T. 1966. The vegetation of Doi Chiang Dao—a limestone massive in Chiang Mai, north Thailand. Nat. Hist. Bull. Siam Soc. 21 (1&2), 93–100.
- _____. 1977. Vegetation and ground cover of Thailand. Technical Paper no. 1, Faculty of Forestry, Kasetsart University; Bangkok, Thailand; mimeograph 15 pp.
- _____. 1989. Floristic inventory of tropical countries: Thailand. D. G. Campbell and H.D. Hammond eds. New York Botanical Garden, New York; 64–81.
- _____. S. Sabhasri, and P. Kunstadter. 1978. The environment of northern Thailand. In farmers in the forest. P. Kunstadter, E. C. Chapman, and S. Sabhasri eds. University Press of Hawaii, Honolulu; 24–40.
- Statistical reports of Changwat Chiangmai. 1992–1997. Chiang Mai Statistical Office, National Statistical Office, Office of the Prime Minister; Bangkok, Thailand. 1992, p. 106; 1993, p. 114; 1994, p. 112; 1995, p. 110; 1996, p. 103; 1997, p. 94.
- Studies in the flora of Thailand, 1961–1968. Dansk Bot. Ark. 20:1–3, 275 pp; 23:1–4, 540 pp; 27:1, 107 pp.
- Suwatcherunkul, P. and D. Srisawang. 1993. Land use planning of Chiang Mai Province. Department of Land Use Planning, Department of Land Development, Ministry of Agriculture and Cooperatives; Bangkok, Thailand; 134.
- Swearer, D. K. and S. Premchit, 1998. The legend of Queen Cama. State University of New York, 195 pp.
- Tagawa, M. and K. Iwatsuki. 1979–1989. Pteridophytes. Flora of Thailand 3:1–4, 639 pp.
- Tairapat, P. and P. Donsi. 1996. Natural resources study of soil, water, and forests in the uplands

- of Mae Ping drainage. Department of Land Use, Ministry of Agriculture and Cooperatives, Bangkok; 8–9.
- TDRI. 1996. The assessment of a master plan (1990–1994) and national park management plan, phase 2 in Doi Sutep–Pui National Park. Thailand Development and Research Institute; Bangkok, Thailand .
- Thailand Development Research Institute Foundation. 1997. Management Plan of Doi Sutep–Pui National Park, B. E. 2541–2550 (3 volumes) Bangkok, Thailand.
- Tosi, J. A. 1964. Climatic control of terrestrial ecosystems: a report on the holdridge model. *Econ. Geogr.* 40:2, 173–181.
- Traveset, A., 1998. Effect of seed passage through vertebrate frugivores' guts on germination: a review. *Perspectives in Plant Ecology, Evolution and Systematics*, 1–2: 151–190.
- Tucker, N. and T. Murphy, 1997. The effects of ecological rehabilitation on vegetation recruitment: some observations from the wet tropics of north Queensland. *Forest Ecology and Management* 99: 133–152.
- Walter, H. 1985. *Vegetation of the Earth*, third ed.; Springer–Verlag, Berlin; 45–112.
- Werner, W. 1993. *Pinus* in Thailand. Franz Steiner Verlag, Stuttgart; 269–270.
- and T. Santisuk. 1993. Conservation and restoration of montane forest communities in Thailand. In H. Lieth and M. Lohmann eds. *Restoration of Tropical Forest Ecosystems*. Kluwer Academic Publishers, Netherlands; 193–202.
- Whitmore, T. 1975. *Tropical Rain Forests of the Far East*. Clarendon Press, Oxford; 3–4, 43–51, 121–165.
- 1991. *An Introduction to Tropical Rainforests*. Clarendon Press, Oxford; 9–10.
- Williams, L. 1967. *Forests of Southeast Asia, Puerto Rico, and Texas*. U. S. Department of Agriculture; Washington, D. C.; 58–249.
- Zangkum, S. 1998. The effects of container type and media on growth and morphology of tree seedlings to restore forests. M.Sc. thesis, Graduate School, Chiang Mai University; 87 pp.
- Zhu, H. 1997. Ecological and biogeographical studies on the tropical rain forest of south Yunnan, SW China, with a special reference to its relation with rain forests of tropical Asia. *J. Biogeography* 24, 647–662.

PHOTOGRAPHS

(Photos 1-22 were taken by Stephen Elliott)

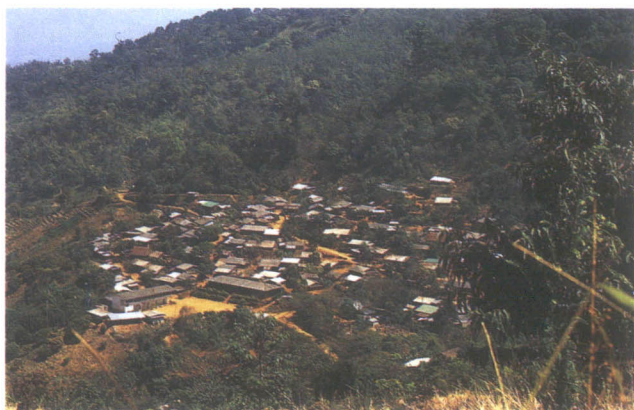


Photo 1

The Hmong community of Ban Mae Sa Mai in the northern part of Doi Sutep–Pui National Park at c. 1000 m is the largest village in the national park. Although, in the past, villagers have been responsible for clearing forest from large areas in the national park, they are now actively involved in forest restoration projects.



Photo 2

Deciduous dipterocarp–oak, seasonal forest prior to annual incineration, a kind of secondary forest which is maintained by fire, cutting, and soil erosion; is the dominant vegetation in the lowlands (350–c. 850 m) of the national park. It is dominated by several species of Dipterocarpaceae, e.g. *Dipterocarpus tuberculatus* Roxb. var. *tuberculatus*, as shown here, and Fagaceae (oaks). 23 March 1990, c. 650 m.

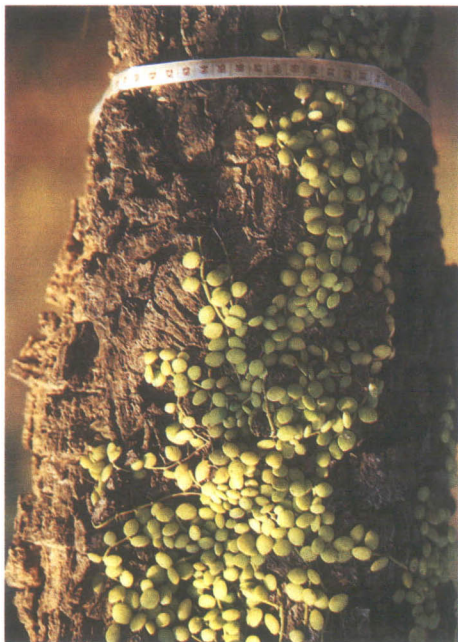


Photo 3

Dischidia nummularia R. Br. (Asclepiadaceae) is an evergreen, succulent, creeping, clustered, epiphytic herb found in deciduous dipterocarp–oak seasonal forest from 400 to 900 m. It is much less common now since it has been over-exploited for its horticultural value. Sirintorn Observatory, 3 March 1990, c. 850 m.

Photo 4

Annual fires continue to wreak havoc with the plant communities of Doi Sutep–Pui National Park. Research at the Biology Department, Chiang Mai University, has shown conclusively that protection from fire significantly increases biodiversity and conservation value of deciduous forests. 3 March 1996, c. 750 m.





Photo 5

Deciduous dipterocarp–oak forest with pine is a rare forest type in the national park. Small patches can be seen on the eastern side of Doi Sutep at approximately 800–900 m elevation. 3 September 1994.



Photo 6

Villagers hack *Pinus kesiya* Roy. ex Gord. (Pinaceae, pine) trees to obtain slivers of resin-impregnated wood, which are used as fire-lighters. This destructive practice weakens trees so that they blow over during storms. Consequently very large pine trees are a rare sight in the park. Summit of Doi Sutep, 2 January 1996, c. 1620 m.



Photo 7

Symplocos racemosa Roxb. (Symplocaceae) in evergreen forest with pine on 2 April 1997 at c. 1100 m. This is a deciduous (in dof) or evergreen (in eg/pine) treelet or tree which is also found in deciduous dipterocarp–oak seasonal forest, often with pine, and has an overall elevation range of 350–1250 m.



Photo 8

Mixed evergreen + deciduous seasonal forest is typified by the presence of *Dipterocarpus costatus* Gaertn.f. (Dipterocarpaceae), an evergreen emergent tree, depicted here, which is restricted to this forest type. Montatahn Waterfalls, c. 750 m, 2 April 1997.



Photo 9

Aeginetia indica Roxb. (Orobanchaceae) is one of 23 species of parasitic plants that grow in Doi Sutep–Pui National Park. This species has no green pigmentation or leaves and is incapable of carrying out photosynthesis. This deciduous, perennial herb draws nutrients from the roots of nearby plants. It is found in all forest types, from 375 to 1650 m, in the national park. Flowers are produced from August to November and capsules during September to December. 26 November 1996, c. 1050 m.

Photo 11

Aeschynanthus hosseusii Pell. (Gesneriaceae) is a common, evergreen epiphyte on trees in primary, evergreen, seasonal forest with pine from 1025 to 1525 m. This species produces flowers from July to October and capsules during September to December. It was named by the French botanist François Pellegrin in 1930 in honour of Carl Hosseus, a German who was the first botanist to collect on Doi Sutep–Pui late in 1904. The bright red corollas attract sunbirds which effect pollination. 2 November 1996, c. 1600 m.



Photo 10

Vaccinium sprengelii (D. Don) Sleum. (Ericaceae) is a common, evergreen, fire-resistant treelet or small tree found in most forest types at 600–1650 m in the national park. Flowers are produced from October to March and fruits from March to June. 3 February 1996, c. 850 m.



Photo 12

Lithocarpus craibianus Barn. (Fagaceae) near the summit of Doi Pui, c. 1600 m on 2 September 1997. This species was first collected at 1500–1700 m on the summit areas of the national park by A. F. G. Kerr before 1910. It was described by Euphemia Barnett in 1938, based on this material, in honour of William Grant Craib. It is apparently endemic to northern Thailand.



Photo 13

A series of small dams along several streams on the east side of Doi Sutep were constructed in the early 1990s, in an attempt to keep more water on the mountain in the dry season. Most of these dams became clogged with silt within 6 months and by now many have cracked. The natural ecology of these streams has been severely disrupted. Near Puping Palace, 1400 m, 6 June 1992.

Photo 14

A scene typical of the agricultural encroachment that occurs over large areas of the national park. Slopes that are far too steep for cultivation are cleared, planted, and sprayed with toxic pesticides, resulting in soil erosion, water pollution, and siltation of waterways. This photograph was taken on 14 October 1990 at c. 1200 m near Erawan Resort in the northern part of the national park.



Photo 15

Ficus semicordata B.-H. ex J. E. Sm. var. *semicordata* (Moraceae) is a common deciduous tree found in disturbed areas from 350 to 1550 m in the national park. Figs are produced on branches from the trunk, some of which are underground, from February to May, and provide a food resource for rodents and ground-dwelling birds. In contrast to most other species of *Ficus* in the national park, humans can also eat these figs. 2 April 1997, c. 1250 m.

Photo 16

Large parts of the national park are deforested or have degraded land like this. Abandoned agricultural fields become dominated by herbaceous weeds, but scattered surviving trees can provide seeds to enable such areas to regenerate, provided they are protected from fire and other disturbances. 3 October 1996.



Photo 17

Serious fires during the dry season of 1998 wiped out many forest restoration plots. This plot, photographed on 10 April 1998 at 1350 m, has since been replanted and, so far, protected from destruction.



Photo 18

Disposal of garbage is a perpetual and increasingly dangerous problem in Doi Sutep–Pui National Park. Various garbage disposal schemes have been attempted over the years, but garbage dumps like this one are still a common sight. 5 May 1989, c. 1000 m.

Photo 19

A hunter's platform in deciduous dipterocarp–oak, seasonal forest at c. 700 m. Hunting occurs commonly in the national park, especially during the cool-dry season. Extermination of all large mammal and bird species has seriously disrupted forest dynamics, especially seed dispersal. 12 February 1992.

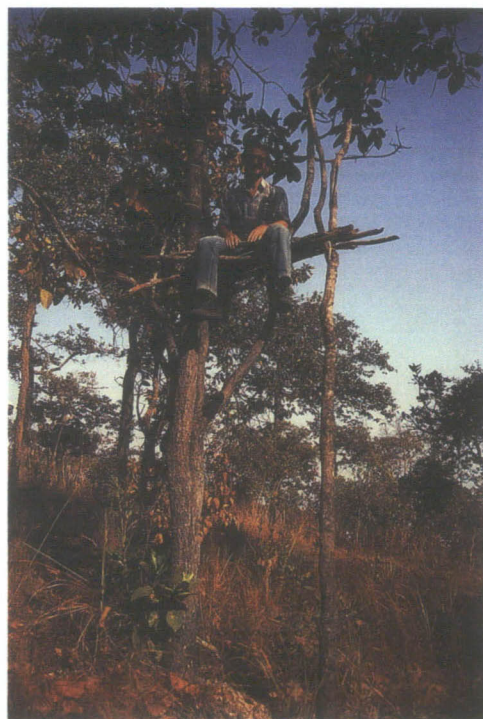


Photo 20

Poor road construction and inadequate protection of the vegetation, combined with heavy rain, caused this landslide near Wat Prataht Doi Sutep at c. 1000 m in October 1994.

Photo 21

A Hmong hill tribe woman prepares to plant crops in between rows of native forest trees planted for forest restoration. Cultivation in upper watershed areas of the national park is gradually being replaced by forest restoration projects. 1 June 1996.



Photo 22

At the beginning of the rainy season, villagers living in the park join in forest restoration activities. Here the villagers of Ban Mae Sa Mai plant trees to celebrate the birthday of Queen Sirikit, 1 June 1997.



Photo 29

Mucuna macrocarpa Wall. (Leguminosae, Papilionoideae) is a common evergreen woody climber found in mxl, egf, and cg/pine forests from 450 to 1650 m. Inflorescences are cauliflorous and are produced during February–March and pendent infructescences with many-seeded pods from May to September.

Photo: Warren Brockelman, summit area of Doi Pui, c. 1650 m, early May 1997.

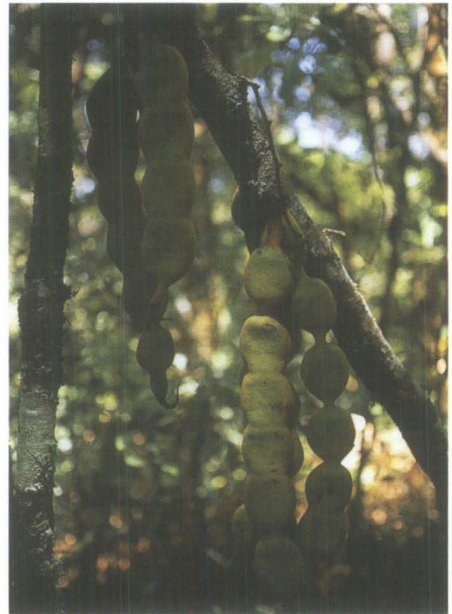


Photo 30

Mussaenda parva Wall. ex G. Don (Rubiaceae) includes two synonymous species described from Doi Sutep specimens, viz *Mussaenda sootepensis* Hoss. and *Mussaenda neosootepensis* Craib. It is a common deciduous (below 850 m) or evergreen vine, woody climber, or scandent plant found in all forest types, especially in open areas, from 500 to 1650 m. Flowers with orange corolla lobes are produced during July–March and berries from August to March. The white structures are an enlarged calyx lobe from one lobe on one flower in each cyme in the inflorescence.

Photo: Warren Brockelman, above Montatahn Falls, c. 850 m, early May 1997.



INDEX OF TAXA

Taxa printed in regular type are the names accepted in this monograph. *Italicized* entries represent basionyms and the more recent or common synonyms for the accepted names. The list of synonyms is far from complete.

Abelmoschus moschatus Medic. ssp. moschatus var. moschatus	68	Aeschynanthus lineatus Craib	106
Abrus precatorius L. ssp. precatorius	78	Aeschynanthus macranthus (Merr.) Pell.	106
Abrus pulchellus Wall. ex Thw. ssp. pulchellus	78	<i>Aeschynanthus macrocalyx Hoss.</i>	106
Acacia concinna (Willd.) DC.	76	<i>Aeschynanthus persimilis Craib</i>	106
Acacia megaladena Desv. var. megaladena	76	Aeschynomene americana L. var. americana	78
Acalypha brachystachya Horn.	116	Afgekia filipes (Dunn) Gees.	78
<i>Acalypha kerrii Craib</i>	116	<i>Afzelia siamica Craib</i>	77
Acanthaceae	107	<i>Afzelia xylocarpa</i> (Kurz) Craib	77
Acanthephippium striatum Lindl.	132	Aganosma breviloba Kerr	38
<i>Acer garrettii Craib</i>	75	Aganosma cymosa (Roxb.) G. Don var. cymosa	100
Acer laurinum Hassk.	75	<i>Aganosma harmandiana Pierre ex Spire</i>	100
Aceraceae	75	Aganosma marginata (Roxb.) G. Don	100
Achyranthes bidentata Bl. var. bidentata	112	Aganosma siamensis Craib	100
Achyropernum densiflorum Bl.	111	Agapetes hosseana Diels	97
Acorus gramineus Sol. ex W. Ait.	129	Agapetes variegata Wall. ex D. Don	97
<i>Acorus rumphianus S.Y. Hu</i>	129	Agavaceae	129
Acropsis indica Wight	132	<i>Ageratina adenophora</i> (Spreng.) R. M. King & H. Rob.	95
Acrocarpus fraxinifolius Wight ex Arn.	77	Ageratum conyzoides L.	94
Acroceras tonkinense (Bala.) C.E. Hubb.	142	Aglaia lawii (Wight) Sald. & Rama.	72
Acronychia pedunculata (L.) Miq.	71	Aglaomorpha coronans (Wall. ex Mett.) Copel.	153
Actinidia rubricaulis Dunn	68	Aglaonema simplex (Bl.) Bl.	130
Actinidiaceae	68	Agrimonia nepalensis D. Don var. nepalensis	84
Actinodaphne henryi Gamb.	114	Aidia yunnanensis (Hutch.) Yaha.	90
<i>Actinoscirpus grossus (L.f.) Goetgh.</i>	141	Aizoaceae	89
Adenanthera microsperma Teijsm. & Binn.	76	Ajuga bracteosa Wall. ex Bth.	111
<i>Adenanthera pavonina L. var. microsperma (Teijsm. & Binn.) Niels.</i>	76	Alangiaceae	89
Adenia cardiophylla (Mast.) Engl.	87	Alangium barbatum (R. Br.) Baill. var. barbatum	89
Adenia heterophylla (Bl.) Kds. ssp. heterophylla var. heterophylla	87	Alangium chinense (Lour.) Harms	89
Adenia pinnasecta (Craib) Craib var. pinnasecta	87	Alangium kurzii Craib	89
Adenosma hirsuta (Miq.) Kurz	104	Alangium salvifolium (L.f.) Wang. ssp. hexapetalum (Lmk.) Wang.	89
Adenostemma lavenia (L.) O.K. var. lavenia	94	Albizia chinensis (Osb.) Merr.	76
Adenostemma lavenia (L.) O.K. var. parviflorum (Bl.) Hochr.	93	Albizia crassiramea Lace	97
<i>Adenostemma viscosum Forst.</i>	93	Albizia garrettii Niels.	77
Adiantum edgeworthii Hk.	149	Albizia lebbeck (L.) Bth.	77
Adiantum erylliae C. Chr. & Tard.	149	Albizia lucidior (Steud.) Niels.	77
Adiantum philippense L.	149	Albizia odoratissima (L. f.) Bth.	77
Adiantum zollingeri Mett. ex Kuhn	149	Alchornea tiliifolia (Bth.) M.-A.	116
Adinandra integerrima T. And. ex Miq.	67	Alectra avensis (Bth.) Merr.	105
Aeginetia indica Roxb.	106	Aleurites moluccana (L.) Willd.	116
Aeginetia pedunculata Wall.	106	Alismataceae	125
Aegle marmelos (L.) Corr.	71	Allium cepa L.	53
Aerides falcata Lindl.	132	Allium sativum L.	53
Aerides flabellata Rol. ex Dow.	39	Allophyllus cobbe (L.) Raeusch.	75
Aerva sanguinolenta (L.) Bl.	112	Alloterospis cimicina (L.) Stapf	142
Aeschynanthus hildebrandii Hemsl.	106	Alloterospis semialata (R. Br.) Hitch.	142
Aeschynanthus hosseusii Pell.	106	Alocasia macrorrhizos (L.) G. Don	130
		Alocasia navicularis (C. Koch & Bou.) C. Koch & Bou.	130
		Alpinia blepharocalyx K. Sch.	126
		Alpinia bracteata Rosc.	126

<i>Alpinia galanga</i> (L.) Willd.	126	<i>Aneilema sinicum</i> Lindl.	125
<i>Alpinia malaccensis</i> (Burm. f.) Rosc.	126	<i>Angiopteris evecta</i> (Forst.) Hoffm.	148
<i>Alseodaphne andersonii</i> (King ex Hk.f.) Kosterm.	114	Angiospermae, Dicotyledoneae	63
<i>Alsomitra angustipetala</i> (Craib) Craib	88	Angiospermae, Monocotyledoneae	125
<i>Alstonia glaucescens</i> (K. Sch.) Mona.	100	<i>Anisocampium cumingianum</i> Presl	152
<i>Alstonia rostrata</i> Fischer	100	<i>Anisomeles indica</i> (L.) O.K.	111
<i>Alstonia scholaris</i> (L.) R. Br. var. <i>scholaris</i>	100	<i>Anneslea fragrans</i> Wall.	67
<i>Alternanthera paronichyoides</i> St. Hil.	112	Annonaceae	63
<i>Alternanthera pungens</i> H. B. K.	112	<i>Anodendron paniculatum</i> A. DC.	38
<i>Alternanthera repens</i> (L.) O.K.	112	<i>Anodendron suteppense</i> Kerr	38
<i>Alternanthera sessilis</i> (L.) DC. var. <i>sessilis</i>	112	<i>Anoectochilus brevistylus</i> (Hk. f.) Ridl.	132
<i>Alysicarpus bupleurifolius</i> (L.) DC.	78	<i>Anoectochilus elwesii</i> (Cl. ex Hk. f.) King & Pantl.	132
<i>Alyxia siamensis</i> Craib	100	<i>Anoectochilus molummeinensis</i> (Par. & Rchb. f.) Seid.	39
<i>Amalocalyx microlobus</i> Pierre ex Spire	101	<i>Anoectochilus multiflorus</i> Rol. ex Dow.	39
Amaranthaceae	112	<i>Anoectochilus repens</i> (Dow.) Seid. & Smit.	133
<i>Amaranthus gracilis</i> Desf.	112	<i>Anoectochilus siamensis</i> Schltr.	133
<i>Amaranthus spinosus</i> L.	112	<i>Anoectochilus tortus</i> (King & Pantl.) King & Pantl.	133
<i>Amaranthus viridis</i> L.	112	<i>Anogeissus acuminata</i> (Roxb. ex DC.) Guill. & Perr.	85
Amaryllidaceae	129	<i>Anomianthus dulcis</i> (Dun.) Sincl.	63
<i>Amischotolype glabrata</i> (Kunth) Hassk.	125	<i>Anthocephalus chinensis</i> (Lmk.) A. Rich. ex Walp.	90
<i>Amischotolype mollissima</i> (Bl.) Hassk. forma <i>mollissima</i>	125	<i>Anthogonium gracile</i> Wall. ex Lindl.	133
<i>Ammannia baccifera</i> L.	86	<i>Antidesma acidum</i> Retz.	116
<i>Amomum koenigii</i> Gmel.	126	<i>Antidesma bunius</i> (L.) Spreng.	116
<i>Amomum ovoideum</i> Pierre ex Gagnep.	126	<i>Antidesma colletii</i> Craib	116
<i>Amomum repoense</i> Pierre ex Gagnep.	126	<i>Antidesma ghaesembilla</i> Gaertn.	116
<i>Amomum siamense</i> Craib	127	<i>Antidesma kerrii</i> Craib	38
<i>Amomum</i> sp.	127	<i>Antidesma montanum</i> Bl.	116
<i>Amomum</i> sp.	127	<i>Antidesma sootepense</i> Craib	116
<i>Amorphophallus corrugatus</i> N. E. Br.	130	<i>Antrophyum callifolium</i> Bl.	150
<i>Amorphophallus kerrii</i> N. E. Br.	130	<i>Antrophyum parvulum</i> Bl.	150
<i>Amorphophallus</i> aff. <i>koratensis</i> Gagnep.	130	<i>Antrophyum winitii</i> Tag. & K. Iw.	150
<i>Amorphophallus krausei</i> Engl.	130	<i>Aphaenandra uniflora</i> (Wall. ex G. Don) Brem.	90
<i>Amorphophallus longituberosus</i> (Engl.) Engl. & Gehrm.	130	<i>Aphanamixis polystachya</i> (Wall.) R. Parker	72
<i>Amorphophallus longituberosus</i> (Engl.) Engl. & Gehrm. var. <i>robustus</i> Hu	130	<i>Aphanamixis</i> sp.	72
<i>Amorphophallus macrorrhizus</i> Craib	130	<i>Aphyllorchis caudata</i> Rol. ex Dow.	133
<i>Amorphophallus paeoniifolius</i> (Denn.) Nichol.	130	<i>Aphyllorchis montana</i> Rchb. f.	133
<i>Amorphophallus yunnanensis</i> Engl.	130	<i>Aphyllorchis unguiculata</i> Rol. ex Dow.	133
<i>Ampelocalamus patellaris</i> (Gamb. emend. Stap.) Stap.	146	<i>Apium graveolens</i> L.	52
<i>Ampelocissus martinii</i> Planch.	74	<i>Apluda mutica</i> L.	142
<i>Ampelocissus</i> sp.	74	<i>Apocypis courtallumensis</i> (Steud.) Henr.	142
<i>Amphineuron terminans</i> (Hk.) Holtt.	152	Apocynaceae	100
<i>Ampylotropis pinetorum</i> (Kurz) Schindl.	82	<i>Apodytes dimidiata</i> E. Mey. ex Arn.	73
Anacardiaceae	76	<i>Apois carnea</i> (Wall.) Bth. ex Baker	78
<i>Anacolosa ilicoides</i> Mast.	73	<i>Aporusa villosa</i> (Lindl.) Baill.	116
<i>Ananas comosus</i> (L.) Merr.	53	<i>Aporusa wallichii</i> Hk. f.	117
<i>Anaphalis adnata</i> DC.	94	<i>Apostasia wallichii</i> R. Br.	132
<i>Anaphalis margaritacea</i> (L.) Bth. & Hk. f.	94	Apostasiaceae	132
<i>Andrographis laxiflora</i> (Bl.) Lindau	107	Aquifoliaceae	73
<i>Andrographis paniculata</i> (Burm. f.) Nees	107	<i>Aquilaria crassna</i> Pierre ex Lec.	115
<i>Andropogon chinensis</i> (Nees) Merr.	142	Araceae	129
<i>Aneilema discretum</i> Craib	125	<i>Arachniodes henryi</i> (Christ) Ching	151
<i>Aneilema divergens</i> Cl.	125	<i>Araistegia dareiformis</i> (Hk.) Copel.	149
<i>Aneilema herbaceum</i> (Roxb.) Wall. ex Kunth	125	<i>Araistegia pulchra</i> (D. Don) Copel.	149
<i>Aneilema ovatum</i> (Hassk.) Wall. ex Cl.	125	<i>Aralia montana</i> Bl.	89
<i>Aneilema scaberrimum</i> (Bl.) Kunth	125	Araliaceae	89
		<i>Archidendron clypearia</i> (Jack) Niels. ssp. <i>clypearia</i>	77
		var. <i>clypearia</i>	
		<i>Archidendron glomeriflorum</i> (Kurz) Niels.	77

<i>Ardisia arborescens</i> Wall. ex DC.	98	<i>Aspidistra sutepensis</i> K. Lar.	128
<i>Ardisia attenuata</i> Wall. ex A. DC.	98	<i>Aspidopterys nutans</i> (Roxb. ex DC.) Juss.	71
<i>Ardisia corymbifera</i> Mez var. <i>corymbifera</i>	98	<i>Aspidopterys tomentosa</i> (Bl.) Juss.	71
<i>Ardisia crenata</i> Sims var. <i>crenata</i>	98	Aspleniaceae	150
<i>Ardisia crispa</i> (Thunb.) A.DC. var. <i>crispa</i>	98	<i>Asplenium apogamum</i> Mur. & Hat.	150
<i>Ardisia garrettii</i> Flet.	98	<i>Asplenium bilabiatum</i> Mur. & Cheng	150
<i>Ardisia kerrii</i> Craib	98	<i>Asplenium cheilosorum</i> O.K. ex Mett.	150
<i>Ardisia maculosa</i> Mez	98	<i>Asplenium crinicaule</i> Hance	150
<i>Ardisia villosa</i> Roxb.	98	<i>Asplenium ensiforme</i> Wall. ex Hk. & Grev.	150
<i>Ardisia virens</i> Kurz	98	<i>Asplenium excisum</i> Presl	150
<i>Areca laosensis</i> Becc.	132	<i>Asplenium macrophyllum</i> Sw.	150
<i>Argostemma ebracteolatum</i> Gedd.	90	<i>Asplenium nidus</i> L. var. <i>nidus</i>	151
<i>Argostemma khasianum</i> Cl.	90	<i>Asplenium obscurum</i> Bl.	151
<i>Argostemma pubescens</i> Gedd.	90	<i>Asplenium rockii</i> C. Chr.	151
<i>Argostemma stellatum</i> Gedd.	38	<i>Asplenium yoshinagae</i> Mak.	151
<i>Argostemma verticillatum</i> Wall.	90	<i>Asystasia hispida</i> Imlay	107
<i>Argyreia aggregata</i> (Roxb.) Choisy	103	<i>Asystasia kerrii</i> Craib	108
<i>Argyreia capitiformis</i> (Poir.) Oost.	103	<i>Asystasia salicifolia</i> Craib var. <i>salicifolia</i>	108
<i>Argyreia henryi</i> (Craib) Craib	103	<i>Asystasiella neesiana</i> (Wall.) Lindau	108
<i>Argyreia kerrii</i> Craib	103	<i>Atherolepis pierrei</i> Cost. var. <i>glabra</i> Kerr	101
<i>Argyreia oblecta</i> (Choisy) Cl.	103	Athyriaceae	152
<i>Argyreia osyrensis</i> (Roth) Choisy	103	<i>Athyrium anisopterum</i> Christ	152
<i>Argyreia wallichii</i> Choisy	103	<i>Athyrium cumingianum</i> (Presl) Ching	152
<i>Arisaema album</i> N.E. Br.	130	<i>Athyrium dissitifolium</i> (Bak.) C. Chr.	152
<i>Arisaema cuspidatum</i> (Roxb.) Engl.	130	<i>Azolla pinnata</i> R. Br.	154
<i>Arisaema erubescens</i> (Wall.) Schott	130	Azollaceae	154
<i>Arisaema hypoglaucum</i> Craib	130	<i>Baccaurea ramiflora</i> Lour.	117
<i>Arisaema kerrii</i> Craib	130	<i>Balakata baccata</i> (Roxb.) Ess.	117
<i>Arisaema praseri</i> Hk. f.	130	<i>Balanophora abbreviata</i> Bl.	116
<i>Arisaema sootepensis</i> Craib	130	<i>Balanophora fungosa</i> J.R. & G. Forst. ssp. <i>indica</i>	116
<i>Aristida chinensis</i> Munro	142	(Arn.) B. Han. var. <i>indica</i>	
<i>Aristida cumingiana</i> Trin. & Rupr.	142	<i>Balanophora latisepala</i> (Tiegh.) Lec.	116
<i>Aristolochia grandis</i> Craib	113	<i>Balanophora laxiflora</i> Hemsl.	116
<i>Aristolochia kerrii</i> Craib	113	Balanophoraceae	16
<i>Aristolochia pierrei</i> Lec.	113	<i>Baliospermum montanum</i> (Willd.) M.-A.	117
<i>Aristolochia tagala</i> Cham.	113	<i>Baliospermum siamense</i> Craib	117
<i>Aristolochia versicolor</i> Hwang	113	Balsaminaceae	71
Aristolochiaceae	113	<i>Bambusa bambos</i> (L.) Voss. ex Vilm.	146
<i>Artabotrys</i> sp.	63	<i>Bambusa burmanica</i> Griff.	146
<i>Artemisia indica</i> Willd.	94	<i>Bambusa griffithiana</i> Munro	146
<i>Arthraxon castratus</i> (Griff.) Nara. ex Bor	142	<i>Bambusa membranacea</i> (Munro) Stap. & Xia	146
<i>Arthraxon lancifolius</i> (Trin.) Hochr.	142	<i>Bambusa pallida</i> Munro	146
<i>Arthromeris amplexifolia</i> (Christ) Ching	153	<i>Bambusa tulda</i> Roxb.	146
<i>Artocarpus heterophyllus</i> Lmk.	53	<i>Bambusa vulgaris</i> Schrad. ex Wend. var. <i>striata</i>	146
<i>Artocarpus gomezianus</i> Wall. ex Trec.	120	(Lodd. ex Penny) Gamb.	
<i>Artocarpus lakoocha</i> Roxb.	120	<i>Bambusa vulgaris</i> Schrad. ex Wend. var. <i>vulgaris</i>	146
<i>Artocarpus lanceolata</i> Trec.	120	<i>Barleria cristata</i> L.	108
<i>Arundina graminifolia</i> (D. Don) Hochr.	131, 159	<i>Barleria siamensis</i> Craib	108
<i>Arundinella bengalensis</i> (Spr.) Druce	142	<i>Barleria strigosa</i> Willd.	108
<i>Arundinella nepalensis</i> Trin.	142	<i>Basella alba</i> L.	112
<i>Arundinella setosa</i> Trin. var. <i>setosa</i>	142	Basellaceae	112
Asclepiadaceae	101	<i>Bauhinia bracteata</i> (Grah. ex Bth.) Bak. ssp. <i>bracteata</i>	77
<i>Ascochilus loratus</i> Rol. ex Dow.	138	<i>Bauhinia glauca</i> (Wall. ex Bth.) Bth. ssp. <i>tenuiflora</i>	77
<i>Ascolepis dispacoides</i> (Schumach.) J. Ray. ssp.	141	(Watt ex Cl.) K. & S.S. Lar.	
<i>siamensis</i> (Cl.) J. Ray.		<i>Bauhinia hirsuta</i> Weinm.	77
<i>Ascotainia siamensis</i> Rol. ex Dow.	138	<i>Bauhinia ornata</i> Kurz var. <i>kerrii</i> (Gagnep.)	77
<i>Asparagus filicinus</i> Ham. ex D. Don	128	K. & S.S. Lar.	
<i>Aspidistra longifolia</i> Hk. f.	128	<i>Bauhinia purpurea</i> L.	77

<i>Bauhinia racemosa</i> Lmk.	77	<i>Boehmeria zollingeriana</i> Wedd.	122
<i>Bauhinia variegata</i> L.	77	<i>Boerhavia diffusa</i> L.	112
<i>Bauhinia viridescens</i> Desv. var. <i>viridescens</i>	77	<i>Boesenbergia longiflora</i> (Wall.) O.K.	127
<i>Begonia acetosella</i> Craib	88	<i>Boesenbergia longipes</i> (King & Prain) Schltr.	127
<i>Begonia aptera</i> Bl.	88	<i>Boesenbergia rotunda</i> (L.) Mansf.	127
<i>Begonia discreta</i> Craib	38	<i>Bolbitis appendiculata</i> (Willd.) K. Iwats.	151
<i>Begonia integrifolia</i> Dalz.	88	<i>Bolbitis heteroclita</i> (Presl) Ching ex C. Chr.	151
<i>Begonia laciniata</i> Roxb. var. <i>laciniata</i>	88	<i>Bolbitis hookeriana</i> K. Iw.	151
<i>Begonia martabanica</i> A. DC.	88	<i>Bolbitis scalpturata</i> (Fee) Ching	151
<i>Begonia siamensis</i> Gagnep.	88	<i>Bolbitis sinensis</i> (Bak.) K. Iw. var. <i>sinensis</i>	151
<i>Begonia</i> aff. <i>sinensis</i> A. DC.	88	<i>Bolbitis virens</i> (Wall. ex Hk. & Grev.)	151
<i>Begonia sootepensis</i> Craib	89	Schott var. <i>virens</i>	
<i>Begonia yunnanensis</i> Lev.	89	Bombacaceae	69
Begoniaceae	88	<i>Bombax anceps</i> Pierre var. <i>anceps</i>	69
<i>Beilschmiedia</i> aff. <i>intermedia</i> Allen	114	<i>Bombax ceiba</i> L.	69
<i>Beilschmiedia</i> aff. <i>percoriacea</i> Allen var.	114	<i>Bombax kerrii</i> Craib	69
<i>ciliata</i> H.W. Li		<i>Bombax malabaricum</i> DC.	69
<i>Belosynapsis ciliata</i> (Bl.) R. Rao	125	Boraginaceae	103
<i>Belvisia henryi</i> (Hieron. ex C. Chr.) Ray.	153	<i>Borreria alata</i> (Aubl.) DC.	90
Berberidaceae	65	<i>Borreria brachystema</i> (R. Br. ex Bth.) Valet.	90
<i>Berchemia floribunda</i> (Wall.) Wall. ex Brongn.	74	<i>Borreria laevis</i> (Lmk.) Griseb.	90
<i>Berrya mollis</i> Wall. ex Kurz	70	<i>Borreria repens</i> DC.	90
<i>Betula alnoides</i> Ham. ex D. Don	123	<i>Bothriochloa bladhii</i> (Retz.) S.T. Blake	142
Betulaceae	123	<i>Bougainvillea spectabilis</i> Willd.	53
<i>Bidens pilosa</i> L. var. <i>minor</i> (Bl.) Sherff	94	<i>Brachiaria distachya</i> (L.) Stapf	146
Bignoniaceae	107	<i>Brachiaria ramosa</i> (L.) Stapf	142
<i>Biophytum petersianum</i> Klot.	71	<i>Brachycorythis helferi</i> (Rchb. f.) Summ.	133
<i>Biophytum reinwardtii</i> (Zucc.) Klot.	71	<i>Brachycorythis henryi</i> (Schltr.) Summ.	133
<i>Biophytum sensitivum</i> (L.) DC.	71	<i>Brachystelma kerrii</i> Craib	38
<i>Biophytum umbraculum</i> Welw.	71	<i>Brainea insignis</i> (Hk.) J. Sm.	151
<i>Bischofia javanica</i> Bl.	117	<i>Brassica juncea</i> (L.) Czern.	65
Blechnaceae	151	<i>Brassica oleria</i> L. var. <i>capitata</i> L.	52
<i>Blechnum orientale</i> L.	151	<i>Brassica rapa</i> L.	52
<i>Blinkworthia lycioides</i> Choisy	103	<i>Brassiopsis ficifolia</i> Dunn	89
<i>Blumea balsamifera</i> (L.) DC.	94	<i>Brassiopsis glomerulata</i> (Bl.) Regel	89
<i>Blumea clarkei</i> Hk. f.	94	<i>Breynia fruticosa</i> (L.) Hk. f.	117
<i>Blumea fistulosa</i> (Roxb.) Kurz	94	<i>Breynia glauca</i> Craib	117
<i>Blumea gardneri</i> (Hk. f.) Gagnep.	94	<i>Bridelia affinis</i> Craib	117
<i>Blumea hossei</i> Craib ex Hoss.	38	<i>Bridelia glauca</i> Bl. var. <i>glauca</i>	117
<i>Blumea lacera</i> (Burm. f.) DC.	94	<i>Bridelia pierrei</i> Gagnep.	117
<i>Blumea laciniata</i> (Roxb.) DC.	94	<i>Bridelia pubescens</i> Kurz	117
<i>Blumea lanceolaria</i> (Roxb.) Druce var. <i>spectabilis</i>	94	<i>Bridelia retusa</i> (L.) A. Juss.	117
(DC.) Rand.		<i>Bridelia stipularis</i> (L.) Bl.	117
<i>Blumea membranacea</i> DC. var. <i>membranacea</i>	94	<i>Bridelia tomentosa</i> Bl.	117
<i>Blumea mollis</i> (D. Don) Merr.	94	<i>Bromheadia aporoides</i> Rchb. f.	133
<i>Blumea napifolia</i> DC.	94	<i>Broussonetia kurzii</i> (Hk. f.) Corn.	120
<i>Blumea sessiliflora</i> Denc.	94	<i>Broussonetia papyrifera</i> (L.) Vent.	120
<i>Blumeopsis flava</i> (DC.) Gagnep.	94	<i>Brucea javanica</i> (L.) Merr.	72
<i>Boea kerrii</i> Craib	107	<i>Brucea mollis</i> Wall. ex Kurz	72
<i>Boehmeria chiangmaiensis</i> Yaha.	122	<i>Buchanania glabra</i> Wall. ex Hk. f.	76
<i>Boehmeria clidemioides</i> Miq. var. <i>clidemioides</i>	122	<i>Buchanania lanzan</i> Spreng.	76
<i>Boehmeria diffusa</i> Wedd.	122	<i>Buchanania latifolia</i> Roxb.	76
<i>Boehmeria hamiltoniana</i> Wall. ex Wedd.	122	<i>Buchnera cruciata</i> B.–H. ex D. Don var. <i>cruciata</i>	105
<i>Boehmeria macrophylla</i> D. Don	122	<i>Buddleja asiatica</i> Lour.	103
<i>Boehmeria malabarica</i> Wall. ex Wedd.	122	<i>Buettneria integrifolia</i> Lace	69
<i>Boehmeria pilosiuscula</i> (Bl.) Hassk.	122	<i>Buettneria siamensis</i> Craib	69
<i>Boehmeria pseudotomentosa</i> Yaha.	122	<i>Bulbophyllum bittnerianum</i> Schltr.	133
<i>Boehmeria thailandica</i> Yaha.	122	<i>Bulbophyllum bractescens</i> Rol. ex Kerr	133

<i>Bulbophyllum chlorostachys</i> Schltr.	133	<i>Canscora diffusa</i> (Vahl) G. Don	103
<i>Bulbophyllum congestum</i> Rol.	133	<i>Cansjera rheedii</i> J.F. Gmel.	116
<i>Bulbophyllum craibianum</i> Kerr	39	<i>Canthium glabrum</i> Bl.	90
<i>Bulbophyllum dixonii</i> Rol.	133	<i>Canthium parvifolium</i> Roxb.	90
<i>Bulbophyllum hirtum</i> (J.E. Sm.) Lindl.	39	<i>Canthium umbellatum</i> Wight	90
<i>Bulbophyllum kerrii</i> Rol.	39	<i>Capillipedium assimile</i> (Steud.) A. Camus	142
<i>Bulbophyllum morphologorum</i> Krzl.	133	<i>Capillipedium parviflorum</i> (R. Br.) Stapf	142
<i>Bulbophyllum nigrescens</i> Rol.	133	Capparaceae	65
<i>Bulbophyllum propinquum</i> Krzl.	133	<i>Capparis disticha</i> Kurz	65
<i>Bulbophyllum retusiusculum</i> Rchb. f.	133	<i>Capparis kerrii</i> Craib	65
<i>Bulbophyllum secundum</i> Hk. f.	133	<i>Capparis pyrifolia</i> Lmk.	65
<i>Bulbophyllum suavissimum</i> Rol.	133	<i>Capparis sepiaria</i> L.	65
<i>Bulbophyllum sutepense</i> (Rol.) Seid. & Smit.	39	Caprifoliaceae	90
<i>Bulbophyllum thaiorum</i> J.J. Sm.	39	<i>Capsicum annuum</i> L.	53
<i>Bulbostylis barbata</i> (Rottb.) Cl.	138	<i>Capsicum</i> aff. <i>chamaecerasus</i> Nees	104
<i>Bulbostylis densa</i> (Wall.) Hand.-Mazz.	138	<i>Carallia brachiata</i> (Lour.) Merr.	85
<i>Burmanna coelestis</i> D. Don	132	Cardiopteridaceae	73
<i>Burmanna wallichii</i> (Miers) Hk. f.	132	<i>Cardiopteris quinqueloba</i> (Hassk.) Hassk.	73
Burmanniaceae	132	<i>Carex baccans</i> Nees	138
Burseraceae	72	<i>Carex commixta</i> Steud.	138
<i>Butea monosperma</i> (Lmk.) Taub.	78	<i>Carex condensata</i> Ness	138
Butomaceae	125	<i>Carex continua</i> Cl.	138
<i>Byttneria aspera</i> Colebr.	69	<i>Carex cruciata</i> Wahl.	138
<i>Byttneria pilosa</i> Roxb.	69	<i>Carex doisutepensis</i> T. Koy.	138
<i>Caesalpinia cucullata</i> Roxb.	78	<i>Carex filicina</i> Nees	139
<i>Caesalpinia digyna</i> Rottl.	78	<i>Carex horsfieldii</i> Boott	139
<i>Caesalpinia furfuracea</i> (Prain) Hatt.	78	<i>Carex indica</i> L. var. <i>indica</i>	139
<i>Caesalpinia hymenocarpa</i> (Prain) Hatt.	78	<i>Carex indica</i> L. var. <i>microcarpa</i> T. Koy.	139
<i>Caesalpinia mimosoides</i> Lmk.	78	<i>Carex perakensis</i> Cl.	139
<i>Caesalpinia sappan</i> L.	78	<i>Carex phacota</i> Spreng.	139
<i>Cajanus cajan</i> (L.) Millsp.	78	<i>Carex plagiostoma</i> Nelmes	139
<i>Cajanus crassus</i> (Prain ex King) Maes. var. <i>crassus</i>	78	<i>Carex plesiocephala</i> Turr.	139
<i>Cajanus goensis</i> Dalz.	78	<i>Carex smitinandii</i> Ray.	138
<i>Cajanus scarabaeoides</i> (L.) du P.-T. var. <i>scarabaeoides</i>	78	<i>Carex speciosa</i> Kunth ssp. <i>latifolia</i> T. Koy.	139
<i>Cajanus volubilis</i> (Blanco) Blanco	79	<i>Carex speciosa</i> Kunth ssp. <i>speciosa</i>	139
<i>Calamus arborescens</i> Griff.	132	<i>Carex tricephala</i> Boeck.	139
<i>Calamus kerrianus</i> Becc.	132	<i>Careya arborea</i> Roxb.	86
<i>Calanthe cardioglossa</i> Schltr.	133	<i>Carica papaya</i> L.	53
<i>Calanthe clavata</i> Lindl.	133	<i>Carissa cochinchinensis</i> Pierre ex Pit.	101
<i>Calanthe hosseusiana</i> Krzl.	133	<i>Carissa spinarum</i> L.	101
<i>Calanthe triplicata</i> (Willem.) Ames	133	<i>Carpinus londoniana</i> Wink.	123
<i>Callicarpa arborea</i> Roxb. var. <i>arborea</i>	109	<i>Caryatia tenuifolia</i> (Wight & Arn.) Gagnep.	123
<i>Callicarpa rubella</i> Lindl.	109	Caryophyllaceae	66
<i>Calophyllum polyanthum</i> Wall. ex Pl. & Tr.	66	<i>Casearia flexuosa</i> Craib	67
<i>Calycopteris floribunda</i> (Roxb.) Lmk.	85	<i>Casearia graveolens</i> Dalz.	67
<i>Camchaya eberhardtii</i> (Gagnep.) Kit.	94	<i>Casearia grewiifolia</i> Vent. var. <i>gelonioides</i> (Bl.) Sleum.	67
<i>Camellia connata</i> (Craib) Craib	38	<i>Casearia grewiifolia</i> Vent. var. <i>grewiifolia</i>	67
<i>Camellia oleifera</i> Abel var. <i>confusa</i> (Craib) Sealy	67	<i>Casearia kerrii</i> Craib	67
<i>Camellia sinensis</i> (L.) O.K. var. <i>assamica</i> (Mast.) Kita.	67	<i>Cassia bakeriana</i> Craib	78
Campanulaceae	97	<i>Cassia fistula</i> L.	78
<i>Campylotropis parviflora</i> (Kurz) Schindl.	82	<i>Cassia leschenautiana</i> (DC.) Degener	78
<i>Canarium kerrii</i> Craib	72	<i>Cassia spectabilis</i> DC.	78
<i>Canarium subulatum</i> Guill.	72	<i>Cassia tora</i> L.	78
<i>Canavalia ensiformis</i> (L.) A. DC.	79	<i>Castanopsis acuminatissima</i> (Bl.) A. DC.	123
<i>Canavalia virosa</i> (Roxb.) Wight & Arn.	79	<i>Castanopsis argyrophylla</i> King ex Hk. f.	123
<i>Canna hybrida</i> Hort. ex Back	53	<i>Castanopsis armata</i> (Roxb.) Spach	123
<i>Cannabis sativa</i> L.	52	<i>Castanopsis diversifolia</i> (Kurz) King ex Hk. f.	124
<i>Canscora decussata</i> (Roxb.) Schult.	103	<i>Castanopsis indica</i> (Roxb.) A. DC.	124

<i>Castanopsis rockii</i> A. Camus	124	<i>Chonemorpha verrucosa</i> (Bl.) D. J. Midd.	101
<i>Castanopsis tribuloides</i> (Sm.) A. DC.	124	<i>Choresthes lanceolaria</i> (T. And.) B. Han.	107
<i>Catunaregam longispina</i> (Roxb. ex Link) Tirv.	90	<i>Choresthes racemiflora</i> Brem. var. <i>racemiflora</i>	107
<i>Catunaregam spathulifolia</i> Tirv.	90	<i>Christella arida</i> (D. Don) Holtt.	152
<i>Catunaregam tomentosa</i> (Bl. ex DC.) Tirv.	90	<i>Christella crinipes</i> (Hk.) Holtt.	152
<i>Cayratia japonica</i> (Thunb.) Gagnep.	74	<i>Christella cylindrothrix</i> (Rosenst.) Holtt.	152
<i>Cayratia pedata</i> (Lour.) Juss.	74	<i>Christella dentata</i> (Forssk.) Bro. & Jer.	152
<i>Cayratia trifolia</i> (L.) Dom. var. <i>cinerea</i> (Lmk.) Gagnep.	74	<i>Christella hispidula</i> (Decne.) Holtt.	152
<i>Cayratia</i> sp.	74	<i>Christella parasitica</i> (L.) Lev.	152
<i>Ceiba pentandra</i> (L.) Gaertn.	53	<i>Christella subelata</i> (Bak.) Holtt.	152
Celastraceae	73	<i>Christia obcordata</i> (Poir.) Bakh. f. var. <i>obcordata</i>	79
<i>Celastrus monospermus</i> Roxb.	73	<i>Chromolaena odorata</i> (L.) R. M. King & H. Rob.	95
<i>Celastrus paniculatus</i> Willd.	73	<i>Chrysoglossum ornatum</i> Bl.	133
<i>Celtis tetrandra</i> Roxb.	120	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	143
<i>Celtis timorensis</i> Span.	120	<i>Chrysopogon zizanioides</i> (L.) Roberty	143
<i>Cenchrus brownii</i> Roem. & Schult.	143	<i>Chukrasia tabularis</i> A. Juss.	72
<i>Centella asiatica</i> (L.) Urb.	89	<i>Chukrasia velutina</i> (M. Roem.) C. DC.	72
<i>Centotheca lappacea</i> (L.) Desv. var. <i>lappacea</i>	143	<i>Cinchona pubescens</i> Vahl	91
<i>Centranthera cochinchinensis</i> (Lour.) Merr. ssp.	105	<i>Cinnamomum camphora</i> (L.) Nees & Eberm.	114
<i>lutea</i> (Hara) Yama.		<i>Cinnamomum caudatum</i> Nees	114
<i>Centrosema pubescens</i> Bth.	79	<i>Cinnamomum iners</i> Reinw. ex Bl.	114
<i>Cephaelis siamica</i> Craib	93	<i>Cinnamomum longipetiolatum</i> H. W. Li	114
<i>Cephalostachyum pergracile</i> Munro	147	<i>Cipadessa baccifera</i> (Roth) Miq.	72
Cephalotaxaceae	147	<i>Cirrhopetalum papillosum</i> Rol.	39
<i>Cephalotaxus griffithii</i> Hk. f.	147	<i>Cirrhopetalum retusiusculum</i> (Rchb. f.) Hemsl.	133
<i>Ceratopteris thalictroides</i> (L.) Brongn.	149	<i>Cissampelopsis cordifolia</i> C. Jeff. & Y. L. Chen	94
<i>Ceratostylis siamensis</i> Rol. ex Dow.	39	<i>Cissampelos hispida</i> Forrman	64
<i>Ceriscoides sessiliflora</i> (Kurz) Tirv.	90	<i>Cissampelos pareira</i> L. var. <i>hirsuta</i> (B.-H. ex DC.)	64
<i>Ceriscoides turgida</i> (Roxb.) DC.	90	Forrman	
<i>Ceropegia sootepensis</i> Craib	107	<i>Cissus adnata</i> Roxb.	74
<i>Chamaecrista leschenaultiana</i> (DC.) Degener	78	<i>Cissus assamica</i> (Laws.) Craib	74
<i>Cheilanthes belangeri</i> (Bory) C. Chr.	150	<i>Cissus discolor</i> Bl. var. <i>discolor</i>	74
<i>Cheilanthes pseudofarinosa</i> (Ching & S. K. Wu) K. Iw.	150	<i>Cissus hastata</i> Miq.	74
<i>Cheilanthes tenuifolia</i> (Burm. f.) Sw.	150	<i>Cissus repanda</i> Vahl	74
<i>Cheirostylis griffithii</i> Lindl.	133	<i>Cissus repens</i> Lmk.	74
Chenopodiaceae	112	<i>Citrullus lanatus</i> (Thunb.) Mats. & Nakai	53
<i>Chenopodium ficifolium</i> Sm.	131	<i>Citrus grandis</i> (L.) Osb.	53
<i>Chiloschista parishii</i> Seid.	112	<i>Citrus limon</i> (L.) Burm.f.	53
<i>Chionanthus mala-elengi</i> (Dennst.) P. S. Green ssp.	100	<i>Clausena excavata</i> Burm. f. var. <i>excavata</i>	71
<i>terniflorus</i> (Wall. ex G. Don) P. S. Green		<i>Clausena excavata</i> Burm. f. var. <i>villosa</i> Hk. f.	71
<i>Chionanthus ramiflorus</i> Roxb.	100	<i>Clausena lenis</i> Drake	71
<i>Chionanthus sutebensis</i> (Kerr) P. S. Green	100	<i>Cleidion spiciflorum</i> (Burm. f.) Merr.	117
<i>Chirita anachoreta</i> Hance	106	<i>Cleisomeria lanata</i> (Lindl.) Lindl.	133
<i>Chirita brevipes</i> Cl.	106	<i>Cleisostoma arietinum</i> (Rchb. f.) Garay	133
<i>Chirita hamosa</i> Wall. ex R. Br.	106	<i>Cleisostoma duplicilodum</i> (J.J. Sm.) Garay	39
<i>Chirita hamosa</i> Wall. ex R. Br. var. <i>unifolia</i> Cl.	106	<i>Cleisostoma filiforme</i> (Lindl.) Garay	133
<i>Chirita micromusa</i> Burt	106	<i>Cleisostoma fuerstenbergianum</i> Krzl.	133
<i>Chirita pumila</i> D. Don	106	<i>Cleisostoma racemiferum</i> (Lindl.) Garay	133
Chloranthaceae	113	<i>Cleisostoma rolfeanum</i> (King & Pantl.) Garay	134
<i>Chloranthus erectus</i> (B.-H.) Verd.	113	<i>Cleistanthus hirsutulus</i> Hk. f.	117
<i>Chloranthus nervosus</i> Coll. & Hemsl.	113	<i>Clematis acuminata</i> DC. var. <i>sikkimensis</i> Hk. f. & Th.	63
<i>Chloris barbata</i> Sw.	143	<i>Clematis buchananiana</i> DC.	63
<i>Chloris dolichostachya</i> Lag.	143	<i>Clematis eichleri</i> (M. Tam.) M. Tam.	63
<i>Chloris virgata</i> Sw.	143	<i>Clematis siamensis</i> Drum. & Craib	63
<i>Chlorophytum intermedium</i> Craib var. <i>intermedium</i>	128	<i>Clematis sikkimensis</i> (Hk. f. & Th.) Drum. ex Burk.	63
<i>Chlorophytum orchidastrum</i> Lindl.	128	<i>Clematis smilacifolia</i> Wall.	63
<i>Choerospondias axillaris</i> (Roxb.) Burt & Hill	76	<i>Clematis smilacifolia</i> Wall. var. <i>angustifolia</i> M. Tam.	63
<i>Chonemorpha megacalyx</i> Pierre ex Spire	101	<i>Clematis subpeltata</i> Wall.	63

<i>Clematis subumbellata</i> Kurz	63	<i>Conyza japonica</i> (Thunb.) Less. ex DC.	94
<i>Cleome ruditosperma</i> DC.	65	<i>Conyza leucantha</i> (D. Don) Lud. & Rav.	94
<i>Cleome viscosa</i> L.	65	<i>Conyza stricta</i> Willd. var. <i>pinnatifida</i> (D. Don) Kitam.	95
<i>Clerodendrum disparifolium</i> Bl.	110	<i>Conyza sumatrensis</i> (Retz.) Walk.	95
<i>Clerodendrum fragrans</i> (Vent.) Willd.	110	<i>Corchorus aestuans</i> L.	70
<i>Clerodendrum garrettianum</i> Craib	110	<i>Cordia mhaya</i> Kerr	103
<i>Clerodendrum glandulosum</i> Colebr. ex Lindl.	110	Cornaceae	89
<i>Clerodendrum infortunatum</i> L.	110	<i>Cornopteris opaca</i> (D. Don.) Tag.	152
<i>Clerodendrum paniculatum</i> L.	110	<i>Costus globosus</i> Bl. (var. <i>globosus</i>)	127
<i>Clerodendrum serratum</i> (L.) Moon var. <i>wallichii</i> Cl.	110	<i>Costus speciosus</i> (Koeh.) J.E. Sm.	127
<i>Clitoria macrophylla</i> Wall. ex Bth.	79	<i>Courtoisina cyperoides</i> (L.) Sojak	139
<i>Clitoria mariana</i> L.	79	<i>Craibiodendron stellatum</i> (Pierre) W. W. Sm.	97
<i>Cnestis palala</i> (Lour.) Merr. ssp. <i>palala</i>	76	<i>Crassocephalum crepidioides</i> (Bth.) S. Moore	95
<i>Coccinia grandis</i> (L.) Voigt	87	<i>Crateva magna</i> (Lour.) DC.	65
<i>Cocculus laurifolius</i> DC.	64	<i>Crateva religiosa</i> Forst. f.	65
<i>Codonopsis celebica</i> (Bl.) Thuan	97	<i>Cratoxylum cochinchinense</i> (Lour.) Bl.	66
<i>Codonopsis javanica</i> (Bl.) Hk. f.	97	<i>Cratoxylum formosum</i> (Jack) Dyer ssp. <i>pruniflorum</i> (Kurz) Gog.	66
<i>Codonopsis parviflora</i> Wall. ex A. DC.	97	<i>Cratoxylum maingayi</i> Dyer	66
<i>Coelogyne lentiginosa</i> Lindl.	134	<i>Crepidium acuminatum</i> (D. Don) Szlach.	134
<i>Coelogyne schultesii</i> Jain & Das	134	<i>Crepidium bauritum</i> (Lindl.) Szlach.	134
<i>Coelogyne trinervis</i> Lindl.	134	<i>Crepidium calophyllum</i> (Rchb. f.) Szlach.	134
<i>Coffea canephora</i> Pierre ex Froh. var. <i>robusta</i> (Lind. & De Wildem.) Chev.	53	<i>Crepidium orbicularum</i> (W.W. Sm. & Jeff.) Seid.	134
<i>Coix lacryma-jobi</i> L. var. <i>lacryma-jobi</i>	143	<i>Crepidomanes latealatum</i> (v.d. Bos.) Copel.	148
<i>Colocasia antiquorum</i> Schott	130	<i>Crepis chloroclada</i> Coll. & Hemsl.	95
<i>Colocasia esculenta</i> (L.) Schott	130	<i>Crinum wattii</i> Baker	129
<i>Colocasia fallax</i> Schott	130	<i>Crotalaria acicularis</i> B.-H. ex Bth.	79
<i>Colocasia gigantea</i> (Bl. ex Hassk.) Hk. f.	130	<i>Crotalaria alata</i> D. Don	79
<i>Colocasia kerrii</i> Gagnep	130	<i>Crotalaria albida</i> Hey. ex Roth	79
<i>Colona flagrocarpa</i> (Cl.) Craib	70	<i>Crotalaria assamica</i> Bth.	79
<i>Colona flagrocarpa</i> (Cl.) Craib var. <i>siamica</i> (Craib) Craib	70	<i>Crotalaria bracteata</i> Roxb. ex DC.	79
<i>Colona floribunda</i> (Kurz) Craib	70	<i>Crotalaria dubia</i> Grah. ex Bth.	79
<i>Colquhounia elegans</i> Wall. var. <i>tenuiflora</i> Prain	111	<i>Crotalaria ferruginea</i> Grah. ex Bth.	79
<i>Colubrina pubescens</i> Kurz	74	<i>Crotalaria hossei</i> Craib	79
<i>Colysis pentaphylla</i> (Bak.) Ching	153	<i>Crotalaria kurzii</i> Baker ex Kurz	79
<i>Colysis pothifolia</i> (D. Don) Presl	153	<i>Crotalaria medicaginea</i> Lmk. var. <i>medicaginea</i>	79
Combretaceae	85	<i>Crotalaria neriifolia</i> Wall. ex Bth.	79
<i>Combretum deciduum</i> Coll. & Hemsl.	85	<i>Crotalaria pallida</i> Ait.	79
<i>Combretum griffithii</i> Heur. & M.-A.	85	<i>Crotalaria prostrata</i> Rottl. ex Willd.	79
<i>Combretum latifolium</i> Bl.	85	<i>Crotalaria sessiliflora</i> L.	79
<i>Combretum procursum</i> Craib	85	<i>Crotalaria shanica</i> Lace	79
<i>Combretum punctatum</i> Bl. ssp. <i>punctatum</i>	85	<i>Crotalaria zanzibarica</i> Bth.	79
<i>Combretum punctatum</i> Bl. ssp. <i>squamosum</i> (Roxb. ex G. Don) Exell	85	<i>Croton crassifolius</i> Geisel.	117
<i>Commelina benghalensis</i> L.	125	<i>Croton lachnocarpus</i> Bth.	117
<i>Commelina diffusa</i> Burm. f.	125	<i>Croton oblongifolius</i> Roxb.	117
<i>Commelina longifolia</i> Lmk.	125	<i>Croton robustus</i> Kurz	117
<i>Commelina paludosa</i> Bl.	125	<i>Croton roxburghii</i> N. P. Balakr.	117
<i>Commelina salicifolia</i> Roxb.	125	Cruciferae	65
Commelinaceae	125	<i>Crudasia insignis</i> Prain	79
Compositae	94	<i>Crypsinus cruciformis</i> (Ching) Tag.	153
<i>Congea tomentosa</i> Roxb. var. <i>tomentosa</i>	110	<i>Crypsinus griffithianus</i> (Hk.) Copel.	153
<i>Coniogramme fraxinea</i> (D. Don) Diels var. <i>serrulata</i> (Bl.) Hieron.	150	<i>Crypsinus oxylobus</i> (Wall. ex O.K.) Sledge	153
Connaraceae	76	<i>Crypsinus rhynchophyllus</i> (Hk.) Copel.	153
<i>Connarus semidecandrus</i> Jack	76	<i>Crypteronia paniculata</i> Bl. var. <i>paniculata</i>	87
Convolvulaceae	103	Crypteroniaceae	87
		<i>Cryptocarya amygdalina</i> Nees	114
		<i>Cryptolepis buehneri</i> Roem. & Schult.	101
		<i>Cucumis</i> cf. <i>hystrix</i> Chakr.	87

<i>Cucurbita moschata</i> (Duch. ex Lmk.) Duch. ex Poir.	53	<i>Cyperus elatus</i> L.	139
Cucurbitaceae	87	<i>Cyperus exaltatus</i> Retz.	139
Cupressaceae	147	<i>Cyperus flabelliformis</i> Rottb.	139
<i>Cupressus torulosa</i> D. Don	147	<i>Cyperus flavidus</i> Retz.	139
<i>Curculigo capitulata</i> (Lour.) O.K.	129	<i>Cyperus globosus</i> All.	139
<i>Curculigo gracilis</i> (Kurz) Hk. f.	129	<i>Cyperus haspan</i> L.	139
<i>Curculigo latifolia</i> Dry. ex W.T. Ait. var. <i>latifolia</i>	129	<i>Cyperus haspan</i> L. ssp. <i>juncooides</i> (Lmk.) Kuk.	139
<i>Curcuma aff. comosa</i> Roxb.	127	<i>Cyperus imbricatus</i> Retz.	139
<i>Curcuma ecomata</i> Craib	127	<i>Cyperus involucratus</i> Rottb.	139
<i>Curcuma longa</i> L.	127	<i>Cyperus iria</i> L.	139
<i>Curcuma parviflora</i> Wall.	127	<i>Cyperus kyllingia</i> Endl.	139
<i>Curcuma zedoaria</i> (Berg.) Rosc.	127	<i>Cyperus latus</i> Lmk. var. <i>latus</i>	140
<i>Curcumorpha longiflora</i> (Wall.) Rao. & Verma	127	<i>Cyperus leucocephalus</i> Retz.	140
<i>Cuscuta reflexa</i> Roxb.	104	<i>Cyperus michelianus</i> (L.) Link ssp. <i>pygmaeus</i>	140
<i>Cyanotis axillaris</i> (L.) D. Don	126	(Rottb.) Asch. & Graebn.	
<i>Cyanotis cristata</i> (L.) D. Don	126	<i>Cyperus niveus</i> Retz.	140
<i>Cyathea chinensis</i> Copel.	148	<i>Cyperus nutans</i> Vahl var. <i>eleusinoides</i> (Kunth) Haines	140
<i>Cyathea gigantea</i> (Wall. ex Hk.) Holtt.	148	<i>Cyperus nutans</i> Vahl var. <i>nutans</i>	140
<i>Cyathea podophylla</i> (Hk.) Copel.	148	<i>Cyperus pilosus</i> Vahl	140
Cyatheaceae	148	<i>Cyperus polystachyos</i> Rottb. var. <i>polystachyos</i>	140
<i>Cyathocline purpurea</i> (Ham. ex D. Don) O.K.	95	<i>Cyperus pumilus</i> L. ssp. <i>membranaceus</i> (Vahl) Kuk.	140
Cycadaceae	147	<i>Cyperus pumilus</i> L. ssp. <i>pumilus</i>	140
<i>Cycas micholitzii</i> Dyer var. <i>simplicipinna</i> Smit.	147	<i>Cyperus pygmaeus</i> Rottb.	140
<i>Cycas siamensis</i> Miq.	160	<i>Cyperus rotundus</i> L. ssp. <i>rotundus</i>	140
<i>Cycas pectinata</i> B.-H.	160	<i>Cyperus sesquiflorus</i> (Torr.) Mattf. & Kuk. var.	140
<i>Cycas simplicipinna</i> (Smit.) K.D. Hill	147	subtriceps (Nees) T. Koy.	
<i>Cyclea atjehensis</i> Forman	64	<i>Cyperus sulcinus</i> Cl.	140
<i>Cyclea barbata</i> Miers	64	<i>Cyperus tenuiculmis</i> Boeck.	140
<i>Cyclea ciliata</i> Craib	64	<i>Cyperus unioloides</i> R. Br.	140
<i>Cyclea polypetala</i> Dunn	64	<i>Cyrtococcum accrescens</i> (Trin.) Stapf	143
<i>Cyclea varians</i> Craib	64	<i>Cyrtococcum oxyphyllum</i> (Steud.) Stapf	143
<i>Cyclocarpa stellaris</i> Afz. ex Urb.	79	<i>Cyrtosia nana</i> (Rol. ex Dow.) Garay	134
<i>Cyclosorus interruptus</i> (Willd.) H. Ito	152	<i>Dactyloctenium aegyptium</i> (L.) P. Beauv.	143
<i>Cylista scariosa</i> Roxb.	79	<i>Dalbergia abbreviata</i> Craib	80
<i>Cymbidium aloifolium</i> (L.) Sw.	134	<i>Dalbergia bariensis</i> Pierre	80
<i>Cymbidium dayanum</i> Rehb. f.	134	<i>Dalbergia cana</i> Grah. ex Kurz. var. <i>cana</i>	79
<i>Cymbidium ensifolium</i> (L.) Sw.	134	<i>Dalbergia cultrata</i> Grah. ex Bth.	79
<i>Cymbidium kerrii</i> Rol. ex Dow.	134	<i>Dalbergia discolor</i> Bl. ex Miq.	80
<i>Cymbidium lancifolium</i> Hk.	134	<i>Dalbergia dongnaiensis</i> Pierre	80
<i>Cymbidium siamense</i> Rol. ex Dow.	134	<i>Dalbergia duperreana</i> Pierre	80
<i>Cymbidium sutepense</i> Rol. ex Dow.	134	<i>Dalbergia fusca</i> Pierre	79
<i>Cymbidium tracyanum</i> O' Brien	134	<i>Dalbergia kerrii</i> Craib	79
<i>Cymbopogon citratus</i> (DC.) Stapf	53	<i>Dalbergia lacei</i> Prain	79
<i>Cynanchum corymbosum</i> Wight	101	<i>Dalbergia lakonensis</i> Gagnep. var. <i>appendiculata</i> Craib	80
<i>Cynoctonum mitreola</i> (L.) Britt.	103	<i>Dalbergia lanceolaria</i> L.f. var. <i>errans</i> (Craib) Niyo.	38
<i>Cynodon dactylon</i> (L.) Pers.	143	<i>Dalbergia lanceolaria</i> L.f. var. <i>lakhonensis</i> (Gagnep.) Niyo. & Ho	79
<i>Cynoglossum lanceolatum</i> Forssk.	103	<i>Dalbergia oliveri</i> Gamb. ex Prain	80
Cyperaceae	138	<i>Dalbergia ovata</i> Grah. ex Bth.	80
<i>Cyperus brevifolius</i> (Rottb.) Hassk. var. <i>brevifolius</i>	139	<i>Dalbergia stipulacea</i> Roxb.	80
<i>Cyperus compactus</i> Retz.	139	<i>Dalbergia succirubra</i> Gagnep. & Craib	80
<i>Cyperus compressus</i> L.	139	<i>Dalbergia suthpensis</i> Niyo.	38
<i>Cyperus corymbosus</i> Rottb.	139	<i>Dalbergia velutina</i> Bth. var. <i>succirubra</i> (Gagnep. & Craib) Niyo.	80
<i>Cyperus cuspidatus</i> Kunth	139	<i>Dalbergia velutina</i> Bth. var. <i>velutina</i>	80
<i>Cyperus cyperinus</i> (Retz.) Sur. var. <i>cyperinus</i>	139	<i>Dalbergia volubilis</i> Roxb.	80
<i>Cyperus cyperoides</i> (L.) O.K.	139	<i>Dalechampia elongata</i> Craib	117
<i>Cyperus diffusus</i> Vahl var. <i>diffusus</i>	139	<i>Daphne sureil</i> W.W. Sm. & Cave	115
<i>Cyperus difformis</i> L.	139		
<i>Cyperus distans</i> L.f. var. <i>distans</i>	139		

<i>Daphniphyllum laurinum</i> (Bth.) Baill.	117	<i>Desmodium gyrans</i> (L.f.) DC.	80
<i>Dasyaschalon sootepense</i> Craib	64	<i>Desmodium gyroides</i> (Roxb. ex Link) DC.	80
Datisceae	89	<i>Desmodium heterocarpon</i> (L.) DC. ssp.	80
<i>Davallia trichomanoides</i> Bl. var. <i>lorrainii</i> (Hance) Holtt.	149	<i>angustifolium</i> Oha.	
Davalliaceae	149	<i>Desmodium heterocarpon</i> (L.) DC. ssp.	80
<i>Davallodes membranulosum</i> (Hk.) Copel.	149	<i>heterocarpon</i> var. <i>birmanicum</i> (Watt ex Prain) Oha.	
<i>Debregeasia dentata</i> Hk. f.	122	<i>Desmodium heterocarpon</i> (L.) DC. ssp. <i>heterocarpon</i>	80
<i>Debregeasia longifolia</i> (Burm. f.) Wedd.	122	var. <i>heterocarpon</i>	
<i>Debregeasia squamata</i> King ex Hk. f. forma <i>squamata</i>	122	<i>Desmodium heterocarpon</i> (L.) DC. ssp. <i>heterocarpon</i>	80
<i>Debregeasia velutina</i> Gaud.	122	var. <i>strigosum</i> Mee.	
<i>Decaspermum parviflorum</i> (Lmk.) A. J. Scott	85	<i>Desmodium laxiflorum</i> DC. ssp. <i>laxiflorum</i>	80
ssp. <i>parviflorum</i>		<i>Desmodium longipes</i> Craib	80
<i>Delonix regia</i> (Boj. ex Hk.) Raf.	53	<i>Desmodium megaphyllum</i> Zoll. var. <i>megaphyllum</i>	80
<i>Delphinium altissimum</i> Wall. var. <i>siamense</i>	63	<i>Desmodium motorium</i> (Houtt.) Merr.	80
(Craib) T. Shim.		<i>Desmodium multiflorum</i> DC.	81
<i>Delphinium siamense</i> (Craib) Munz	63	<i>Desmodium oblatum</i> Baker ex Kurz	81
<i>Dendrobium aphyllum</i> (Roxb.) Fischer	134	<i>Desmodium oblongum</i> Wall. ex Bth.	81
<i>Dendrobium cariniferum</i> Rchb. f.	134	<i>Desmodium pulchellum</i> (L.) Bth.	81
<i>Dendrobium christyanthum</i> Rchb. f.	134	<i>Desmodium renifolium</i> (L.) Schindl.	81
<i>Dendrobium compactum</i> Rol. ex W. Hack.	134	<i>Desmodium renifolium</i> (L.) Schindl. var. <i>oblatum</i>	81
<i>Dendrobium crystallinum</i> Rchb. f.	134	(Baker ex Kurz) Oha.	
<i>Dendrobium dixanthum</i> Rchb. f.	134	<i>Desmodium repandum</i> (Vahl) DC.	81
<i>Dendrobium falconeri</i> Hk.	134	<i>Desmodium triangulare</i> (Retz.) Merr.	81
<i>Dendrobium fimbriatum</i> Hk.	134	<i>Desmodium triflorum</i> (L.) DC.	81
<i>Dendrobium gratiosissimum</i> Rchb. f.	134	<i>Desmodium triquetrum</i> (L.) DC. ssp. <i>triquetrum</i>	81
<i>Dendrobium heterocarpum</i> Lindl.	134	<i>Desmodium velutinum</i> (Willd.) DC. ssp. <i>velutinum</i>	81
<i>Dendrobium indivisum</i> (Bl.) Miq. var. <i>lampangense</i>	135	var. <i>velutinum</i>	
Rol. ex Dow.		<i>Desmos dubius</i> (Craib) Craib	64
<i>Dendrobium lindleyi</i> Steud.	134	<i>Desmos dumosus</i> (Roxb.) Saff. var. <i>glabrior</i> Craib	63
<i>Dendrobium moschatum</i> (B.-H.) Sw.	135	<i>Desmos sootepense</i> (Craib) Maxw.	64
<i>Dendrobium ochreatum</i> Lindl.	135	<i>Dicalpe aspidioides</i> Bl.	151
<i>Dendrobium parvum</i> Rchb. f.	135	<i>Dianella ensifolia</i> (L.) DC.	128
<i>Dendrobium parvum</i> Seid.	138	<i>Dichanthium caricosum</i> (L.) A. Camus	143
<i>Dendrobium porphyrophyllum</i> Guill.	135	<i>Dichroa febrifuga</i> Lour.	85
<i>Dendrobium primulinum</i> Lindl.	135	<i>Dichrocephala integrifolia</i> (L. f.) O.K.	95
<i>Dendrobium pulchellum</i> Roxb. ex Lindl.	135	<i>Dicliptera roxburghiana</i> Nees	108
<i>Dendrobium secundum</i> (Bl.) Lindl.	135	<i>Dicranopteris linearis</i> (Burm. f.) Underw. var. <i>linearis</i>	148
<i>Dendrobium senile</i> Par. & Rchb. f.	135	<i>Dicranopteris splendida</i> (Hand.-Maz.) Tag.	148
<i>Dendrobium signatum</i> Rchb. f.	135	<i>Didymocarpus aureoglandulosus</i> Cl.	106
<i>Dendrobium stuposum</i> Lindl.	135	<i>Didymocarpus kerrii</i> Craib	106
<i>Dendrobium sutepense</i> Rol. ex Dow.	135	<i>Didymocarpus purpureo-pictus</i> Craib	38
<i>Dendrobium venustum</i> Teijsm. & Binn.	135	<i>Didymocarpus rodgeri</i> W.W. Sm. & Ban. var.	106
<i>Dendrobium wilmsianum</i> Schltr.	135	<i>siamensis</i> W.W. Sm.	
<i>Dendrobium</i> sp. (sect. <i>Aporum</i> (Bl.) Lindl.)	135	<i>Didymocarpus siamensis</i> Barn.	106
<i>Dendrocalamus giganteus</i> (Wall.) Munro	147	<i>Didymocarpus squamosus</i> Craib	106
<i>Dendrocalamus membranaceus</i> Munro	146	<i>Didymocarpus wattianus</i> Craib	106
<i>Dendrocalamus nudus</i> Pilg.	147	<i>Didymochlaena truncatula</i> (Sw.) J. Sm.	151
<i>Dendrocalamus patellaris</i> Gamb.	146	<i>Didymoplexiella siamensis</i> (Rol. ex Dow.) Seid.	135
<i>Dendrocnide sinuata</i> (Bl.) Chew	122	<i>Diectomis fastigata</i> (Sw.) Kunth	143
<i>Dendrophthoe curvata</i> (Bl.) Miq.	115	<i>Dienia ophrydis</i> (Koen.) Orm. & Seid.	39
<i>Dendrophthoe falcata</i> (L. f.) Ett.	115	<i>Digitaria fibrosa</i> (Hack.) Stapf	143
<i>Dendrophthoe lanosa</i> (Korth.) Dans.	115	<i>Digitaria fuscescens</i> (Presl) Henr.	143
<i>Dendrophthoe pentandra</i> (L.) Miq.	115	<i>Digitaria larsenii</i> Bor	143
Dennstaedtiaceae	149	<i>Digitaria longiflora</i> (Retz.) Pers.	143
<i>Derris robusta</i> (Roxb. ex DC.) Bth.	80	<i>Digitaria setigera</i> Roth ex Roem. & Schult.	143
<i>Desmodium elegans</i> (Lour.) Bth.	80	var. <i>setigera</i>	
<i>Desmodium flexuosum</i> Wall. ex Bth.	80	<i>Digitaria siamensis</i> Henr.	143
<i>Desmodium gangeticum</i> (L.) DC.	80	<i>Digitaria ternata</i> (A. Rich.) Stapf ex Dyer	143

<i>Digitaria violascens</i> Link	143	<i>Diplazium esculentum</i> (Retz.) Sw.	153
<i>Dillenia aurea</i> Sm. var. <i>aurea</i>	63	<i>Diplazium leptophyllum</i> Christ	153
<i>Dillenia parviflora</i> Griff. var. <i>kerrii</i> (Craib) Hoogl.	63	<i>Diplazium polypodioides</i> Bl.	153
<i>Dillenia pentagyna</i> Roxb.	63	<i>Diplazium siamense</i> C. Chr.	153
Dilleniaceae	63	<i>Diploclisia glaucescens</i> (Bl.) Diels	64
<i>Dimocarpus longan</i> Lour. ssp. <i>longan</i> var. <i>longan</i>	75	<i>Diploprora championi</i> (Lindl.) Hk. f.	135
<i>Dinochloa maclellandii</i> (Munro) Kurz	147	<i>Diploprora truncata</i> Rol. ex Dow.	39
<i>Dioecrescis erythroclada</i> (Kurz) Tirv.	91	<i>Diplospora siamica</i> Craib	38
<i>Dioscorea alata</i> L.	131	<i>Dipteracanthus repens</i> (L.) Hassk.	108
<i>Dioscorea arachidna</i> Prain & Burk. var. <i>arachidna</i>	131	Dipterocarpaceae	68
<i>Dioscorea birmanica</i> Prain & Burk.	131	<i>Dipterocarpus costatus</i> Gaertn. f.	68
<i>Dioscorea bulbifera</i> L.	131	<i>Dipterocarpus obtusifolius</i> Teijsm. ex Miq.	68
<i>Dioscorea decipiens</i> Hk. f.	131	var. <i>obtusifolius</i>	
<i>Dioscorea esculenta</i> (Lour.) Burk. var. <i>fasciculata</i> (Roxb.) Prain & Burk.	131	<i>Dipterocarpus tuberculatus</i> Roxb. var. <i>tomentosus</i> Kerr	68
<i>Dioscorea glabra</i> Roxb. var. <i>glabra</i>	131	<i>Dipterocarpus tuberculatus</i> Roxb. var. <i>tuberculatus</i>	68
<i>Dioscorea glabra</i> Roxb. var. <i>vera</i> Prain & Burk.	131	<i>Dipterocarpus turbinatus</i> Gaertn. f.	68
<i>Dioscorea hamiltonii</i> Hk. f.	131	<i>Dischidia imbricata</i> (Bl.) Steud.	101
<i>Dioscorea hispida</i> Denn. var. <i>hispida</i>	131	<i>Dischidia major</i> (Vahl) Merr.	101
<i>Dioscorea hispida</i> Denn. var. <i>mollissima</i> (Bl.) Prain & Burk.	131	<i>Dischidia nummularia</i> R. Br.	101
<i>Dioscorea hispida</i> Denn. var. <i>neo-scaphoides</i> Prain & Burk.	131	<i>Dischidia obcordata</i> (N.E. Br.) Maxw. & Donk.	101
<i>Dioscorea kameronensis</i> Kunth var. <i>straminea</i> Prain & Burk.	132	<i>Dischidia singularis</i> Craib	101
<i>Dioscorea kerrii</i> Prain & Burk.	132	<i>Dischidia</i> sp.	102
<i>Dioscorea membranacea</i> Pierre ex Prain & Burk.	132	<i>Disperis siamensis</i> Rol. ex Dow.	135
<i>Dioscorea pentaphylla</i> L. var. <i>communis</i> Prain & Burk.	132	<i>Disporopsis longifolia</i> Craib	128
<i>Dioscorea prazeri</i> Prain & Burk.	132	<i>Disporum calcaratum</i> Wall. ex D. Don	128
<i>Dioscorea pseudo-nitens</i> Prain & Burk.	132	<i>Disporum calcaratum</i> Wall. ex G. Don var. <i>rubiflorum</i> Gagnep.	128
<i>Dioscorea rockii</i> Prain & Burk.	132	<i>Disporum calcaratum</i> Wall ex G. Don	128
<i>Dioscorea siamensis</i> R. Kunth	131	<i>Disporum cantoniense</i> (Lour.) Merr. var. <i>cantoniense</i>	128
Dioscoreaceae	131	<i>Distemon indica</i> Wedd.	122
<i>Diospyros castanea</i> (Craib) Flet.	99	<i>Dolichos grahamianus</i> (Wight & Arn.) Niyo.	84
<i>Diospyros coactanea</i> Flet.	99	<i>Dolichos lablab</i> L.	82
<i>Diospyros ehretoides</i> Wall. ex G. Don	99	<i>Dolichos tenuicaulis</i> (Baker) Craib ssp. <i>tenuicaulis</i>	81
<i>Diospyros ferrea</i> (Willd.) Bakh. var. <i>littorea</i> (R. Br.) Bakh.	99	<i>Dolichovigna pilosa</i> (Willd.) Niyo	81
<i>Diospyros glandulosa</i> Lace	99	<i>Donax cannaeformis</i> (G. Forst.) K. Sch.	128
<i>Diospyros kaki</i> Thunb.	53	<i>Dracaena angustifolia</i> Roxb.	129
<i>Diospyros kerrii</i> Craib	38	<i>Drosera burmannii</i> Vahl	85
<i>Diospyros malabarica</i> (Desr.) Kostel. var. <i>siamensis</i> (Hochr.) Pheng.	99	<i>Drosera peltata</i> J.E. Sm. ex Willd.	85
<i>Diospyros martabanica</i> Cl.	99	Droseraceae	85
<i>Diospyros mollis</i> Griff.	99	<i>Drymaria diandra</i> Bl.	66
<i>Diospyros montana</i> Roxb.	99	<i>Drymoda siamensis</i> Schltr.	135
<i>Diospyros pilosanthera</i> Blanco	99	<i>Drynaria bonii</i> C. Chr.	153
<i>Diospyros rhodocalyx</i> Kurz	99	<i>Drynaria fortunei</i> (O.K. ex Mett.) J. Sm.	153
<i>Diospyros truncata</i> Zoll. & Mor.	38	<i>Drynaria propinqua</i> (Wall. ex Mett.) J. Sm. ex Bedd.	153
<i>Diospyros undulata</i> Wall. ex G. Don var. <i>cratericalyx</i> (Craib) Bakh.	99	<i>Drynaria rigidula</i> (Sw.) Bedd.	153
<i>Diospyros viridis</i> Craib	38	Dryopteridaceae	151
<i>Diospyros winitii</i> Flet.	99	<i>Dryopteris cochleata</i> (D. Don) C. Chr.	151
<i>Diphyllarium mekongense</i> Gagnep.	81	<i>Dryopteris hirtipes</i> (Bl.) O.K.	151
<i>Diplacrum reticulatum</i> Holtt.	142	<i>Dryopteris integriloba</i> C. Chr.	151
<i>Diplazium asperum</i> Bl.	153	<i>Dryopteris neoassamensis</i> Ching	151
<i>Diplazium dilatatum</i> Bl.	153	<i>Dryopteris pseudoparsa</i> Ching	151
<i>Diplazium donianum</i> (Mett.) Tard.	153	<i>Duabanga grandiflora</i> (Roxb. ex DC.) Walp.	87
		<i>Dumasia leiocarpa</i> Bth.	81
		<i>Dunbaria bella</i> Prain	81
		<i>Dunbaria fusca</i> (Wall.) Kurz	81
		<i>Dunbaria glandulosa</i> (Dalz. & Gibs.) Prain	81
		<i>Dunbaria longeracemosa</i> Craib	81

Dunbaria podocarpa Kurz	81	Emilia sonchifolia (L.) DC. ex Wight	95
Dunbaria subrhombica (Miq.) Hemsl.	81	Endosamara racemosa (Roxb.) Gees.	81
Dunbaria villosa (Thunb.) Wak.	81	Engelhardia serrata Bl. var. serrata	123
Duperrea pavettifolia (Kurz) Pit.	91	Engelhardia spicata Lechen. ex Bl. var. colebrookeana (Lindl. ex Wall.) O.K.	123
Dysolobium dolichoides (Roxb.) Prain var. schomburgkii (Gagnep.) Mare.	81	Engelhardia spicata Lechen. ex Bl. var. integra (Kurz) Mann.	123
Dysolobium grande (Wall. ex Bth.) Prain	81	Engelhardia spicata Lechen. ex Bl. var. spicata	123
Dysolobium pilosum (Willd.) Mare.	81	Enkleia siamensis (Kurz) Nev. ssp. siamensis	115
Dysoxylum aff. cauliflorum Hiern	72	Entada rheedii Spreng. ssp. rheedii	77
Dysoxylum excelsum Bl.	72	Epicyas siamensis (Miq.) de Laub.	147
Dysoxylum aff. hamiltonii Hiern	73	Epicyas tonkinensis (L. Lind. & Rod.) de Laub.	135
Dysoxylum procerum Wall. ex Hiern	72	Epipogium roseum (D. Don) Lindl.	135
Ebenaceae	99	Epipremnum giganteum (Roxb.) Schott	130
Echinochloa colona (L.) Link	148	Epithema carnosum (D. Don) Bth.	107
Echinochloa crusgalli (L.) P. Beauv. var. crusgalli	148	Equisetaceae	148
Eclipta prostrata (L.) L.	95	Equisetum debile Roxb. ex Vauch.	148
Egenolfia appendiculata (Willd.) J. Sm.	151	Eragrostis amabilis (L.) Nees	143
Egenolfia sinensis (Bak.) Maxon var. sinensis	151	Eragrostis malayana Stapf	143
Ehretia acuminata R. Br. var. acuminata	103	Eragrostis montana Bala.	143
Elaeocarpaceae	70	Eragrostis nigra Nees ex Steud.	144
Elaeocarpus bracteatus Watt ex Cl.	70	Eragrostis pilosa (L.) P. Beauv.	144
Elaeocarpus floribundus Bl.	70	Eragrostis poaeoides P. Beauv.	144
Elaeocarpus lanceifolius Roxb.	70	Eragrostis tenella (L.) P. Beauv. ex Roem. & Schult.	143
Elaeocarpus petiolatus (Jack) Wall. ex Kurz	70	Eragrostis unioloides (Retz.) Nees ex Steud.	144
Elaeocarpus prunifolius Wall. ex C Muell.	70	Eranthemum tetragonum Wall. ex Nees	108
Elaeocarpus siamensis Craib	71	Eria acervata Lindl.	135
Elaeocarpus sphaericus (Gaertn.) K. Sch.	71	Eria affinis Griff.	135
Elaeocarpus stipularis Bl.	71	Eria bipunctata Lindl.	135
Elaphoglossum marginatum (Fee) Moore	151	Eria bractescens Lindl. var. affinis (Griff.) Hk. f.	135
Elaphoglossum yoshinagae (Yat.) Mak.	151	Eria dasyphylla Par. & Rchb. f.	138
Elatostema integrifolium (D. Don) Wedd.	122	Eria panea Lindl.	135
Elatostema lineolatum Wight var. majus Wedd.	122	Eria perpusilla Par. & Rchb. f.	135
Elatostema longipes W.T. Wang	122	Eria siamensis Schltr.	135
Elatostema monandrum (B.-H. ex D. Don) Hara	122	Eria sutepensis Rol. ex Dow.	135
Elatostema platyphyllum Wedd. var. platyphyllum	122	Ericaceae	97
Eleocharis congesta D. Don var. congesta	140	Eriobotrya bengalensis (Roxb.) Hk. f. forma bengalensis	84
Elephantopus scaber L. var. scaber	95	Eriobotrya bengalensis (Roxb.) Hk. f. forma multinervata Vidal	84
Eleusine indica (L.) Gaertn.	143	Eriocaulaceae	126
Ellipeia cherreensis Pierre ex Fin. & Gagnep.	64	Eriocaulon oryzetorum Mart.	126
Ellipellis cherreensis (Pierre ex Fin. & Gagnep.) R.E. Fr.	64	Eriocaulon truncatum B.-H. ex Mart.	126
Elsholtzia blanda H. Keng	111	Eriocaulon aff. ubonense H. Lec.	126
Elsholtzia winitiana Craib	111	Eriolaena candollei Wall.	69
Elytranthe affinis Craib	115	Eriosema chinense Vog.	81
Elytranthe albida (Bl.) Bl.	115	Erycibe subspicata Wall. ex G. Don	104
Elytrophorus spicatus (Willd.) A. Camus	143	Eryngium foetidum L.	53
Embelia impressa Flet.	98	Erythrina stricta Roxb.	81
Embelia impressa Flet. var. serrata Flet.	98	Erythrina stricta Roxb. var. suberosa (Roxb.) Niyo.	81
Embelia oblongifolia Hemsl.	98	Erythrina suberosa Roxb.	81
Embelia pulchella Mez	98	Erythrina subumbrans (Hassk.) Merr.	81
Embelia sessiliflora Kurz	98	Erythroxylaceae	71
Embelia sootepensis Craib var. sootepensis	98	Erythroxylum cuneatum (Miq.) Kurz	85
Embelia stricta Craib	98	Escalloniaceae see Grossulariaceae	85
Embelia subcoriacea (Cl.) Mez	98	Ethulia conyzoides L. f. ex L.	95
Embelia tsjeriamcottam (Roem. & Schult.) A. DC. var. tsjeriamcottam	98	Etlingera littoralis (Kon.) Gise.	127
Embelia villosa Wall.	98	Eucalyptus camadulensis Denh.	163
Emilia prenanthoidea DC.	95		

<i>Eucapypus deglupta</i> Bl.	163	<i>Fagerlindia sinensis</i> (Lour.) Tirv.	91
<i>Eucapypus maculata</i> Hk.	163	<i>Fagerlindia</i> sp.	38
<i>Eugenia albiflora</i> Duth. ex Kurz	85	<i>Fagopyrum esculentum</i> Moen.	112
<i>Eugenia cinerea</i> Kurz	86	<i>Fagraea ceilanica</i> Thunb.	103
<i>Eugenia claviflora</i> Roxb.	86	<i>Falconeria insigne</i> Roy.	118
<i>Eugenia cumini</i> (L.) Druce	86	<i>Fernandoa adenophylla</i> (Wall. ex G. Don) Steen.	107
<i>Eugenia formosa</i> Wall.	86	<i>Feronia limonia</i> (L.) Swing.	72
<i>Eugenia fruticosa</i> (DC.) Roxb.	86	<i>Ficus abelii</i> Miq.	120
<i>Eugenia</i> aff. <i>globiflora</i> Craib	86	<i>Ficus altissima</i> Bl.	120
<i>Eugenia grata</i> Wight	86	<i>Ficus auriculata</i> Lour.	120
<i>Eugenia megacarpa</i> Craib	86	<i>Ficus benjamina</i> L. var. <i>benjamina</i>	120
<i>Eugenia oblata</i> Roxb. var. <i>oblata</i>	86	<i>Ficus callosa</i> Willd.	120
<i>Eugenia subviridis</i> Craib	86	<i>Ficus capillipes</i> Gagnep.	120
<i>Eugenia tetragona</i> Wight	86	<i>Ficus curtipes</i> Corn.	120
<i>Eulalia leschenaultiana</i> (Decne.) Ohwi	144	<i>Ficus cyrtophylla</i> Wall. ex Miq.	120
<i>Eulalia pallens</i> (Hack.) O.K.	144	<i>Ficus fistulosa</i> Reinw. ex Bl. var. <i>fistulosa</i>	121
<i>Eulalia quadrinervis</i> (Hack.) O.K.	144	<i>Ficus geniculata</i> Kurz	121
<i>Eulalia siamensis</i> Bor	144	<i>Ficus glaberrima</i> Bl. var. <i>glaberrima</i>	121
<i>Eulalia speciosa</i> (Deb.) O. K. var. <i>speciosa</i>	144	<i>Ficus hederacea</i> Roxb.	121
<i>Eulaliopsis binata</i> (Retz.) C.E. Hubb.	144	<i>Ficus heterophylla</i> L. f. var. <i>heterophylla</i>	121
<i>Eulophia burkei</i> Rol. ex Dow.	135	<i>Ficus heteropleura</i> Bl. var. <i>heteropleura</i>	121
<i>Eulophia geniculata</i> King & Pantl.	135	<i>Ficus hirta</i> Vahl var. <i>hirta</i>	121
<i>Eulophia nuda</i> Lindl.	135	<i>Ficus hirta</i> Vahl var. <i>imberbis</i> Gagnep.	121
<i>Eulophia pauciflora</i> Guill.	135	<i>Ficus hirta</i> Vahl var. <i>roxburghii</i> (Miq.) King	121
<i>Eulophia siamensis</i> Rol. ex Dow.	136	<i>Ficus hispida</i> L. f. var. <i>hispida</i>	121
<i>Euodia glomerata</i> Craib	71	<i>Ficus laevis</i> Bl. var. <i>laevis</i>	121
<i>Euodia meliifolia</i> (Hance) Bth.	71	<i>Ficus lyrata</i> Warb.	121
<i>Euodia simplicifolia</i> Ridl.	72	<i>Ficus microcarpa</i> L. f. var. <i>microcarpa</i>	121
<i>Euodia triphylla</i> DC.	71	forma <i>microcarpa</i>	
<i>Euodia viticina</i> Wall. ex Kurz	72	<i>Ficus obtusifolia</i> Roxb.	121
<i>Euonymus colonoides</i> Craib	38	<i>Ficus parietalis</i> Bl.	121
<i>Euonymus similis</i> Craib	73	<i>Ficus pisocarpa</i> Bl.	121
<i>Euonymus sootepensis</i> Craib	73	<i>Ficus pubigera</i> (Wall. ex Miq.) Miq. var. <i>pubigera</i>	121
<i>Eupatorium adenophorum</i> Spreng.	95	<i>Ficus racemosa</i> L. var. <i>racemosa</i>	121
<i>Eupatorium cannabinum</i> L.	95	<i>Ficus religiosa</i> L.	53
<i>Eupatorium odoratum</i> L.	95	<i>Ficus rumphii</i> Bl.	121
<i>Euphorbia bifida</i> Hk. f. & Arn.	117	<i>Ficus sagittata</i> Vahl var. <i>sagittata</i>	121
<i>Euphorbia coudercii</i> Gagnep.	117	<i>Ficus sarmentosa</i> B.-H. ex J.E. Sm. var. <i>nipponica</i>	121
<i>Euphorbia heterophylla</i> L.	117	(Fr. & Sav.) Corn.	
<i>Euphorbia hirta</i> L.	117	<i>Ficus semicordata</i> B.-H. ex J.E. Sm. var. <i>semicordata</i>	121
<i>Euphorbia hypericifolia</i> L.	117	<i>Ficus squamosa</i> Roxb.	121
<i>Euphorbia lacei</i> Craib	117	<i>Ficus subulata</i> Bl. var. <i>subulata</i>	121
<i>Euphorbia parviflora</i> L.	117	<i>Ficus superba</i> (Miq.) Miq. var. <i>superba</i>	121
<i>Euphorbia prostrata</i> W. Ait.	118	<i>Ficus variegata</i> Bl. var. <i>variegata</i>	121
<i>Euphorbia pulcherrima</i> Willd. ex Klot.	118	<i>Ficus virens</i> Ait. var. <i>sublanceolata</i> (Miq.) Corn.	121
<i>Euphorbia thymifolia</i> L.	118	<i>Ficus</i> sp.	121
<i>Euphorbia vachellii</i> Hk. & Arn.	117	<i>Fimbristylis adenolepis</i> Kern	140
Euphorbiaceae	116	<i>Fimbristylis aestivalis</i> (Retz.) Vahl var. <i>aestivalis</i>	140
<i>Eurya acumminata</i> DC. var. <i>wallichiana</i> Dyer	67	<i>Fimbristylis cinnamometorum</i> (Vahl) Kunth	140
<i>Eurya nitida</i> Korth. var. <i>siamensis</i> (Craib) H. Keng	67	<i>Fimbristylis dichotoma</i> (L.) Vahl ssp. <i>dichotoma</i>	140
<i>Eurycoma longifolia</i> Jack	72	<i>Fimbristylis eragrostis</i> (Nees & Mey.) Hance	140
<i>Eurysolen gracilis</i> Prain	111	<i>Fimbristylis fimbristylodes</i> (F. Muell.) Druce	140
<i>Evolvulus alsinoides</i> (L.) L. var. <i>hirsutus</i>	104	<i>Fimbristylis hookeriana</i> Boeck.	140
(Lmk.) Oost.		<i>Fimbristylis intonsa</i> S.T. Blake	140
<i>Exacum pteranthum</i> Wall. ex Griseb.	103	<i>Fimbristylis littoralis</i> Gaud. var. <i>littoralis</i>	141
<i>Exacum sutapense</i> Hoss. ex Craib	103	<i>Fimbristylis merrillii</i> Kern	141
<i>Exacum tetragonum</i> Roxb.	103	<i>Fimbristylis miliacea</i> (L.) Vahl	141
Fagaceae	123	<i>Fimbristylis nutans</i> (Retz.) Vahl	141

<i>Fimbristylis ovata</i> (Burm. f.) Kern	141	<i>Geodorum siamense</i> Rol. ex Dow.	136
<i>Fimbristylis schoenoides</i> (Retz.) Vahl	141	<i>Geophila repens</i> (L.) I.M. John.	91
<i>Fimbristylis straminea</i> Turr.	141	Gesneriaceae	106
<i>Fimbristylis tetragona</i> R. Br.	141	<i>Gigantochloa albo-ciliata</i> (Munro) Kurz	147
<i>Fimbristylis thomsonii</i> Boeck.	141	<i>Gigantochloa apus</i> (Schult.) Kurz	147
<i>Fimbristylis tortispica</i> Turr.	140	<i>Ginallia siamica</i> Craib	115
<i>Fimbristylis yunnanensis</i> Cl.	141	<i>Girardinia hibiscifolia</i> Miq.	122
<i>Firmiana colorata</i> (Roxb.) R. Br.	69	Gleicheniaceae	148
<i>Fissistigma oblongum</i> (Craib) Merr.	64	<i>Glinus oppositifolius</i> (L.) A. DC.	89
<i>Fissistigma</i> sp.	64	<i>Globba clarkei</i> Baker	127
<i>Flacourtia indica</i> (Burm. f.) Merr.	67	<i>Globba kerrii</i> Craib	127
<i>Flacourtia lenis</i> Craib	67	<i>Globba nisbetiana</i> Craib	127
Flacourtiaceae	67	<i>Globba nuda</i> K. Lar.	127
<i>Flemingia lineata</i> (L.) Roxb. ex Ait f. var.	82	<i>Globba purpurascens</i> Craib	127
<i>glutinosa</i> Prain		<i>Globba reflexa</i> Craib	127
<i>Flemingia paniculata</i> Wall. ex Bth.	82	<i>Globba schomburgkii</i> Hk. f. var. <i>schomburgkii</i>	127
<i>Flemingia sootepensis</i> Craib	82	<i>Globba villosula</i> Gagnep.	127
<i>Flemingia strobilifera</i> (L.) R. Br. ex Ait. f.	82	<i>Globba xantholeuca</i> Craib	127
var. <i>strobilifera</i>		<i>Globba yeatsiana</i> Craib	38
<i>Floscopa scandens</i> Lour.	126	<i>Glochidion acuminatum</i> M.-A. var. <i>siamense</i> A.S.	118
<i>Forrestia glabrata</i> (Kunth) Hassk.	125	<i>Glochidion assamicum</i> (M.-A.) Hk. f.	118
<i>Forrestia mollissima</i> (Bl.) Kds. forma <i>mollissima</i>	125	<i>Glochidion coccineum</i> (B.-H.) M.-A.	118
<i>Fragaria vesca</i> L.	52	<i>Glochidion dasystylum</i> Kurz var. <i>kerrii</i> (Craib)	118
<i>Fraxinus floribunda</i> Wall.	100	<i>T. Chak. & Gang.</i>	
<i>Fuirena ciliaris</i> (L.) Roxb.	141	<i>Glochidion eriocarpum</i> Champ.	118
<i>Fuirena umbellata</i> Rottb.	141	<i>Glochidion hongkongense</i> M.-A. var. <i>hongkongense</i>	118
<i>Gagnepainia godefroyi</i> (Baill.) K.Sch.	127	<i>Glochidion kerrii</i> Craib	118
<i>Galeola cathartii</i> Hk. f.	39	<i>Glochidion sphaerogynum</i> (M.-A.) Kurz	118
<i>Galeola integra</i> Rol. ex Dow.	136	<i>Gluta obovata</i> Craib	76
<i>Galeola kerrii</i> Rol. ex Dow.	139	<i>Gluta usitata</i> (Wall.) Hou	76
<i>Galeola nana</i> Rol. ex Dow.	134	<i>Glycine max</i> (L.) Merr.	53
<i>Galeola siamensis</i> Rol. ex Dow.	39	<i>Glycosmis puberula</i> Lindl. ex Oliv. var. <i>craibii</i>	72
<i>Galinsoga parviflora</i> Cav.	95	(Tana.) Stone	
<i>Garcinia cowa</i> Roxb.	66	<i>Gmelina arborea</i> Roxb.	110
<i>Garcinia mckeaniana</i> Craib	66	<i>Gnaphalium affine</i> D. Don	95
<i>Garcinia merguensis</i> Wight	66	<i>Gnaphalium hypoleucum</i> DC.	95
<i>Garcinia speciosa</i> Wall.	67	<i>Gnaphalium polycaulon</i> Pers.	95
<i>Garcinia thorelii</i> Pierre	67	Gnetaceae	147
<i>Garcinia xanthochymus</i> Hk. f. ex T. And.	67	<i>Gnetum leptostachyum</i> Bl.	147
<i>Gardenia erythroclada</i> Kurz	91	<i>Gnetum montanum</i> Mgf.	147
<i>Gardenia obtusifolia</i> Roxb. ex Kurz	91	<i>Gochnatia decora</i> (Kurz) Cabr.	95
<i>Gardenia sootepensis</i> Hutch.	91	<i>Goldfussia anfractuosa</i> (Cl. ex Hoss.) Brem.	109
<i>Garnotia acutigluma</i> (Steud.) Ohwi	144	<i>Gomphogyne heterosperma</i> (Wall.) Kurz	87
<i>Garnotia patula</i> (Munro) Bth. var. <i>patula</i>	144	<i>Gomphostemma intermedium</i> Craib	111
<i>Garnotia tenella</i> (Arn. ex Miq.) Jan.	144	<i>Gomphostemma lucidum</i> Wall. ex Bth.	111
<i>Garuga pinnata</i> Roxb.	72	<i>Gomphostemma strobilinum</i> Wall. ex Bth. var.	111
<i>Gastrochilus pseudosistichus</i> (King & Pantl.) Schltr.	39	<i>acaulis</i> (Kurz ex Hk. f.) Prain	
<i>Gastrochilus sutepensis</i> (Rol. ex Dow.) Seid. & Smit.	39	<i>Gomphostemma wallichii</i> Prain	111
<i>Gastrochilus yunnanensis</i> Schltr.	39	<i>Gonatanthus pumilus</i> (D. Don) Engl. & Krause	130
<i>Gastrodia exilis</i> Hk. f.	136	<i>Goniotalamus griffithii</i> Hk. f. & Thoms.	64
<i>Gastrodia siamensis</i> Rol. ex Dow.	136	<i>Goodyera fumata</i> Thw.	136
<i>Genianthus laurifolius</i> (Roxb.) Hk. f.	102	<i>Goodyera procera</i> (Ker-Gawl.) Hk.	136
<i>Geniosporum coloratum</i> (D. Don) O.K.	111	<i>Goodyera thailandica</i> Seid.	136
<i>Geniosporum strobiliferum</i> Wall. ex Bth.	111	<i>Goodyera viridiflora</i> (Bl.) Bl.	136
<i>Gentiana timida</i> Kerr	38	<i>Gordonia dalglieshiana</i> Craib	67
Gentianaceae	103	<i>Gossypium barbadense</i> L. var. <i>acuminatum</i>	53
<i>Geodorum attenuatum</i> Griff.	136	(Roxb.) Mast.	
<i>Geodorum citrinum</i> Jacks.	136	Gramineae	142

Gramineae, Bambusoideae	146	<i>Hedyotis lindleyana</i> Hk. ex Wight & Arn.	91
<i>Grangea maderaspatana</i> (L.) Poir.	95	<i>Hedyotis nalamponi</i> Fuku.	91
<i>Grewia abutilifolia</i> Vent. ex Juss.	70	<i>Hedyotis ovatifolia</i> Cav.	91
<i>Grewia acuminata</i> Juss.	70	<i>Hedyotis pahompokae</i> Fuku.	91
<i>Grewia eriocarpa</i> Juss.	70	<i>Hedyotis pinifolia</i> Wall. ex G. Don	91
<i>Grewia hirsuta</i> Vahl	70	<i>Hedyotis quadrilocularis</i> Thw.	91
<i>Grewia lacei</i> Drum. & Craib	70	<i>Hedyotis tenelliflora</i> Bl. var. <i>kerrii</i> (Craib) Fuku.	91
<i>Grewia laevigata</i> Vahl	70	<i>Hedyotis tenelliflora</i> Bl. var. <i>tenelliflora</i>	91
<i>Grewia polygama</i> Roxb.	70	<i>Hedyotis vestita</i> R. Br. ex G. Don	91
<i>Grona grahamii</i> Bth.	82	<i>Helicia formosana</i> Hemsl. var. <i>oblanceolata</i> Sleum.	115
Grossulariaceae	85	<i>Helicia nilagirica</i> Bedd.	115
Guttiferae	66	<i>Heliciopsis terminalis</i> (Kurz) Sleum.	115
<i>Gutzlaffia pedunculata</i> Craib	109	<i>Helicteres angustifolia</i> L.	69
<i>Gymnema griffithii</i> Craib	102	<i>Helicteres elongata</i> Wall. ex Boj.	69
<i>Gymnogrammitis dareiformis</i> (Hk.) Ching ex Tard. & C. Chr.	149	<i>Helicteres hirsuta</i> Lour.	69
<i>Gymnopetalum chinense</i> (Lour.) Merr.	87	<i>Helicteres isora</i> L.	69
Gymnospermae	147	<i>Helicteres lanceolata</i> A. DC. var. <i>lanceolata</i>	69
<i>Gymnostachyum signatum</i> (R. Ben.) Imlay	108	<i>Helicteres obtusa</i> Wall. ex Kurz	69
<i>Gynostemma angustipetala</i> Craib	88	<i>Helicteres plebeja</i> Kurz	69
<i>Gynostemma pentaphylla</i> (Thunb.) Mak.	88	<i>Heliotropium indicum</i> L.	103
<i>Gynostemma siamensis</i> Craib	88	<i>Helixanthera parasitica</i> Lour.	115
<i>Gynura integrifolia</i> Gagnep.	95	<i>Helixanthera pulchra</i> (DC.) Dans.	115
<i>Gynura longifolia</i> Kerr	95	<i>Hemarthria compressa</i> (L. f.) R. Br.	144
<i>Gynura pseudochina</i> (L.) DC.	95	<i>Hemigraphis glaucescens</i> (Nees) Cl.	108
<i>Habenaria amplexicaule</i> Rol. ex Dow.	136	<i>Hemionitis arifolia</i> (Burm. f.) Moore	150
<i>Habenaria auranticea</i> Rol. ex Dow.	39	<i>Hemsleyana heteroserma</i> (Wall.) C. Jeff.	87
<i>Habenaria dentata</i> (Sw.) Schltr.	136	<i>Henslowia sessilis</i> Craib	38
<i>Habenaria furcifera</i> Lindl.	136	Hernandiaceae	115
<i>Habenaria garrettii</i> Rol. ex Dow.	137	<i>Heteropanax fragrans</i> (Roxb. ex DC.) Seem.	89
<i>Habenaria holotricha</i> Gagnep.	136	<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. & Schult.	144
<i>Habenaria hosseusii</i> Schltr.	136	<i>Heteropogon triticeus</i> (R. Br.) Stapf	144
<i>Habenaria humistrata</i> Rol. ex Dow.	136	<i>Heterosmilax pertenuis</i> (T. Koy.) T. Koy.	38
<i>Habenaria limprichtii</i> Schltr.	136	<i>Heterostemma siamicum</i> Craib	102
<i>Habenaria lucida</i> Wall. ex Lindl.	136	<i>Heynea trijuga</i> Roxb. ex Sims	73
<i>Habenaria malintana</i> (Blanco) Merr.	136	<i>Hibiscus furcatus</i> Roxb.	68
<i>Habenaria marginata</i> Colebr.	39	<i>Hibiscus glanduliferus</i> Craib	68
<i>Habenaria medioflexa</i> Turr.	136	<i>Hibiscus mutabilis</i> L.	68
<i>Habenaria recurva</i> Rol. ex Dow.	136	<i>Hibiscus surattensis</i> L.	68
<i>Habenaria rostellifera</i> Rechb. f.	136	<i>Hiptage benghalensis</i> (L.) Kurz ssp. <i>candicans</i> (Hk. f.) Siri.	71
<i>Habenaria stenopetala</i> Lindl. var. <i>stenopetala</i>	136	<i>Hodgsonia heteroclita</i> (Roxb.) Hk.f. & Th.	88
<i>Habenaria sutepensis</i> Rol. ex Dow.	136	<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall. ex G. Don	101
<i>Habenaria trichochila</i> Rol. ex Dow.	136	<i>Holigarna kurzii</i> King	76
<i>Habenaria viridiflora</i> (Rottl. ex Sw.) R. Br.	136	<i>Holoptelea integrifolia</i> (Roxb.) Planch.	120
<i>Haldina cordifolia</i> (Roxb.) Rids.	91	<i>Homalium ceylanicum</i> (Gard.) Bth.	67
<i>Halopegia brachystachys</i> Craib	128	<i>Homalomena occulta</i> (Lour.) Schott	130
<i>Hapaline benthamiana</i> Schott	130	<i>Homonoia riparia</i> Lour.	118
<i>Harpullia cupanioides</i> Roxb.	75	<i>Hopea odorata</i> Roxb. var. <i>odorata</i>	68
<i>Harrisonia perforata</i> (Blanco) Merr.	72	<i>Horsfieldia amygdalina</i> (Wall.) Warb. var. <i>amygdalina</i>	114
<i>Hedychium coccineum</i> Ham. ex J. Sm.	127	<i>Horsfieldia thorelii</i> Lec.	114
<i>Hedychium ellipticum</i> Ham. ex J. Sm.	127	<i>Houttuynia cordata</i> Thunb.	68
<i>Hedychium gardnerianum</i> Rosc.	127	<i>Hovenia dulcis</i> Thunb.	74
<i>Hedychium villosum</i> Wall.	127	<i>Hoya acuta</i> Haw. var. <i>acuta</i>	102
<i>Hedyotis auricularia</i> L.	91	<i>Hoya engleriana</i> Hoss.	102
<i>Hedyotis coronaria</i> (Kurz) Craib	91	<i>Hoya kerrii</i> Craib	102
<i>Hedyotis corymbosa</i> (L.) Lmk.	91	<i>Hoya parasitica</i> (Roxb.) Wall. ex Wight var. <i>parasitica</i>	102
<i>Hedyotis diffusa</i> Willd.	91	<i>Hoya siamica</i> Craib	89
<i>Hedyotis gracilipes</i> (Craib) Fuku. var. <i>gracilipes</i>	91		

<i>Hoya thomsonii</i> Hk. f.	102	<i>Ipomoea sinensis</i> (Desr.) Choisy	104
<i>Hoya verticillata</i> (Vahl) G. Don var. <i>verticillata</i>	102	<i>Ipomoea</i> sp.	104
<i>Hydrocotyle siamica</i> Craib	89	Iridaceae	129
<i>Hydrolea zeylanica</i> (L.) Vahl	103	<i>Iris collettii</i> Hk. f.	129
Hydrophyllaceae	103	<i>Irvingia malayana</i> Oliv. ex Benn.	72
<i>Hymenodictyon excelsum</i> (Roxb.) Wall.	91	Irvingiaceae	72
<i>Hymenodictyon orixense</i> (Roxb.) Mabb.	91	<i>Ischaemum rugosum</i> Salisb. var. <i>rugosum</i>	144
Hymenophyllaceae	148	<i>Isodon coetsa</i> (B.-H. ex D. Don) Kudo	111
<i>Hymenophyllum exsertum</i> Wall. ex Hk.	148	<i>Isodon hispidus</i> (Bth.) Murata	112
<i>Hymenopogon parasiticus</i> Wall.	91	<i>Isodon lophanthoides</i> (B.-H. ex D. Don) Hara	112
<i>Hyparrhenia rufa</i> (Nees) Stapf var. <i>siamensis</i> Clayton	144	<i>Isodon nigropunctatus</i> Murata	112
<i>Hypericum japonicum</i> Thunb. ex Murr.	67	<i>Isodon ternifolius</i> (D. Don) Kudo	112
<i>Hypoestes</i> (? <i>purpurea</i> R. Br.)	108	<i>Itea puberula</i> Craib	85
<i>Hypolepis punctata</i> (Thunb.) Mett. ex Kuhn	149	<i>Itea riparia</i> Coll. & Hemsl.	85
<i>Hypopithys lanuginosa</i> Rafin.	98	<i>Ixeridium sagittaroides</i> (Cl.) Pak. & Kaw.	96
<i>Hypoxis aurea</i> Lour.	129	<i>Ixora butterwickii</i> Hole var. <i>lepidia</i> Craib	91
<i>Hyptianthera bracteata</i> Craib	91	<i>Ixora cibdela</i> Craib var. <i>cibdela</i>	92
<i>Hyptianthera stricta</i> (Willd.) Wight & Arn.	91	<i>Ixora cibdela</i> Craib var. <i>puberula</i> Craib	92
<i>Hyptis capitata</i> Jacq.	111	<i>Ixora kerrii</i> Craib	92
<i>Hyptis suaveolens</i> (L.) Poit.	111	<i>Jacaranda obtusifolia</i> H. B. K. ssp. <i>rhombifolia</i>	107
 Icacinaceae	73	(G. F. W. Meij.) Gent.	
<i>Ichnocarpus frutescens</i> (L.) W. T. Ait.	101	<i>Jacquemontia paniculata</i> (Burm. f.) Hall. f. var.	104
<i>Ilex englishii</i> Lace	73	<i>paniculata</i>	
<i>Ilex umbellulata</i> (Wall.) Loesn.	73	<i>Jasminum attenuatum</i> Roxb. ex G. Don	100
<i>Ilex</i> sp.	73	<i>Jasminum funale</i> Decne. ssp. <i>sootepense</i> (Craib)	100
<i>Illigera thorelii</i> Gagnep.	115	P.S. Green	
<i>Illigera trifoliata</i> (Griff.) Dunn ssp. <i>cucullata</i>	115	<i>Jasminum nervosum</i> Lour.	100
(Merr.) Kub.	71	<i>Jasminum scandens</i> (Retz.) Vahl	100
<i>Impatiens curvipes</i> Hk. f.	71	<i>Jasminum sempervirens</i> Kerr	100
<i>Impatiens garrettii</i> Craib	71	<i>Jasminum siamense</i> Craib	100
<i>Impatiens mengtzeana</i> Hk. f.	71	<i>Jasminum sootepense</i> Craib	100
<i>Impatiens violaeiflora</i> Hk. f.	71	<i>Jasminum subglandulosum</i> Kurz	100
<i>Imperata cylindrica</i> (L.) P. Beauv. var. <i>major</i>	144	<i>Jatropha curcas</i> L.	53
(Nees) C.E. Hubb. ex Hubb. & Vaugh.	82	Juglandaceae	123
<i>Indigofera cassioides</i> Rottl. ex DC.	82	<i>Justicia comatum</i> (L.) Lmk.	108
<i>Indigofera dosua</i> B.-H. ex D. Don	82	<i>Justicia pallida</i> Im.	108
<i>Indigofera hirsuta</i> L.	82	<i>Justicia procumbens</i> L.	108
<i>Indigofera laxiflora</i> Craib	82	<i>Justicia quadrifaria</i> (Nees) T. And.	108
<i>Indigofera linnaei</i> Ali	82	<i>Justicia aff. quadrifaria</i> (Nees) T. And.	108
<i>Indigofera sootepensis</i> Craib ssp. <i>sootepensis</i>	38	<i>Justicia ventricosa</i> Wall.	108
<i>Indigofera squalida</i> Prain	82	<i>Kadsura heteroclita</i> (Roxb.) Craib	63
<i>Inula cappa</i> (Ham. ex D. Don) DC. forma <i>cappa</i>	95	<i>Kaempferia elegans</i> Wall.	127
<i>Inula indica</i> L.	95	<i>Kaempferia roscovana</i> Wall.	127
<i>Inula nervosa</i> Wall. ex DC. var. <i>purpurascens</i> Hk. f.	95	<i>Kaempferia rotunda</i> L.	127
<i>Inula wissmanniana</i> Hand.-Maz. forma <i>wissmanniana</i>	95	<i>Kaempferia siamensis</i> Siri.	128
<i>Iodes vitiginea</i> (Hance) Hemsl. var. <i>vitiginea</i>	73	<i>Knema conferta</i> (King) Warb.	114
<i>Iodocephalus glandulosus</i> Kerr	94	<i>Knema laurina</i> (Bl.) Warb.	114
<i>Ione purpurata</i> Braid	39	<i>Knoxia brachycarpa</i> R. Br. ex Hk. f.	92
<i>Ione siamensis</i> Rol.	39	<i>Knoxia corymbosa</i> Willd.	92
<i>Iphigenia indica</i> (L.) A. Gray ex Kunth	128	<i>Knoxia mollis</i> Wight & Arn.	92
<i>Ipomoea angulata</i> Lmk.	104	<i>Kuniwatsukia cuspidata</i> (Bedd.) Pic.-Ser.	153
<i>Ipomoea aquatica</i> Forsk.	104	<i>Kydia calycina</i> Roxb.	68
<i>Ipomoea cairica</i> (L.) Sw.	104	<i>Kyllingia brevifolia</i> Rottb.	139
<i>Ipomoea hederifolia</i> L.	104	<i>Kyllingia nemoralis</i> (J.R. & G. Forst.) Dandy ex	139
<i>Ipomoea nil</i> (L.) Roth var. <i>nil</i>	104	Hutch. & Dalz.	
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	104	<i>Kyllingia odorata</i> Vahl ssp. <i>cylindrica</i> (Nees) T. Koy.	140
<i>Ipomoea pes-tigridis</i> L.	104	Labiatae	111
<i>Ipomoea siamensis</i> Craib	104	<i>Lablab purpureus</i> (L.) Sw. ssp. <i>purpureus</i>	82

<i>Lactuca parishii</i> Craib ex Hoss.	96	<i>Limnophila chinensis</i> (Osb.) Merr.	105
<i>Lagerstroemia cochinchinensis</i> Pierre var. <i>ovalifolia</i> Furt. & Mont.	86	<i>Limnophila hayatae</i> Yama.	105
<i>Lagerstroemia collettii</i> Craib	87	<i>Limnophila indica</i> (L.) Druce	105
<i>Lagerstroemia hossei</i> Koeh.	87	<i>Limnophila repens</i> (Bth.) Bth.	105
<i>Lagerstroemia intermedia</i> Koeh. var. <i>oblonga</i> Craib	87	<i>Limnophila rugosa</i> (Roth) Merr.	105
<i>Lagerstroemia macrocarpa</i> Kurz var. <i>macrocarpa</i>	87	<i>Limnophila villifera</i> Miq. ssp. <i>gracilipes</i> (Craib ex Hoss.) Yama.	38
<i>Lagerstroemia speciosa</i> (L.) Pers. var. <i>speciosa</i>	53	Linaceae	71
<i>Lagerstroemia venusta</i> Wall. ex Cl.	87	<i>Lindenbergia indica</i> (L.) Vat.	105
<i>Lagerstroemia villosa</i> Wall. ex Kurz	87	<i>Lindenbergia philippensis</i> (Cham.) Bth.	105
<i>Laggera alata</i> (D. Don) Sch. Bip. ex Oliv.	96	<i>Lindera caudata</i> (Wall. ex Nees) Bth.	114
<i>Laggera aurita</i> (L. f.) Sch. Bip. ex Schw.	96	<i>Lindernia anagallis</i> (Burm. f.) Penn.	105
<i>Laggera pterodonta</i> (DC.) Sch. Bip. ex Oliv.	96	<i>Lindernia antipoda</i> (L.) Alst.	105
<i>Lannea coromandelica</i> (Houtt.) Merr.	76	<i>Lindernia ciliata</i> (Colsm.) Penn.	105
<i>Lantana camara</i> L.	110	<i>Lindernia crustacea</i> (L.) F. Muell. var. <i>crustacea</i>	105
<i>Laportea bulbifera</i> (Sieb. & Zucc.) Wedd.	123	<i>Lindernia hookeri</i> (Cl. ex Hk. f.) Wett. var. <i>cochinchinensis</i> Bon.	105
<i>Laportea interrupta</i> (L.) Chew	123	<i>Lindernia montana</i> (Bl.) Koord.	105
Lardizabalaceae	65	<i>Lindernia pusilla</i> (Willd.) Bold.	105
<i>Lasia spinosa</i> (L.) Thw.	131	<i>Lindernia viscosa</i> (Horn.) Bold.	105
<i>Lasianthus kerrii</i> Craib	38	<i>Lindsaea chienii</i> Ching	149
<i>Lasianthus kurzii</i> Hk. f.	92	<i>Lindsaea ensifolia</i> Sw. ssp. <i>ensifolia</i>	149
<i>Lasianthus lucidus</i> Bl.	92	Lindsaeaceae	149
Lauraceae	114	<i>Linociera caudata</i> Coll. & Hemsl.	100
Lecythidaceae	86	<i>Linociera ramiflora</i> (Roxb.) Wall. ex DC.	100
<i>Leea dentata</i> Craib	75	<i>Linociera sutepensis</i> Kerr	100
<i>Leea guineensis</i> G. Don	75	<i>Linostoma persimile</i> Craib	115
<i>Leea herbacea</i> Ham. ex Cl.	75	<i>Liparis craibiana</i> Kerr	136
<i>Leea indica</i> (Burm. f.) Merr.	75	<i>Liparis downii</i> Ridl.	136
<i>Leea macrophylla</i> Roxb. ex Horn.	75	<i>Liparis fimbriata</i> Kerr	137
<i>Leea pallida</i> Craib	75	<i>Liparis odorata</i> Lindl. var. <i>longiscapa</i> Rol. ex Dow.	136
<i>Leea rubra</i> Bl. ex Spreng.	75	<i>Liparis paradoxa</i> (Lindl.) Rchb. f.	136
Leeaceae	75	<i>Liparis regnieri</i> Fin.	136
<i>Leersia hexandra</i> Swz.	144	<i>Liparis siamensis</i> Rol. ex Dow.	136
Leguminosae, Caesalpinioideae	77	<i>Liparis sutepensis</i> Rol. ex Dow.	137
Leguminosae, Mimosoideae	76	<i>Liparis tenuis</i> Rol. ex Dow.	39
Leguminosae, Papilionoideae	78	<i>Liparis viridiflora</i> (Bl.) Lindl.	137
Lentibulariaceae	106	<i>Liparis wrayi</i> Hk. f.	137
<i>Lepidagathis incurva</i> Ham. ex D. Don	116	<i>Lipocarpha chinensis</i> (Osb.) Kern	141
<i>Lepionurus sylvestris</i> Bl.	116	<i>Lipocarpha hemisphaerica</i> (Roth) Goetgh.	141
<i>Lepisanthes tetraphylla</i> (Vahl) Radlk.	75	<i>Lipocarpha pygmaea</i> Kern	141
<i>Lepisorus bicolor</i> (Tag.) Ching	153	<i>Lipocarpha squarrosa</i> (L.) Goetgh.	141
<i>Lepisorus heterolepis</i> (Rosenst.) Ching	153	<i>Litchi chinensis</i> Sonn. ssp. <i>chinensis</i>	75
<i>Lepisorus nudus</i> (Hk.) Ching	153	<i>Lithocarpus aggregatus</i> Barn.	124
<i>Lepisorus scolopendrium</i> (Ham. ex D. Don) Tag.	153	<i>Lithocarpus craibianus</i> Barn.	124
<i>Lepisorus subconfluens</i> Ching	153	<i>Lithocarpus elegans</i> (Bl.) Hatus. ex Soep.	124
<i>Leptoboea multiflora</i> (Cl.) Gamb.	107	<i>Lithocarpus fenestratus</i> (Roxb.) Rehd.	124
<i>Leptochilus decurrens</i> Bl.	153	<i>Lithocarpus finetii</i> (Hick. & A. Camus) A. Camus	124
<i>Leptochilus ellipticus</i> (Thunb.) Noot.	153	<i>Lithocarpus garrettianus</i> (Craib) A. Camus	124
<i>Leptochloa chinensis</i> (L.) Nees	144	<i>Lithocarpus intermedius</i> Barn.	124
<i>Lespedeza parviflora</i> Kurz	82	<i>Lithocarpus lindleyanus</i> (Wall.) A. Camus	124
<i>Lespedeza pinetorum</i> Kurz	82	<i>Lithocarpus polystachytus</i> (A. DC.) Rehd.	124
<i>Leucas aspera</i> (Willd.) Link	111	<i>Lithocarpus sootepensis</i> (Craib) A. Camus	124
<i>Leucas flaccida</i> R. Br.	111	<i>Lithocarpus spicatus</i> (Sm.) Rehd. & Wils.	124
<i>Leucostegia immersa</i> Presl	149	var. <i>brevipetiolatus</i> (A. DC.) Rehd. & Wils.	124
Liliaceae	128	<i>Lithocarpus thomsonii</i> (Miq.) Rehd.	124
<i>Lilium primulinum</i> Bak. var. <i>burmanicum</i> (W. W. Sm.) Stearn	128	<i>Lithocarpus truncatus</i> (King) Rehd. & Wils.	124
<i>Limncharis flava</i> (L.) Buch.	125	<i>Litsea albicans</i> Kurz	114

<i>Litsea cubeba</i> (Lour.) Pers. var. <i>cubeba</i>	114	<i>Maesa ramentacea</i> (Roxb.) A. DC.	98
<i>Litsea firma</i> Bl.	114	<i>Magnolia liliifera</i> (L.) Baill. var. <i>obovata</i> (Korth.) Gov.	63
<i>Litsea glutinosa</i> (Lour.) C.B. Rob. var. <i>glutinosa</i>	114	Magnoliaceae	63
<i>Litsea monopetala</i> (Roxb.) Pers.	114	<i>Mahonia nepalensis</i> DC.	65
<i>Litsea pseudo-umbellata</i> Kosterm.	38	<i>Mahonia siamensis</i> Tak. ex Craib	65
<i>Litsea salicifolia</i> (Roxb. ex Nees) Hk.f.	114	<i>Malaxis calophylla</i> (Rchb. f.) Kze.	134
<i>Litsea semecarpifolia</i> Wall. ex Nees	114	<i>Mallotus barbatus</i> M.-A. var. <i>barbatus</i>	118
<i>Litsea zeylanica</i> (Nees) Nees	114	<i>Mallotus khasianus</i> Hk. f.	118
<i>Livistona speciosa</i> Kurz	132	<i>Mallotus oblongifolius</i> (Miq.) M.-A.	118
<i>Lobelia alsinoides</i> Lmk.	97	<i>Mallotus paniculatus</i> (Lmk.) M.-A.	118
<i>Lobelia angulata</i> Forst.	97	<i>Mallotus peltatus</i> (Geisel.) M.-A.	118
<i>Lobelia nicotianaefolia</i> Roth ex R. & S.	97	<i>Mallotus philippensis</i> (Lmk.) M.-A.	118
<i>Lobelia zeylanica</i> L.	97	<i>Mallotus pierreii</i> (Gagnep.) A. S.	118
Loganiaceae	103	<i>Mallotus repandus</i> (Willd.) M.-A.	118
Lomariopsidaceae	151	Malpighiaceae	71
<i>Lonicera ferruginea</i> Rehd.	90	<i>Malus doumeri</i> (Bois.) Cher.	53
<i>Lonicera siamensis</i> Gamb.	90	Malvaceae	68
<i>Lophopetalum wallichii</i> Kurz	73	<i>Mammea siamensis</i> (Miq.) T. And.	67
Loranthaceae	115	<i>Mananthes pallida</i> (Im.) Brem.	108
<i>Loranthus cultarum</i> Craib	115	<i>Mangifera caloneura</i> Kurz	76
<i>Loranthus kerrii</i> Craib	115	<i>Mangifera indica</i> L.	53
<i>Loranthus sootepensis</i> Craib	116	<i>Manglietia garrettii</i> Craib	63
<i>Loxogramme chinensis</i> Ching	153	<i>Maoutia puya</i> (Wall. ex Hk.) Wedd.	123
<i>Ludwigia adscendens</i> (L.) Hara	87	Marantaceae	128
<i>Ludwigia hyssopifolia</i> (G. Don) Exell	87	Marattiaceae	148
<i>Luffa cylindrica</i> (L.) M.J. Roem.	88	<i>Markhamia stipulata</i> (Wall.) Seem. ex K. Sch.	107
<i>Luisia thailandica</i> Seid.	137	var. <i>kerrii</i> Sprague	
<i>Luvunga scandens</i> (Roxb.) Ham. ex Wight	72	<i>Markhamia stipulata</i> (Wall.) Seem. ex K. Sch.	107
<i>Lycianthes macrodon</i> (Wall. ex Nees) Bitt.	104	var. <i>stipulata</i>	
<i>Lycopersicon lycopersicum</i> (L.) Karst.	53	<i>Marsdenia cambodiensis</i> Cost.	102
Lycopodiaceae	147	<i>Marsdenia aff. eriocalis</i> Kerr	102
<i>Lycopodium cernuum</i> L.	147	<i>Marsdenia aff. tenacissima</i> (Roxb.) Moon	102
<i>Lycopodium squarrosum</i> Forst.	147	<i>Marsdenia tenacissima</i> (Roxb.) Moon	102
<i>Lygodium flexuosum</i> (L.) Sw.	148	<i>Marsdenia thyrsiflora</i> Hk. f.	102
<i>Lygodium giganteum</i> Tag. & K. Iw.	148	<i>Marsdenia tinctoria</i> R. Br.	102
<i>Lygodium japonicum</i> (Thunb.) Sw.	148	<i>Marsilea crenata</i> Presl	154
<i>Lygodium polystachyum</i> Wall. ex Moore	148	Marsileaceae	154
<i>Lyonia ovalifolia</i> (Wall.) Druce	97	<i>Mastixia euonymoides</i> Prain	89
<i>Lysimachia lancifolia</i> Craib	98	<i>Mazus pumilus</i> (Burm. f.) Steen. var. <i>pumilus</i>	105
<i>Lysimachia peduncularis</i> Wall. ex Kurz	98	<i>Mecodium exsertum</i> (Wall. ex Hk.)	148
<i>Lysimachia remotiflora</i> C.M. Hu	98	<i>Megistostigma burmanicum</i> (Kurz) A.S.	118
Lythraceae	86	<i>Melastoma malabathricum</i> L. ssp. <i>malabathricum</i>	86
<i>Macaranga andersonii</i> Craib	118	<i>Melastoma malabathricum</i> L. ssp. <i>normale</i>	86
<i>Macaranga denticulata</i> (Bl.) M.-A.	118	(D. Don) K. Meyer	
<i>Macaranga kurzii</i> (O.K.) Pax & Hoffm.	118	<i>Melastoma normale</i> D. Don	86
<i>Machilus bombycina</i> King ex Hk.f.	114	Melastomataceae	86
<i>Maclura amboinensis</i> Bl. var. <i>amboinensis</i>	122	<i>Melia dubia</i> Cav.	73
<i>Maclura cochinchinensis</i> (Lour.) Corn. var. <i>pubescens</i> (Trec.) Corn.	122	<i>Melia toosendan</i> Sieb. & Zucc.	73
<i>Maclura fruticosa</i> (Roxb.) Corn.	122	Meliaceae	72
<i>Macropanax dispermus</i> (Bl.) O.K.	89	<i>Melientha suavis</i> Pierre ssp. <i>suavis</i>	116
<i>Macroptilium atropurpureum</i> (DC.) Urb. cv. <i>siratro</i>	82	<i>Meliosma pinnata</i> (Roxb.) Maxim. ssp. <i>arnottiana</i>	76
<i>Macrosolen avenis</i> (Bl.) Dans.	115	(Wight) Beus. var. <i>arnottiana</i>	
<i>Macrosolen lowii</i> (King) Tiegh.	115	<i>Meliosma simplicifolia</i> (Roxb.) Walp. ssp. <i>fordii</i>	76
<i>Macrotyloma uniflorum</i> (Lmk.) Verd. var. <i>uniflorum</i>	82	(Hemsl. ex Forb. & Hemsl.) Beus.	
<i>Madhuca stipulacea</i> Flet.	99	<i>Meliosma simplicifolia</i> (Roxb.) Walp. var. <i>sootepensis</i> Craib	76
<i>Maesa montana</i> A. DC.	98	<i>Melocanna baccifera</i> (Roxb.) Kurz	
<i>Maesa permolis</i> Kurz	98	<i>Melochia corchorifolia</i> L.	69

<i>Melodinus cochinchinensis</i> (Lour.) Merr.	101	<i>Mitracarpus villosus</i> (Sw.) DC.	92
<i>Melodinus henryi</i> Craib	101	<i>Mitragyna hirsuta</i> Hav.	92
<i>Melodorum affine</i> Craib	64	<i>Mitragyna rotundifolia</i> (Roxb.) O.K.	92
<i>Melodorum oblongum</i> Craib	64	<i>Mitreola petiolata</i> (Gmel.) Torr. & Gray	103
<i>Memecylon plebejum</i> Kurz	86	<i>Mitrephora maingayi</i> Hk. f. & Thoms.	64
<i>Memecylon plebejum</i> Kurz var. <i>siamense</i> Craib	86	<i>Mitrephora vandaeiflora</i> Kurz	64
<i>Memecylon plebejum</i> Kurz var. <i>symplocinum</i> Craib	86	<i>Mnesithea granularis</i> (L.) Kon. & Sos.	144
<i>Memecylon scutellatum</i> (Lour.) Naud.	86	<i>Mnesithea mollicoma</i> (Hance) A. Camus	144
Menispermaceae	64	<i>Mnesithea striata</i> (Nees ex Steud.) Kon. & Sos.	144
<i>Mentha arvensis</i> L.	53	<i>Molineria capitulata</i> (Lour.) O.K.	129
<i>Merremia umbellata</i> (L.) Hall. f. ssp. <i>orientalis</i> (Hall. f.) Oost.	104	<i>Mollugo pentaphylla</i> L.	89
<i>Merremia vitifolia</i> (Burm. f.) Hall. f.	104	<i>Momordica charantia</i> L.	88
<i>Mesua ferrea</i> L.	67	<i>Monemeria barbata</i> Lindl.	137
<i>Metadina trichotoma</i> (Zoll. & Mor.) Bakh. f.	92	<i>Monotropa hypopitys</i> L.	98
<i>Michelia baillonii</i> Pierre	63	Monotropaceae	98
<i>Michelia champaca</i> L. var. <i>champaca</i>	63	Moraceae	120
<i>Michelia floribunda</i> Fin. & Gagnep.	63	<i>Morinda angustifolia</i> Roxb. var. <i>scabridula</i> Craib	92
<i>Michelia kerrii</i> Craib	63	<i>Morinda tomentosa</i> Hey. ex Roth	92
<i>Microcos paniculata</i> L.	70	<i>Morus macroura</i> Miq.	122
<i>Microglossa pyrifolia</i> (Lmk.) O.K.	96	<i>Mucuna bracteata</i> A. DC.	82
<i>Microlepia platyphylla</i> (D. Don) J. Sm.	149	<i>Mucuna brevipes</i> Craib	82
<i>Microlepia puberula</i> v. A. v. Ros.	149	<i>Mucuna macrocarpa</i> Wall.	82
<i>Microlepia speluncae</i> (L.) Moore	149	<i>Mucuna pruriens</i> (L.) A. DC. var. <i>pruriens</i>	83
<i>Microlepia strigosa</i> (Thunb.) Presl	149	<i>Mukia maderaspatana</i> (L.) M.J. Roem.	88
<i>Micromelum falcatum</i> (Lour.) Tana.	72	<i>Munronia humilis</i> (Blanco) Harms	73
<i>Micromelum hirsutum</i> Oliv.	72	<i>Muntingia calabura</i> L.	70
<i>Micromelum minutum</i> (Forst. f.) Wight & Arn.	72	<i>Murdannia loureirii</i> (Hance) Rao & Kam.	126
<i>Microsorium membranaceum</i> (D. Don) Ching	154	<i>Murdannia nudiflora</i> (L.) Bren.	126
<i>Microstegium vagans</i> (Nees ex Steud.) A. Camus	144	<i>Murdannia scapiflora</i> (Roxb.) Roy.	126
<i>Microstylis carnulosa</i> Rol. ex Dow.	39	<i>Musa acuminata</i> Colla ssp. <i>siamea</i> Simm.	126
<i>Microstylis siamensis</i> Rol. ex Dow.	134	<i>Musa balbisiana</i> Colla	126
<i>Microstylis sutehensis</i> Rol. ex Dow.	134	<i>Musa itinerans</i> Cheesm.	126
<i>Microstylis tenebrosa</i> Rol. ex Dow.	134	<i>Musa paradisica</i> L.	53
<i>Mikania cordata</i> (Burm. f.) B. L. Rob. forma <i>undulata</i> Kost.	96	<i>Musa sikkimensis</i> Kurz	126
<i>Miliusa cuneata</i> Craib	64	Musaceae	126
<i>Miliusa thorelli</i> Fin. & Gagnep.	64	<i>Mussaenda hossei</i> Craib ex Hoss.	92
<i>Miliusa velutina</i> (Dun.) Hk. f. & Thoms.	64	<i>Mussaenda kerrii</i> Craib	92
<i>Millettia brandisiana</i> Kurz	82	<i>Mussaenda neosootehensis</i> Craib	92
<i>Millettia caerulea</i> Grah. ex Baker	82	<i>Mussaenda parva</i> Wall. ex G. Don	92
<i>Millettia extensa</i> (Bth.) Bth. ex Baker	82	<i>Mussaenda sanderiana</i> Radl.	92
<i>Millettia aff. glaucescens</i> Kurz var. <i>glaucescens</i>	82	<i>Mussaenda sutehensis</i> Hoss.	92
<i>Millettia latifolia</i> Dunn	82	<i>Mycetia glandulosa</i> Craib	92
<i>Millettia macrostachya</i> Coll. & Hemsl. var. <i>macrostachya</i>	82	<i>Mycetia gracilis</i> Craib	92
<i>Millettia pachycarpa</i> Bth.	82	<i>Mycetia longifolia</i> (G. Don) K. Sch.	92
<i>Millettia pendula</i> Bth. ex Baker	82	<i>Mycetia rivicola</i> Craib	92
<i>Millettia pubinervis</i> Kurz	82	<i>Myosoton aquaticum</i> (L.) Moen.	66
<i>Millettia xylocarpa</i> Miq.	82	<i>Myrica esculenta</i> B. -H. ex D. Don	123
<i>Millingtonia hortensis</i> L. f.	107	Myricaceae	123
<i>Mimosa diplotricha</i> C. Wright ex Sauv. var. <i>diplotricha</i>	77	<i>Myriopterum extensum</i> (Wight) K. Sch.	102
<i>Mimosa invisa</i> Mart. ex Colla var. <i>invisa</i>	77	Myristicaceae	114
<i>Mimosa pigra</i> L.	77	Myrsinaceae	98
<i>Mimosa pudica</i> L. var. <i>hispida</i> Bren.	77	Myrtaceae	85
<i>Mimosa pudica</i> L. var. <i>unijuga</i> (Duch. & Walp.) Griseb.	77	<i>Myxopyrum smilacifolium</i> (Wall.) Bl. ssp. <i>confertum</i> (Kerr) Kiew	100
<i>Mirabilis jalapa</i> L.	112	<i>Naravelia siamensis</i> Craib	63
<i>Mischocarpus pentapetalus</i> (Roxb.) Radlk.	75	<i>Narenga fallax</i> (Balan.) Bor	145
		<i>Nelsonia canescens</i> (Lmk.) Spr.	108
		<i>Neosomitra angustipetala</i> (Craib) Hutch.	88

<i>Neosalsomitra integrifoliola</i> (Cogn.) Hutch.	149	Orchidaceae	132
<i>Neosalsomitra sarcophylla</i> (Wall.) Hutch.	88	<i>Oreocnide rubescens</i> Bl.	123
<i>Nephrolepis biserrata</i> (Sw.) Schott	149	<i>Ormosia sumatrana</i> (Miq.) Prain	83
<i>Neohouzeaua dullooa</i> (Gamb.) A. Camus	147	<i>Ornithochilus difformis</i> (Wall. ex Lindl.) Schltr.	137
<i>Nephrolepis cordifolia</i> (L.) Presl	149	<i>Ornithochilus fuscus</i> Wall. ex Lindl.	137
<i>Nephrolepis delicatula</i> (Dcne.) Pichi-Ser.	149	Orobanchaceae	106
<i>Nervilia aragoana</i> Gaud.	137	<i>Oroxylum indicum</i> (L.) Kurz	107
<i>Nervilia calcicola</i> Kerr	137	<i>Orthosiphon aristatus</i> (Bl.) Miq.	111
<i>Nervilia crociformis</i> (Zoll. & Mor.) Seid.	137	<i>Orthosiphon rubicundus</i> (D. Don) Bth.	111
<i>Nervilia plicata</i> (Andr.) Schltr.	137	<i>Orthosiphon tagawae</i> Murata	111
<i>Nervilia prainiana</i> (King & Pantl.) Seid.	137	<i>Orthosiphon</i> sp.	111
<i>Neuracanthus tetragonostachyus</i> Nees ssp. tetragonostachys	108	<i>Oryza meyeriana</i> (Zoll. & Mor.) Baill. var. <i>granulata</i> (Watt) Duist.	145
<i>Nicotiana tabacum</i> L.	53	<i>Oryza sativa</i> L.	53
<i>Nogra grahamii</i> (Bth.) Merr.	82	<i>Osbeckia chinensis</i> L. var. <i>chinensis</i>	86
Nyctaginaceae	112	<i>Osbeckia chinensis</i> L. var. <i>pusilla</i> (Zoll.) Triana	38
<i>Nyssa bifida</i> Craib	89	<i>Osbeckia paludosa</i> Craib	86
<i>Nyssa javanica</i> (Bl.) Wang.	89	<i>Osbeckia parva</i> Gedd.	38
Nyssaceae	89	<i>Osbeckia pulchra</i> Gedd.	86
<i>Oberonia acaulis</i> Griff.	137	<i>Osbeckia pulchra</i> Gedd. var. <i>rubra</i> Craib	86
<i>Oberonia hosseusii</i> Schltr. ex Hoss.	137	<i>Osbeckia racemosa</i> Craib	86
<i>Oberonia pachyphylla</i> King & Pantl.	137	<i>Osbeckia stellata</i> Ham. ex Ker-Gawl. var. <i>crinita</i> (Bth. ex Naud.) C. Han.	86
<i>Oberonia umbraticola</i> Rol.	137	<i>Osbeckia stellata</i> Ham. ex Ker-Gawl. var. <i>marginulata</i> (Cl.) C. Han.	86
<i>Ochna integerrima</i> (Lour.) Merr.	72	<i>Ostodes kerrii</i> Craib	118
Ochnaceae	72	<i>Ostodes paniculata</i> Bl.	118
<i>Ocimum basilicum</i> L.	53	<i>Otochilus albus</i> Lindl.	137
<i>Oenanthe javanica</i> (Bl.) DC.	89	<i>Otochloa nodosa</i> (Kunth) Dandy	145
Olacaceae	73	Oxalidaceae	71
<i>Olax imbricata</i> Roxb.	73	<i>Oxalis corniculata</i> L.	71
<i>Olax scandens</i> Roxb.	73	<i>Oxalis corymbosa</i> DC.	71
<i>Olea oblanceolata</i> Craib	100	<i>Oxyceros horridus</i> Lour.	93
<i>Olea rosea</i> Craib	100	<i>Oxystelma esculentum</i> (L. f.) R. Br.	102
<i>Olea salicifolia</i> Wall. ex G. Don	100	<i>Pachygone dasycarpa</i> Kurz	64
Oleaceae	100	<i>Pachypleuria repens</i> (L. f.) M. Kato	149
<i>Oleandra undulata</i> (Willd.) Ching	149	<i>Pachyrhizus erosus</i> (L.) Urb.	83
Oleandraceae	149	<i>Pachystoma pubescens</i> Bl.	137
Onagraceae	87	<i>Padbruggea pubescens</i> Craib	79
<i>Operculina turpethum</i> (L.) S. Manso	104	<i>Paederia kerrii</i> Craib	93
Ophioglossaceae	148	<i>Paederia pallida</i> Craib	93
<i>Ophioglossum petiolatum</i> Hk.	148	<i>Paederia pilifera</i> Hk. f.	93
<i>Ophiopogon brevipes</i> Craib	128	<i>Paederia pilifera</i> Hk. f. var. <i>siamensis</i> Craib	93
<i>Ophiopogon gracilipes</i> Craib	128	<i>Paederia scandens</i> (Lour.) Merr.	93
<i>Ophiopogon intermedius</i> D. Don	128	<i>Paederia wallichii</i> Hk. f.	93
<i>Ophiopogon longifolius</i> Decne.	128	<i>Palaquium garrettii</i> Flet.	99
<i>Ophiopogon malcolmsonii</i> Roy. ex Hk. f.	128	Palmae	132
<i>Ophiopogon marmoratus</i> Pierre ex Rodr.	129	Pandanaceae	132
<i>Ophiopogon regnieri</i> Bois	129	<i>Pandanus penetrans</i> St. John	132
<i>Ophiopogon reptans</i> Hk. f.	129	<i>Panicum humile</i> Nees ex Steud.	145
<i>Ophiorthiza hispidula</i> Wall. ex G. Don var. <i>hispidula</i>	92	<i>Panicum maximum</i> Jacq.	145
<i>Ophiorthiza ridleyana</i> Craib	92	<i>Panicum miliaceum</i> L.	145
<i>Ophiorthiza rosea</i> Hk. f.	92	<i>Panicum notatum</i> Retz.	145
<i>Ophiorthiza villosa</i> Roxb.	93	<i>Panicum repens</i> L.	145
<i>Ophiorthiziphyllon macrobotryum</i> Kurz	108	<i>Panicum walense</i> Mez	145
<i>Ophiuros exaltatus</i> (L. f.) O.K.	144	<i>Papaver somniferum</i> L.	65
<i>Opilia amentacea</i> Roxb.	116	Papaveriaceae	65
Opiliaceae	116	<i>Paphiopedalum callosum</i> (Rchb.f.) Pfitz.	159
<i>Opismenus burmannii</i> (Retz.) P. Beauv.	144		
<i>Opismenus compositus</i> (L.) P. Beauv.	145		

<i>Parabaena sagittata</i> Miers ex Hk. f. & Th.	65	<i>Phoebe lanceolata</i> (Wall. ex Nees) Nees	115
<i>Paraboea kerrii</i> (Craib) Burt	107	<i>Phoebe</i> (? <i>neuranthoides</i> S. Lee & F. N. Wei)	115
<i>Paracalyx scarious</i> (Roxb.) Ali	79	<i>Phoebe pallida</i> (Nees) Nees	115
<i>Parameria laevigata</i> (Juss.) Mold.	101	<i>Phoenix humilis</i> Roy. var. <i>loureiri</i> (Kunth) Becc.	132
<i>Paramichelia baillonii</i> (Pierre) Hu	63	<i>Phoenix loureiri</i> Kunth var. <i>loureiri</i>	132
<i>Paramignya scandens</i> (Griff.) Craib var. <i>scandens</i>	72	<i>Pholidota articulata</i> Lindl.	137
<i>Paramignya surasiana</i> Craib	38	<i>Pholidota bracteata</i> (D. Don) Seid.	137
<i>Parasympagis kerrii</i> Brem.	109	<i>Pholidota convallariae</i> (Rchb. f.) Hk. f. var.	137
<i>Parinari anamensis</i> Hance	84	<i>convallariae</i>	
<i>Parinarium albidum</i> Craib	84	<i>Pholidota imbricata</i> Hk.	137
<i>Paris polyphylla</i> J.E. Smith	129	<i>Phragmites vallatoria</i> (Pluk. ex L.) Veldk.	145
Parkeriaceae	149	<i>Phrynium capitatum</i> Willd.	128
<i>Parthenocissus semicorata</i> (Wall.) Pl.	74	<i>Phyllanthus majus</i> Coll. & Hemsl.	83
<i>Parvatia brunoniana</i> Wall. ex Dcne.	65	<i>Phyllanthodendron album</i> Craib & Hutch.	119
<i>Paspalidium flavidum</i> (Retz.) A. Camus	146	<i>Phyllanthodendron roseum</i> Craib & Hutch. var.	119
<i>Paspalum conjugatum</i> Berg.	145	<i>glabrum</i> Craib ex Hoss.	119
<i>Paspalum orbiculare</i> Forst.	145	<i>Phyllanthodendron roseum</i> Craib & Hutch. var.	119
<i>Paspalum scrobiculatum</i> L. var. <i>bispicatum</i> Hack.	145	<i>siamensis</i> (Pax & Hoffm.) Craib	
<i>Passiflora foetida</i> L.	87	<i>Phyllanthus amarus</i> Schum. & Thonn.	119
<i>Passiflora siamica</i> Craib	87	<i>Phyllanthus columnaris</i> M.-A.	119
Passifloraceae	87	<i>Phyllanthus emblica</i> L.	119
<i>Pavetta fruticosa</i> Craib	93	<i>Phyllanthus kerrii</i> A.S.	119
<i>Pavetta indica</i> L.	93	<i>Phyllanthus reticulatus</i> Poir.	119
<i>Pavetta tomentosa</i> Roxb. ex Sm. var. <i>tomentosa</i>	93	<i>Phyllanthus roseus</i> (Craib & Hutch.) Beille	119
<i>Pavonia repanda</i> (Roxb. ex J.E. Sm.) Spreng.	68	<i>Phyllanthus sootepensis</i> Craib	119
<i>Pecteilis henryi</i> Schltr.	39	<i>Phyllanthus urinaria</i> L.	119
<i>Pecteilis susannae</i> (L.) Raf.	137	<i>Phyllanthus virgatus</i> Forst. f.	119
<i>Pegia nitida</i> Colebr.	76	<i>Physalis angulata</i> L.	104
<i>Peliosanthes gracilipes</i> (Craib) N. Tana.	129	<i>Picrasma javanica</i> Bl.	72
<i>Peliosanthes teta</i> Andr. ssp. <i>humilis</i> (Andr.) Jess.	129	<i>Pilea anisophylla</i> Wedd.	123
<i>Pellionia latifolia</i> (Bl.) Boerl.	123	<i>Pilea microphylla</i> (L.) Liebm.	123
<i>Pellionia repens</i> (Lour.) Merr.	123	<i>Pilea trinervia</i> Wight	123
<i>Peltophorum dasyrhabis</i> (Miq.) Kurz var. <i>dasyrhabis</i>	78	<i>Piloselloides hirsuta</i> (Forsk.) C. Jeff.	96
<i>Pennisetum pedicellatum</i> Trin.	145	Pinaceae	147
<i>Pennisetum polystachyon</i> (L.) Schult.	145	<i>Pinus kesiya</i> Roy. ex Gord.	147
<i>Pennisetum purpureum</i> Schumacher.	145	<i>Pinus merkusii</i> Jungh. & De Vriese	147
<i>Peperomia pellucida</i> (L.) H.B.K.	113	<i>Piper argyrophyllum</i> Miq.	113
<i>Peperomia tetraphylla</i> (Forst. f.) Hk. & Arn.	113	<i>Piper betel</i> L.	53
<i>Pericampylus glaucus</i> (Lmk.) Merr.	65	<i>Piper boehmaeriaefolium</i> (Miq.) C. DC. var.	113
<i>Perilepta siamensis</i> (Cl.) Brem.	108	<i>boehmaeriaefolium</i>	
<i>Peristrophe bicalyculata</i> (Retz.) Nees	108	<i>Piper longum</i> L.	113
<i>Peristrophe lanceolaria</i> (Roxb.) Nees	108	<i>Piper muricatum</i> Bl.	113
<i>Peristylus constrictus</i> (Lindl.) Lindl.	137	<i>Piper aff. pedicellatum</i> C. DC.	113
<i>Peristylus goodyeroides</i> (D. Don) Lindl.	137	<i>Piper aff. peepuloides</i> Roxb.	113
<i>Peristylus gracilis</i> Bl.	137	<i>Piper retrofractum</i> Vahl	113
<i>Peristylus lacertiferus</i> (Lindl.) J.J. Sm.	137	Piperaceae	113
<i>Peristylus tentaculatus</i> (Lindl.) J.J. Sm.	137	Pittosporaceae	66
<i>Perotis indica</i> (L.) O.K.	145	<i>Pittosporopsis kerrii</i> Craib	73
<i>Persea americana</i> L.	53	<i>Pittosporum nepaulense</i> (DC.) Rehd. & Wils.	66
<i>Persea chartacea</i> Kosterm.	114	<i>Pityrogramma calomelanos</i> (L.) Link	150
<i>Petrocosmea kerrii</i> Craib	107	Plantaginaceae	98
<i>Petroselinum crispum</i> (Mill.) A.W. Hill	53	<i>Plantago major</i> L.	98
<i>Phaius tankervilleae</i> (Banks ex L' Her.) Bl.	137, 159	<i>Platanthera lacei</i> Rol. ex Dow.	39
<i>Phalaenopsis cornu-cervi</i> (Breda) Bl. & Rchb. f.	137	<i>Platea latifolia</i> Bl.	73
<i>Phaseolus vulgaris</i> L.	83	<i>Platostoma coloratum</i> (D. Don) A.J. Paton	111
<i>Phaulopsis dorsiflora</i> (Retz.) Sant.	108	<i>Platostoma siamense</i> (Murata) A. J. Paton	111
<i>Phlogacanthus curviflorus</i> (Wall.) Nees var. <i>curviflorus</i>	108	<i>Platostoma</i> sp.	111
<i>Phoebe cathia</i> (D. Don) Kosterm.	115	<i>Platynerium wallichii</i> Hk.	154

<i>Plectocomia kerrana</i> Becc.	132	<i>Potameia siamensis</i> Kosterm.	115
<i>Plectranthus coetsa</i> B.-H. ex D. Don	111	<i>Pothos cathcartii</i> Schott	131
<i>Plectranthus glabratus</i> (Bth.) Alst.	111	<i>Pothos chinensis</i> (Raf.) Merr.	131
<i>Plectranthus hispidus</i> Bth.	112	<i>Pottisia laxiflora</i> (Bl.) O. K.	101
<i>Plectranthus hosseusii</i> Musch.	112	<i>Pouteria grandifolia</i> (Wall.) Baeh.	99
<i>Plectranthus lophanthoides</i> (B.-H. D. Don)	112	<i>Pouzolzia hirta</i> Hassk.	123
Grier. & Long		<i>Pouzolzia pentandra</i> (Roxb.) Benn.	123
<i>Plectranthus striatus</i> Bth.	112	<i>Pouzolzia zeylanica</i> (L.) Benn.	123
<i>Plectranthus ternifolius</i> D. Don	112	<i>Pratia begoniifolia</i> (Wall. ex Roxb.) Lindl.	97
<i>Pleocnemia irregularis</i> (Presl) Holtt.	151	<i>Premna fulva</i> Craib	110
<i>Pluchea polygonata</i> (DC.) Gagnep.	96	<i>Premna herbacea</i> Roxb.	110
<i>Pneumatopteris truncata</i> (Poir.) K. Iw.	152	<i>Premna latifolia</i> Roxb. var. <i>latifolia</i>	110
<i>Poa annua</i> L.	145	<i>Premna nana</i> Coll. & Hemsl.	110
Podocarpaceae	147	<i>Premna pyramidata</i> Wall. ex Schauer	110
<i>Podocarpus neriifolius</i> D. Don	147	<i>Premna scandens</i> Roxb.	110
<i>Pogonatherum paniceum</i> (Lmk.) Hack.	145	<i>Premna villosa</i> Cl.	110
<i>Pogostemon auricularius</i> (L.) Hassk.	112	Primulaceae	98
<i>Pogostemon menthoides</i> Bl.	112	<i>Prismatomeris tetrandra</i> (Roxb.) K. Sch. ssp. <i>tetrandra</i>	93
<i>Pogostemon purpurascens</i> Dalz.	112	<i>Pronephrium nudatum</i> (Roxb.) Holtt.	152
<i>Pogostemon wattii</i> Cl.	112	Proteaceae	115
<i>Polia hasskarlii</i> R. Rao	126	<i>Protium serratum</i> (Wall. ex Colebr.) Engl.	72
<i>Polyalthia debilis</i> (Pierre) Fin. & Gagnep.	64	<i>Prunus arborea</i> (Bl.) Kalk. var. <i>montana</i> (Hk. f.) Kalk.	84
<i>Polyalthia littoralis</i> (Bl.) Boerl.	64	<i>Prunus cerasoides</i> D. Don	84
<i>Polyalthia simiarum</i> (Ham. ex Hk. f. & Th.) Bth. ex	64	<i>Prunus hosseusii</i> Diels	84
Hk. f. & Th.		<i>Prunus javanica</i> (T. & B.) Miq.	84
<i>Polyalthia</i> sp.	64	<i>Prunus persica</i> (L.) Bat.	53
<i>Polygala chinensis</i> L.	66	<i>Prunus wallichii</i> Steud.	84
<i>Polygala longifolia</i> Poir.	66	<i>Pseuderanthemum aff. crenulatum</i> (Wall. ex	108
<i>Polygala persicariaefolia</i> DC.	66	Lindl.) Radlk.	
<i>Polygala tricholopha</i> Chod.	66	<i>Pseuderanthemum latifolium</i> (Vahl) B. Han.	109
<i>Polygala triflora</i> L.	66	<i>Pseuderanthemum parishii</i> (T. And.) Lindau	109
<i>Polygala umbonata</i> Craib	66	<i>Pseuderanthemum siamensis</i> Im.	109
Polygalaceae	66	<i>Pseudoechinolaena polystachya</i> (H.B.K.) Stapf	145
Polygonaceae	112	<i>Pseudopogonatherum contortum</i> (Brongn.) A. Camus	145
<i>Polygonatum kingianum</i> Coll. & Hemsl.	129	<i>Pseudopogonatherum irritans</i> (R. Br.) A. Camus	145
<i>Polygonum barbatum</i> L.	113	<i>Psidium guajava</i> L.	53
<i>Polygonum chinense</i> L.	113	Psilotaceae	147
<i>Polygonum flaccidum</i> Meissn.	113	<i>Psilotrichum ferrugineum</i> (Roxb.) Moq.-Tand.	112
<i>Polygonum nepalense</i> Meissn.	113	<i>Psilotum nudum</i> (L.) Beauv.	147, 159
<i>Polygonum odoratum</i> Lour.	113	<i>Psychotria adenophylla</i> Wall.	93
<i>Polygonum plebeium</i> R. Br.	113	<i>Psychotria monticola</i> Kurz var. <i>monticola</i>	93
<i>Polyosma elongata</i> Gedd.	85	<i>Psychotria ophioxylodes</i> Wall.	93
Polypodiaceae	153	<i>Psychotria sempervirens</i> Gedd.	38
<i>Polypodium amoenum</i> (J. Sm. ex Hk. & Grev.) Mett.	154	<i>Psychotria siamica</i> (Craib) Hutch.	93
<i>Polypodium argutum</i> (J. Sm. ex Hk. & Grev.) Hk.	154	Pteridaceae	150
<i>Polypodium manmeiense</i> Christ	154	<i>Pteridium aquilinum</i> (L.) Kuhn ssp. <i>aquilinum</i>	149
<i>Polypodium subauriculatum</i> Bl.	154	var. <i>wightianum</i> (Ag.) Try.	147
<i>Polystachya concreta</i> (Jacq.) Garay & Sweet	138	Pteridophyta	150
<i>Polystichum attenuatum</i> Tag. & K. Iw.	151	<i>Pteris asperula</i> J. Sm. ex Hieron.	150
<i>Polystichum biaristatum</i> (Bl.) Moore	151	<i>Pteris biauarta</i> L.	150
<i>Polystichum eximium</i> (Kuhn) C. Chr.	151	<i>Pteris cretica</i> L.	150
<i>Polytoca digitata</i> (L. f.) Druce	145	<i>Pteris decrescens</i> Christ	150
<i>Polytrias indica</i> (Houtt.) Veldk.	145	<i>Pteris ensiformis</i> Burm. f.	150
<i>Porana racemosa</i> Roxb.	104	<i>Pteris heteromorpha</i> Fee	150
<i>Porana spectabilis</i> Kurz	104	<i>Pteris longipes</i> D. Don	150
<i>Porana sutepensis</i> Kerr	38	<i>Pteris venusta</i> Kunze	150
<i>Portulaca oleracea</i> L.	66	<i>Pteris vittata</i> L.	150
Portulacaceae	66	<i>Pteris wallichiana</i> Ag.	150

<i>Pterocarpus macrocarpus</i> Kurz	150	<i>Rauvolfia verticillata</i> (Lour.) Baill.	101
<i>Pterocaulon redolens</i> (Forst. f.) F. Vill.	96	<i>Reevesia pubescens</i> Mast. var. <i>siamensis</i> (Craib) Anth.	69
<i>Pterocymbium tinctorium</i> (Blanco) Merr.	69	<i>Reevesia siamensis</i> Craib	69
<i>Pterolobium macropterum</i> Kurz	78	<i>Reinwardtia indica</i> Dum.	71
<i>Pterospermum acerifolium</i> Willd.	69	<i>Reissantia indica</i> (Willd.) Halle	73
<i>Pterospermum grandiflorum</i> Craib	69	<i>Remusatia pumila</i> (D. Don) Li & Hay	131
<i>Pterospermum semisagittatum</i> Ham. ex Roxb.	69	<i>Remusatia vivipara</i> (Lodd.) Schott	131
<i>Pueraria alopecuroides</i> Craib	83	Rhamnaceae	74
<i>Pueraria imbricata</i> Maes.	83	<i>Rhamnus nipalensis</i> (Wall.) Laws.	74
<i>Pueraria mirifica</i> A. S. & Suvat.	83	<i>Rhaphidophora glauca</i> (Wall.) Schott	131
<i>Pueraria phaseoloides</i> (Roxb.) Bth. var. <i>phaseoloides</i>	83	<i>Rhaphidophora hookeri</i> Schott	131
<i>Pueraria phaseoloides</i> (Roxb.) Bth. var. <i>subspicata</i> (Bth.) Maes.	83	<i>Rhaphidophora peepla</i> (Roxb.) Schott	131
<i>Pueraria siamica</i> Craib	83	Rhizophoraceae	85
<i>Pueraria stricta</i> Kurz	83	<i>Rhododendron molumainense</i> Hk.	97
<i>Pueraria wallichii</i> DC.	83	<i>Rhododendron oxyphyllum</i> Fr.	97
<i>Pycnospora lutescens</i> (Poir.) Schindl.	83	<i>Rhododendron siamensis</i> Diels	97
<i>Pycreus flavidus</i> (Retz.) T. Koy.	139	<i>Rhododendron surasianum</i> Balf. f. & Craib	38
<i>Pycreus pumilus</i> (L.) Nees ssp. <i>membranaceus</i> (Vahl) T. Koy.	140	<i>Rhododendron vietchianum</i> Hk.	97
<i>Pycreus pumilus</i> (L.) Nees ssp. <i>pumilus</i>	140	<i>Rhus chinensis</i> Mill.	76
<i>Pycreus sulcinus</i> (Cl.) Cl.	140	<i>Rhus rhetoides</i> Craib	76
<i>Pycreus unioloides</i> (R. Br.) Urb.	140	<i>Rhus succedanea</i> L.	76
<i>Pyrenaria camelliiflora</i> Kurz	67	<i>Rhynchelytrum repens</i> (Willd.) C.E. Hubb.	145
<i>Pyrenaria garrettiana</i> Craib	67	<i>Rhynchosia verrucosa</i> (Bl.) Wood.	101
<i>Pyrtosia adnascens</i> (Sw.) Ching	154	<i>Rhynchoglossum obliquum</i> Bl.	107
<i>Pyrtosia eberhardtii</i> (Christ) Ching	154	<i>Rhynchogyna saccata</i> Seid. & Garay	138
<i>Pyrtosia lanceolata</i> (L.) Far.	154	<i>Rhynchosia bracteata</i> Bak.	83
<i>Pyrtosia mollis</i> (O.K.) Ching	154	<i>Rhynchospora rubra</i> (Lour.) Mak.	141
<i>Pyrtosia porosa</i> (Wall. ex Presl) Hoven. var. <i>porosa</i>	154	<i>Rhynchospora rugosa</i> (Vahl) Gale ssp. <i>brownii</i> (Roem. & Schult.) T. Koy.	141
<i>Pyrtosia stigmata</i> (Sw.) Ching	154	<i>Rhynchostylis coelestis</i> Rchb. f.	138
<i>Pyrus granulosa</i> Bertol. var. <i>siamensis</i> Craib	84	<i>Rhynchotechum ellipticum</i> DC. ex Cl.	107
<i>Pyrus lindleyi</i> Rehd.	53	<i>Rhynchotechum obovatum</i> (Griff.) B.L. Burt	107
<i>Quercus aliena</i> Bl.	124	<i>Richthofenia siamensis</i> Hoss.	113
<i>Quercus brandisiana</i> Kurz	124	<i>Ricinus communis</i> L.	53
<i>Quercus glabricupula</i> Barn.	124	<i>Rorippa dubia</i> (Pers.) Hara	65
<i>Quercus incana</i> Roxb.	124	<i>Rorippa heterophylla</i> (Bl.) Will.	65
<i>Quercus kerrii</i> Craib var. <i>kerrii</i>	124	Rosaceae	84
<i>Quercus kerrii</i> Craib var. <i>pubescens</i> Barn.	124	<i>Rostellularia chiengmaiensis</i> Brem.	108
<i>Quercus kingiana</i> Craib	124	<i>Rotala diversifolia</i> Koeh.	87
<i>Quercus lanata</i> Smith	124	<i>Rotala mexicana</i> Cham. & Schl. var. <i>chamissoana</i> Koeh. forma <i>minima</i> Koeh.	87
<i>Quercus lineata</i> Bl. var. <i>hildebrandii</i> King	124	<i>Rotala rotundifolia</i> (Ham. ex Roxb.) Koeh.	87
<i>Quercus mespilifolia</i> Wall. ex DC.	125	<i>Rothmannia sootepensis</i> (Craib) Brem.	93
<i>Quercus semiserrata</i> Roxb.	125	<i>Rottboellia cochinchinensis</i> (Lour.) Clay.	144
<i>Quercus vestita</i> Rehd. & Wils.	125	<i>Rottboellia exaltata</i> L.	144
<i>Quisqualis indica</i> L. var. <i>indica</i>	85	<i>Rourea minor</i> (Gaertn.) Leenh. ssp. <i>minor</i>	76
<i>Radermachera glandulosa</i> (Bl.) Miq.	107	<i>Rubia siamensis</i> Craib	93
<i>Radermachera ignea</i> (Kurz) Steen.	107	Rubiaceae	90
Rafflesiaceae	113	<i>Rubus alceifolius</i> Poir.	84
<i>Randia crassispina</i> Gedd.	91	<i>Rubus blepharoneurus</i> Card.	84
<i>Randia plumbea</i> Craib	38	<i>Rubus ellipticus</i> J.E. Sm. forma <i>obcordatus</i> Franch.	84
Ranunculaceae	63	<i>Rubus kerrii</i> Rol. ex Craib	38
<i>Rapanea neriifolia</i> (Sieb. & Zucc.) Mez var. <i>yunnanensis</i> (Mez) Walk.	99	<i>Rubus rufus</i> Focke.	38
<i>Rapanea yunnanensis</i> Mez	99	<i>Rubus sorbifolius</i> Maxim.	84
<i>Raphistemma pulchellum</i> (Roxb.) Wall.	102	<i>Ruellia tuberosa</i> L.	109
<i>Rauvolfia ophiorrhizoides</i> (Kurz) Kerr	101	<i>Rungia parviflora</i> (Retz.) Nees var. <i>ciliata</i> Brem.	71
<i>Rauvolfia serpentina</i> (L.) Bth. ex Kurz	101	Rutaceae	71
		Sabiaceae	76

<i>Saccharum arundinaceum</i> Retz.	145	<i>Schleichera trijuga</i> Willd.	75
<i>Saccharum fallax</i> Balan.	145	<i>Schoenoplectus juncoides</i> (Roxb.) Palla	141
<i>Saccolabium hoyopse</i> Rol. ex Dow.	39	<i>Schoenoplectus mucronatus</i> (L.) Palla	141
<i>Saccolabium monticolum</i> Rol. ex Dow.	39	<i>Schoenorchis spatulata</i> (Rol. ex Dow.) Seid. & Smit.	39
<i>Sacciolepis indica</i> (L.) A. Chase	145	<i>Schoepfia fragrans</i> Wall.	73
<i>Sagittaria sagittifolia</i> L. ssp. <i>leucopetala</i> (Miq.) Hart.	125	<i>Schoutenia glomerata</i> King ssp. <i>peregrina</i> (Craib)	70
<i>Sagittaria trifolia</i> L.	125	Roekm. & Hart.	
Salicaceae	125	<i>Schrebera swietenoides</i> Roxb.	100
<i>Salix tetrasperma</i> Roxb.	125	<i>Sciaphila thaidanica</i> K. Lar.	125
<i>Salomonina cantoniensis</i> Lour. var. <i>cantoniensis</i>	66	<i>Scirpus grossus</i> L. f.	141
<i>Salomonina longiciliata</i> Kurz	66	<i>Scirpus juncoides</i> Roxb. var. <i>juncoides</i>	141
<i>Salvia riparia</i> Kunth	112	<i>Scirpus mucronatus</i> L. ssp. <i>mucronatus</i>	141
<i>Salvinia cucullata</i> Roxb. ex Bory	154	<i>Scirpus siamensis</i> (Cl.) Kern	141
Salviniaceae	77	<i>Scirpus squarrosus</i> L.	141
<i>Samanea saman</i> (Jacq.) Merr.	90	<i>Scirpus subcapitatum</i> Thw. & Hk.	141
<i>Sambucus javanica</i> Reinw. ex Bl. ssp. <i>javanica</i>	73	<i>Scirpus ternatus</i> Reinw. ex Miq.	141
<i>Sandoricum koetjape</i> (Burm. f.) Merr.	116	<i>Scleria benthamii</i> Cl.	141
Santalaceae	76	<i>Scleria ciliaris</i> Nees	141
<i>Santaloides siamensis</i> Schellenb.	76	<i>Scleria kerrii</i> Turr.	141
Sapindaceae	75	<i>Scleria levis</i> Retz.	142
<i>Sapindus rarak</i> DC.	75	<i>Scleria lithosperma</i> (L.) Sw. ssp. <i>lithosperma</i>	142
<i>Sapium bacatum</i> Roxb.	117	<i>Scleria lithosperma</i> (L.) Sw. var. <i>lithosperma</i>	142
<i>Sapium insigne</i> (Roy.) Bth.	118	<i>Scleria mikawana</i> Mak.	142
Sapotaceae	99	<i>Scleria pergracilis</i> (Nees) Kunth	142
<i>Sapria himalayana</i> Griff.	113	<i>Scleria psilorrhiza</i> Cl.	142
<i>Saprosmia</i> sp.	93	<i>Scleria reticulata</i> (Holt.) Kern	142
<i>Sarcandra glabra</i> (Thunb.) Nak. ssp. <i>brachystachys</i>	114	<i>Scleria scrobiculata</i> Nees & Mey. ex Nees	142
(Bl.) Verd. var. <i>brachystachys</i>		<i>Scleria terrestris</i> (L.) Fass.	142
<i>Sarcanthus carinatus</i> Rol. ex Dow.	39	<i>Scleropyrum wallichianum</i> (A. DC.) Arn. var.	116
<i>Sarcanthus flagelliformis</i> Rol. ex Dow.	133	siamensis H. Lec.	
<i>Sarcanthus recurvus</i> Rol. ex Dow.	133	<i>Scoparia dulcis</i> L.	105
<i>Sarcosperma arboreum</i> Bth.	99	Scrophulariaceae	104
<i>Saurauia nepaulensis</i> DC.	68	<i>Scurrula atropurpurea</i> (Bl.) Dans.	115
<i>Saurauia roxburghii</i> Wall.	68	<i>Scurrula ferruginea</i> (Roxb. ex Jack) Dans.	116
Saurauiaceae	68	<i>Scurrula parasitica</i> L.	116
<i>Sauropus amoebiflorus</i> A.S.	119	<i>Scutellaria glandulosa</i> Hk. f.	112
<i>Sauropus bicolor</i> Craib var. <i>bicolor</i>	119	<i>Scyphellandra pierrei</i> Boiss.	66
<i>Sauropus garrettii</i> Craib	119	<i>Securidaca inappendiculata</i> Hassk.	66
<i>Sauropus hirsutus</i> Beille	119	<i>Securinea virosa</i> (Roxb. ex Willd.) Baill.	119
<i>Sauropus orbicularis</i> Craib var. <i>minor</i> A.S.	119	<i>Sehima nervosum</i> (Rottl.) Stapf	146
<i>Sauropus orbicularis</i> Craib var. <i>orbicularis</i>	119	<i>Selaginella argentea</i> (Wall. ex Hk. & Grev.) Spring	147
<i>Sauropus quadrangularis</i> (Willd.) M.-A. var.	119	<i>Selaginella delicatula</i> (Desv.) Alst.	147
<i>puberlus</i> Kurz		<i>Selaginella helferi</i> Warb.	147
<i>Sauropus quadrangularis</i> (Willd.)	119	<i>Selaginella involvens</i> (Sw.) Spr.	148
M.-A. var. <i>quadrangularis</i>		<i>Selaginella kurzii</i> Bak.	148
<i>Sauropus rigidus</i> Craib	119	<i>Selaginella minutifolia</i> Spr.	148
<i>Sauropus siamensis</i> T. Chakrab. & Gang.	38	<i>Selaginella ostenfeldii</i> Hier.	148
<i>Sauropus similis</i> Craib	119	<i>Selaginella pennata</i> (D. Don) Spring	148
<i>Saussurea peguensis</i> Cl.	96	<i>Selaginella repanda</i> (Desv.) Spring	148
Saxifragaceae	85	<i>Selaginella roxburghii</i> (Hk. & Grev.) Spring var.	148
<i>Schefflera bengalensis</i> Gamb.	89	roxburghii	
<i>Schefflera pueckleri</i> (C. Koch) Frod.	89	Selaginellaceae	147
<i>Schima wallichii</i> (DC.) Korth.	67	<i>Semecarpus cochinchinensis</i> Engl.	76
Schisandraceae	63	<i>Senna spectabilis</i> (DC.) Irwin & Barneby	53,78
<i>Schizachyrium brevifolium</i> (Sw.) Nees	145	<i>Senna tora</i> (L.) Roxb.	78
<i>Schizachyrium sanguineum</i> (Retz.) Alst.	146	<i>Sericocalyx quadrifarius</i> (Wall. ex Nees) Brem.	109
Schizaeaceae	148	<i>Sericocalyx schomburgkii</i> (Craib) Brem.	109
<i>Schleichera oleosa</i> (Lour.) Oken	75	<i>Seseli siamicum</i> Craib	89

<i>Setaria flavida</i> (Retz.) Veldk.	146	<i>Spatholobus suberectus</i> Dunn	83
<i>Setaria pallide-fusca</i> (Schum.) Stapf & C.E. Hubb.	146	<i>Sphaeranthus indicus</i> L.	83
<i>Setaria palmifolia</i> (Koen.) Stapf var. <i>palmifolia</i>	146	<i>Sphenoclea zeylanica</i> Gaertn.	83
<i>Setaria parviflora</i> (Poir.) Kerg.	146	Sphenocleaceae	97
<i>Setaria sphacelata</i> (Schumach.) Stapf & C.E. Hubb.	146	<i>Sphenodesme pentandra</i> Jack var. <i>wallichiana</i>	83
ex Moss ex Stapf & C.E. Hubb. var. <i>anceps</i>		(Schauer) Munir	
(Stapf & C.E. Hubb.) Veldk.		<i>Sphenomeris chinensis</i> (L.) Maxon var. <i>chinensis</i>	149
<i>Setaria verticillata</i> (L.) P. Beauv.	146	<i>Spilanthus paniculata</i> Wall. ex DC.	96
<i>Shorea farinosa</i> Fischer	68	<i>Spiradiclis caespitosa</i> Bl.	93
<i>Shorea obtusa</i> Wall. ex Bl.	68	<i>Spondias axillaris</i> Roxb.	76
<i>Shorea roxburghii</i> G. Don	68	<i>Spondias pinnata</i> (L. f.) Kurz	76
<i>Shorea siamensis</i> Miq. var. <i>siamensis</i>	68	<i>Sporobolus diander</i> (Retz.) P. Beauv.	146
<i>Shuteria hirsuta</i> Baker	83	<i>Sporobolus indicus</i> (L.) R. Br. var. <i>flaccidus</i>	146
<i>Shuteria involucreta</i> (Wall.) Wight. & Arn. var. <i>involucreta</i>	83	(R. & S.) Veldk.	
<i>Shuteria suffulta</i> Wall. ex Bth. var. <i>sinensis</i>	83	<i>Sporobolus tetragonus</i> Bor	146
(Helms.) Niyo.		<i>Stachyphrynium spicatum</i> (Roxb.) K. Sch.	128
<i>Sida mysorensis</i> Wight & Arn.	68	<i>Stachys siamensis</i> Musch.	111
<i>Sida rhombifolia</i> L. ssp. <i>rhombifolia</i>	69	Staphyleaceae	75
<i>Siegesbeckia orientalis</i> L.	96	<i>Staurochilus grandiflora</i> Bth.	107
Simaroubaceae	72	<i>Staurochilus loratus</i> (Rol. ex Dow.) Seid.	138
<i>Sindora siamensis</i> Teysm. ex Miq. var. <i>siamensis</i>	78	<i>Staurogyne obtusa</i> (Nees) O.K.	109
<i>Siphonodon celastrineus</i> Griff.	73	<i>Stellaria monosperma</i> B.-H. ex D. Don var.	
<i>Siratia siamensis</i> (Craib) C. Jeff. ex S.Q. Zhong	38	<i>paniculata</i> (Edgew.) Maj.	66
& D. Fang		<i>Stemona burkillii</i> Prain	131
<i>Sloanea tomentosa</i> (Bth.) Rehd. & Wils.	71	<i>Stemona kerrii</i> Craib	131
Smilacaceae	129	<i>Stemona tuberosa</i> Lour. var. <i>tuberosa</i>	131
<i>Smilax corbularia</i> Kunth ssp. <i>corbularia</i>	129	Stemonaceae	131
<i>Smilax lanceifolia</i> Roxb.	129	<i>Stephania brevipes</i> Craib	65
<i>Smilax megacarpa</i> A. DC.	129	<i>Stephania elegans</i> Hk. f. & Thoms.	65
<i>Smilax ovalifolia</i> Roxb.	129	<i>Stephania glabra</i> (Roxb.) Miers	65
<i>Smilax perfoliata</i> Lour.	129	<i>Stephania japonica</i> (Thunb.) Miers var.	65
<i>Smilax verticalis</i> Gagnep.	129	<i>discolor</i> (Bl.) Forman	
<i>Smilax zeylanica</i> L. ssp. <i>hemsleyana</i> (Craib) T. Koy.	129	<i>Stephania kerrii</i> Craib	65
<i>Smithia ciliata</i> Roy.	83	<i>Stephania oblata</i> Craib	65
Solanaceae	104	<i>Sterculia angustifolia</i> Roxb.	69
<i>Solanum barbisetum</i> Nees	104	<i>Sterculia balanghas</i> L.	69
<i>Solanum macrodon</i> Wall. ex Nees	104	<i>Sterculia lanceolata</i> Cav. var. <i>lanceolata</i>	69
<i>Solanum nigrum</i> L.	104	<i>Sterculia lanceolata</i> Cav. var. <i>principis</i>	69
<i>Solanum torvum</i> Sw.	104	(Gagnep.) Pheng.	
<i>Solanum verbascifolium</i> L.	104	<i>Sterculia ornata</i> Wall. ex Kurz	70
<i>Solena amplexicaulis</i> (Roxb.) Gandhi	88	<i>Sterculia pexa</i> Pierre	69
<i>Sonchus arvensis</i> L.	96	<i>Sterculia urena</i> Roxb. var. <i>thorelii</i> (Pierre) Pheng.	70
<i>Sonchus oleraceus</i> L.	96	<i>Sterculia villosa</i> Roxb.	70
<i>Sonerila erecta</i> Jack	86	Sterculiaceae	69
<i>Sonerila griffithii</i> Cl.	86	<i>Stereosandra javanica</i> Bl.	138
<i>Sonerila kerrii</i> Craib & Stapf	86	<i>Stereospermum colais</i> (B.-H. ex Dillw.) Mabb.	107
<i>Sonerila nisbetiana</i> Craib	86	<i>Stereospermum fimbriatum</i> (Wall. ex G. Don) DC.	107
<i>Sonerila tenera</i> Roy. var. <i>tenera</i>	86	<i>Stereospermum neuranthum</i> Kurz	107
Sonneratiaceae	87	<i>Streblus asper</i> Lour. var. <i>asper</i>	122
<i>Sopubia fastigiata</i> Bon.	105	<i>Streblus taxoides</i> (Hey. ex Roth) Kurz	122
<i>Sopubia trifida</i> B.-H. ex D. Don	105	<i>Streptocarpus orientalis</i> Craib	107
<i>Sorbus verrucosa</i> (Decne.) Rehd. var. <i>verrucosa</i>	84	<i>Streptocaulon juvenas</i> (Lour.) Merr.	102
<i>Sorghum nitidum</i> (Vahl) Pers.	146	<i>Striga asiatica</i> (L.) O.K.	105
<i>Spathoglottis pubescens</i> Lindl.	138	<i>Striga masuria</i> (B.-H. ex Bth.) Bth.	105
<i>Spatholobus floribundus</i> Craib	83	<i>Strobilanthes anfractuosa</i> Cl. ex Hoss.	109
<i>Spatholobus parviflorus</i> (Roxb.) O.K.	83	<i>Strobilanthes apricus</i> (Hance) T. And. var.	109
<i>Spatholobus spirei</i> Gagnep.	83	<i>pedunculatus</i> (Craib) Ben.	109
		<i>Strobilanthes argenteus</i> Imlay	109

<i>Strobilanthes consors</i> Cl. ex Hoss.	109	<i>Tephrosia purpurea</i> (L.) Pers. ssp. <i>purpurea</i>	83
<i>Strobilanthes imbricatus</i> Nees	109	<i>Terminalia alata</i> Hey. ex Roth	85
<i>Strobilanthes</i> aff. <i>mucronato-productus</i> Lindl.	109	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	85
<i>Strobilanthes rubro-glandulosus</i> Craib	109	<i>Terminalia chebula</i> Retz. var. <i>chebula</i>	85
<i>Strobilanthes serratus</i> Im.	109	<i>Terminalia glaucifolia</i> Craib	85
<i>Strobilanthes viscidus</i> Im.	109	<i>Terminalia mucronata</i> Craib & Hutch.	85
<i>Strychnos nux-vomica</i> L.	103	<i>Terminalia triptera</i> Stapf	85
<i>Stylosanthes sundaica</i> Taub.	83	<i>Ternstroemia gymnanthera</i> (Wight & Arn.) Bedd.	68
Styracaceae	100	<i>Tetrameles nudiflora</i> R. Br. ex Benn.	89
<i>Styrax benzoides</i> Craib	100	<i>Tetrastigma campylocarpum</i> (Kurz) Planch.	74
<i>Sunipia andersonii</i> (King & Pantl.) P.F. Hunt	39	<i>Tetrastigma crassipes</i> Pl.	74
<i>Sunipia australis</i> (Seid.) P.F. Hunt	39	<i>Tetrastigma cruciatum</i> Craib & Gagnep.	74
<i>Sunipia racemosa</i> (J.E. Sm.) Tang & Wang	138	<i>Tetrastigma delavayi</i> Gagnep.	74
<i>Suregada multiflora</i> (A. Juss.) Baill. var. <i>multiflora</i>	119	<i>Tetrastigma garrettii</i> Gagnep.	74
<i>Swertia angustifolia</i> Ham. ex D. Don	103	<i>Tetrastigma</i> aff. <i>harmandii</i> Planch.	74
<i>Swertia kachinensis</i> Lace	103	<i>Tetrastigma laoticum</i> Gagnep.	75
<i>Symphorema involucratum</i> Roxb.	110	<i>Tetrastigma obovatum</i> (Laws.) Gagnep.	75
Symplocaceae	99	<i>Tetrastigma quadrangulum</i> Gagnep. & Craib	75
<i>Symplocos cochinchinensis</i> (Lour.)	99	<i>Tetrastigma serrulatum</i> (Roxb.) Planch.	75
<i>S. Moore</i> ssp. <i>cochinchinensis</i> var. <i>cochinchinensis</i>		<i>Tetrastigma siamense</i> Gagnep. & Craib	75
<i>Symplocos cochinchinensis</i> (Lour.) <i>S. Moore</i>	99	<i>Tetrastigma yunnanense</i> Gagnep.	75
ssp. <i>laurina</i> (Retz.) Noot.		<i>Tetrastigma</i> sp.	75
<i>Symplocos hookeri</i> Cl.	99	<i>Teucrium quadrifarium</i> B.-H. ex D. Don	112
<i>Symplocos kerrii</i> Craib var. <i>kerrii</i>	99	<i>Teyleria barbata</i> (Craib) Lack. ex Maes.	83
<i>Symplocos macrophylla</i> Wall. ex DC. ssp. <i>sulcata</i>	99	<i>Thalictrum foliolosum</i> DC.	63
(Kurz) Noot. var. <i>sulcata</i>		Theaceae	67
<i>Symplocos racemosa</i> Roxb.	99	Thelypteridaceae	152
<i>Symplocos rajaniana</i> Craib	99	<i>Thelypteris arida</i> (D. Don) Mort.	152
<i>Symplocos sumuntia</i> B.-H. ex D. Don	100	<i>Thelypteris ciliata</i> (Wall. ex Bth.) Ching	152
<i>Synedrella nodiflora</i> (L.) Gaertn.	96	<i>Thelypteris confluens</i> (Thunb.) Mort.	152
<i>Synotis triligulatus</i> (B.-H. ex D. Don) C. Jeff. & Y.L. Chen	96	<i>Thelypteris crinipes</i> (HK.) K. Iw.	152
<i>Tacca chantrieri</i> Andre	132	<i>Thelypteris cylindrothrix</i> (Rosenst.) K. Iw.	152
<i>Tacca integrifolia</i> Ker-Gawl.	132	<i>Thelypteris dentata</i> (Forssk.) St. John	152
Taccaceae	132	<i>Thelypteris hirtisora</i> (C. Chr.) K. Iw.	152
<i>Taeniophyllum glandulosum</i> Bl.	138	<i>Thelypteris hispidula</i> (Decne.) Reed	152
<i>Tainia angustifolia</i> (Lindl.) Bth. & Hk. f.	138	<i>Thelypteris interrupta</i> (Willd.) K. Iw.	152
<i>Tainia hookeriana</i> King & Pantl.	138	<i>Thelypteris lakhimpurensis</i> (Rosenst.) K. Iw.	152
<i>Tainia speciosa</i> Bl.	138	<i>Thelypteris nudata</i> (Roxb.) Mort.	152
<i>Tainia sutepensis</i> (Rol. ex Dow.) Seid. & Smit.	138	<i>Thelypteris papilio</i> (Hope) K. Iw.	152
<i>Tainia viridifusca</i> (Hk.) Bth. & Hk. f.	138	<i>Thelypteris parasitica</i> (L.) Fosb.	152
<i>Talauma hodgsonii</i> Hk. f. & Thoms.	63	<i>Thelypteris repens</i> (Hope) Ching	152
<i>Tamarindus indica</i> L.	53	<i>Thelypteris subelata</i> (Bak.) K. Iw.	152
<i>Tarenna collinsae</i> Craib	93	<i>Thelypteris terminans</i> (Hk.) Tag. & K. Iw.	152
<i>Tarenna disperma</i> (Hk. f.) Pit.	93	<i>Thelypteris truncata</i> (Poir.) K. Iw.	152
<i>Tarenna vanprukii</i> Craib var. <i>vanprukii</i>	93	<i>Thelypteris xylodes</i> (Kunze) Ching	152
<i>Tarennoidea wallichii</i> (Hk. f.) Tirv. & Sastre	93	<i>Themeda arguens</i> (L.) Hack.	146
<i>Tectaria christii</i> Copel.	151	<i>Themeda arundinacea</i> (Roxb.) Ridl.	146
<i>Tectaria fauriei</i> Tag.	151	<i>Themeda triandra</i> Forssk.	146
<i>Tectaria fuscipes</i> (Wall. ex Bedd.) C. Chr.	152	<i>Thespesia lampas</i> (Cav.) Dalz. & Gibs. var. <i>lampas</i>	69
<i>Tectaria herpetocaulos</i> Holtt.	152	<i>Thladiantha hookeri</i> Cl.	88
<i>Tectaria impressa</i> (Fee) Holtt.	152	<i>Thladiantha siamensis</i> Craib	38
<i>Tectaria variolosa</i> (Wall. ex Hk.) C. Chr.	152	<i>Thomsonia sutepensis</i> Hu	130
<i>Tectona grandis</i> L. f.	110	<i>Thrixspermum stuepense</i> (Rol. ex Dow.) Tang & Wang	39
<i>Telosma pallida</i> (Roxb.) Craib	102	<i>Thunbergia alata</i> Boj. ex Sims	109
<i>Teniostachyum dullooa</i> Gamb.	147	<i>Thunbergia coccinea</i> Wall.	109
<i>Tephrosia kerrii</i> Drum. & Craib	83	<i>Thunbergia geoffrayi</i> R. Ben.	109
		<i>Thunbergia laurifolia</i> Lindl.	109
		<i>Thunbergia similis</i> Craib	109

Thymelaeaceae	115	<i>Typhonium larsenii</i> Hu	131
<i>Thyrostachys oliveri</i> Gamb.	147	<i>Typhonium trilobatum</i> (L.) Schott	131
<i>Thysanolaena latifolia</i> (Roxb. ex Horn.) Honda	146	Ulmaceae	120
Tiliaceae	70	<i>Ulmus lancaefolia</i> Roxb. ex Wall.	120
<i>Tiliacora triandra</i> (Colebr.) Diels	65	Umbelliferae	89
<i>Tinomiscium petiolare</i> Hk. f. & Thoms.	65	<i>Uncaria macrophylla</i> Wall.	93
<i>Tinospora crispa</i> (L.) Hk. f. & Thoms.	65	<i>Uraria campanulata</i> (Wall. ex Bth.) Gagnep.	83
<i>Tinospora sinensis</i> (Lour.) Merr.	65	<i>Uraria cordifolia</i> Wall.	83
<i>Tirpitzia sinensis</i> (Hemsl.) Hall.	71	<i>Uraria lacei</i> Craib	83
<i>Tithonia diversifolia</i> (Hemsl.) A. Gray	96	<i>Uraria lagopodioides</i> (L.) Desv. ex DC.	84
<i>Toddalia asiatica</i> (L.) Lmk.	72	<i>Uraria poilanei</i> Dy Phon	84
<i>Toona ciliata</i> M. Roem.	73	<i>Urceola micrantha</i> (Wall. ex G. Don) D. J. Midd.	101
<i>Toona microcarpa</i> (C. DC.) Harms	73	<i>Urena lobata</i> L. ssp. <i>lobata</i> var. <i>lobata</i>	69
<i>Torenia benthiana</i> Hance	105	<i>Urochloa distachya</i> (L.) T. Q. Nguyen	146
<i>Torenia flava</i> B.-H. ex Bth.	105	<i>Urochloa panicoides</i> P. Beauv. var. <i>pubescens</i>	146
<i>Torenia thorelii</i> Bon.	106	(Kunth) Bor	
<i>Torenia violacea</i> (Aza. ex Blanco) Penn.	106	Urticaceae	122
<i>Tournefortia intonsa</i> Kerr	103	<i>Utricularia aurea</i> Lour.	106
<i>Toxocarpus</i> aff. <i>griffithii</i> Dcne.	102	<i>Utricularia bifida</i> L. var. <i>bifida</i>	106
<i>Toxocarpus villosus</i> (Bl.) Dcne.	102	<i>Utricularia caerulea</i> L.	106
<i>Trachelospermum asiaticum</i> (Sieb. & Zucc.) Nakai	101	<i>Utricularia exoleta</i> R. Br.	106
<i>Trachelospermum gracilipes</i> Hk. f.	101	<i>Utricularia kerrii</i> Craib	106
<i>Trema orientalis</i> (L.) Bl.	120	<i>Utricularia scandens</i> Benj.	106
<i>Trevesia palmata</i> (DC.) Vis.	89	<i>Utricularia sootepensis</i> Craib	106
<i>Trewia nudiflora</i> L.	120	<i>Utricularia striatula</i> Sm.	106
<i>Trichilla conmaroides</i> (Wight & Arn.) Benth.	73	<i>Uvaria rufa</i> Bl.	64
<i>Tricholepis karensium</i> Kurz	96	<i>Vaccinium apricum</i> Flet.	97
<i>Trichophorum subcapitatum</i> (Thw. & Hk.) D.J. Simp.	141	<i>Vaccinium exaristatum</i> Kurz	97
<i>ovigera</i> Bl.		<i>Vaccinium garrettii</i> Craib	97
<i>Trichosanthes ovigera</i> Bl.	88	<i>Vaccinium pedicellatum</i> Flet.	97
<i>Trichosanthes rubriflos</i> Thor. ex Cay.	88	<i>Vaccinium sprengelii</i> (D. Don) Sleum.	97
<i>Trichosanthes tricuspidata</i> Lour.	88	<i>Vaccinium winitii</i> Flet.	97
<i>Trichosanthes wallichiana</i> (Ser.) Wight	88	<i>Valeriana hardwickii</i> Wall.	94
<i>Trichotomia dasiphylla</i> (Par. & Rchb. f.) Krzl.	138	Valerianaceae	94
<i>Tridax procumbens</i> L.	96	<i>Vanda brunnea</i> Rchb. f.	138
<i>Trigonospora ciliata</i> (Wall. ex Bth.) Holtt.	152	<i>Vangueria</i> (Meyna) <i>pubescens</i> Kurz	93
<i>Tripogon trifidus</i> Munro ex Stapf	146	<i>Vanilla siamensis</i> Rol. ex Dow.	138
<i>Tristanopsis burmanica</i> (Griff.) Wils. & Wat.	86	<i>Ventilago calyculata</i> Tul.	74
var. <i>rufescens</i> (Hance) Pam. & Lug.		<i>Vitis lanata</i> Roxb. var. <i>glabra</i> Laws.	74
<i>Triumfetta bartramia</i> L.	70	<i>Ventilago denticulata</i> Willd.	74
<i>Triumfetta pilosa</i> Roth	70	Verbenaceae	109
<i>Triumfetta rhomboidea</i> Jacq.	70	<i>Vernonia andersonii</i> Cl.	96
Triuridaceae	125	<i>Vernonia cinerea</i> (L.) Less. var. <i>cinerea</i>	96
<i>Tropidia angulosa</i> (Lindl.) Bl.	138	<i>Vernonia divergens</i> (DC.) Edgew.	96
<i>Tropidia curculigoides</i> Lindl.	138	<i>Vernonia parishii</i> Hk. f.	96
<i>Tropidia pedunculata</i> Bl.	138	<i>Vernonia roxburghii</i> Less.	96
<i>Tupistra albiflora</i> K. Lar.	129	<i>Vernonia silhetensis</i> (DC.) Craib var. <i>silhetensis</i>	96
<i>Turpinia nepalensis</i> (Roxb.) Wall. ex Wight & Arn.	75	<i>Vernonia silhetensis</i> (DC.) Craib var. <i>sub serrata</i>	96
<i>Turpinia pomifera</i> (Roxb.) Wall. ex DC.	75	(Hoss.) Craib	
<i>Tylophora fasciculata</i> Ham. ex Wight	102	<i>Vernonia squarrosa</i> (D. Don) Less. var. <i>orientalis</i> Kit.	97
<i>Tylophora</i> aff. <i>himalaica</i> Hk.f.	102	<i>Vernonia sutepensis</i> Kerr	97
<i>Tylophora kerrii</i> Craib	38	<i>Vernonia volkameriifolia</i> DC. var. <i>volkameriifolia</i>	97
<i>Tylophora purpurea</i> Wall. ex Wight	102	<i>Vetiveria zizanioides</i> (L.) Nash ex Small	143
<i>Tylophora rotundifolia</i> Ham. ex Wight	102	<i>Viburnum cylindricum</i> Ham. ex D. Don	90
<i>Tylophora sootepensis</i> Craib	102	<i>Viburnum inopinatum</i> Craib	90
<i>Tylophora</i> sp.	102	<i>Vigna dalzelliana</i> (O.K.) Verd. var. <i>dalzelliana</i>	84
<i>Typhonium hirsutum</i> (Hu) Mur. & Mayo	131	<i>Vigna grahamiana</i> (Wight & Arn.) Verdc.	84
<i>Typhonium horsfieldii</i> (Miq.) Steen.	131	<i>Vigna radiata</i> (L.) Wilcz. var. <i>sublobata</i> (Roxb.) Verd.	84

<i>Vigna umbellata</i> (Willd.) Ohwi & Oha. var. <i>umbellata</i>	84	<i>Xanthophyllum flavescens</i> Roxb.	66
<i>Vigna vexillata</i> (L.) A. Rich. var. <i>vexillata</i>	84	<i>Xanthophyllum virens</i> Roxb.	66
<i>Viola pilosa</i> Bl.	66	<i>Xantolis burmanica</i> (Coll. & Hemsl.) P. Royen	99
Violaceae	66	<i>Xylia xylocarpa</i> (Roxb.) Taub. var. <i>kerrii</i>	77
Viscaceae	115	(Craib & Hutch.) Niels.	
<i>Viscum articulatum</i> Burm. f.	116	<i>Xylosma brachystachys</i> Craib	67
<i>Viscum orientale</i> Willd.	116	Xyridaceae	126
<i>Viscum ovalifolium</i> Wall. ex DC.	116	<i>Xyris capensis</i> Thunb.	126
Vitaceae	74	<i>Xyris pauciflora</i> Willd.	126
<i>Vitex canescens</i> Kurz	110	<i>Youngia japonica</i> (L.) DC.	97
<i>Vitex glabrata</i> R. Br.	110	<i>Zanthoxylum acanthopodium</i> DC.	72
<i>Vitex limoniifolia</i> Wall. ex Kurz	110	<i>Zehneria marginata</i> (Bl.) Kera.	88
<i>Vitex peduncularis</i> Wall. ex Schauer	110	<i>Zehneria maysorensis</i> (Wight & Arn.) Arn.	88
<i>Vitex quinata</i> (Lour.) Will.	110	<i>Zehneria wallichii</i> (Cl.) C. Jeff.	88
<i>Vitis lanata</i> Roxb. var. <i>glabra</i> Laws.	74	<i>Zeuxine affinis</i> (Lindl.) Bth. ex Hk. f.	138
<i>Vitis thomsonii</i> Laws.	74	<i>Zeuxine sutepensis</i> Rol. ex Dow.	138
<i>Vittaria flexuosa</i> Fee	150	<i>Zingiber barbatum</i> Wall.	128
<i>Vittaria sikkimensis</i> Kuhn	150	<i>Zingiber bradleyanum</i> Craib	128
Vittariaceae	150	<i>Zingiber aff. integrum</i> Tong	128
<i>Wahlenbergia marginata</i> (Thunb.) A. DC.	97	<i>Zingiber kerrii</i> Craib	128
<i>Wallichia caryotoides</i> Roxb.	132	<i>Zingiber officinale</i> Rosc.	53
<i>Walsura intermedia</i> Craib	73	<i>Zingiber parishii</i> Hk. f.	128
<i>Walsura trichostemon</i> Miq.	73	<i>Zingiber rubens</i> Roxb.	128
<i>Walsura villosa</i> Wall. ex Kurz	73	<i>Zingiber smilesianum</i> Craib	128
<i>Wedelia montana</i> (Bl.) Boerl. var. <i>wallichii</i>	97	<i>Zingiber</i> sp.	128
(Less.) H. Koy.		Zingiberaceae	126
<i>Wendlandia paniculata</i> (Roxb.) DC. ssp.	93	<i>Ziziphus oenoplia</i> (L.) Mill. var. <i>brunoniana</i>	74
<i>scabra</i> (Kurz) Cowan		(Cl. ex Bran.) Tard.	
<i>Wendlandia scabra</i> Kurz var. <i>scabra</i>	93	<i>Ziziphus oenoplia</i> (L.) Mill. var. <i>oenoplia</i>	74
<i>Wendlandia tinctoria</i> (Roxb.) DC. ssp.	93	<i>Ziziphus rugosa</i> Lmk. var. <i>rugosa</i>	74
<i>floribunda</i> (Craib) Cowan		<i>Zornia gibbosa</i> Span.	84
<i>Wrightia arborea</i> (Dennst.) Mabb.	101	<i>Zygostelma benthamii</i> Baill.	102
<i>Xanthium inaequilaterum</i> DC.	97		

ADDITIONS AND CORRECTIONS

Page 38	<i>Antidesma kerrii</i> Craib = <i>Antidesma montanum</i> Bl. var. <i>montanum</i>
38	<i>Sauropus siamensis</i> T. Chakrab. & Gang. = <i>Sauropus orbicularis</i> Craib var. <i>orbicularis</i>
71	<i>Euodia glomerata</i> Craib = <i>Melicope glomerata</i> (Craib) T. Hart.
71	<i>Euodia meliifolia</i> (Hance) Bth. = <i>Tetradium glabrifolium</i> (Champ. ex Bth.) T. Hart.
71	<i>Euodia triphylla</i> DC. = <i>Melicope pteleifolia</i> (Champ. ex Bth.) T. Hart.
72	<i>Euodia viticina</i> Wall. ex Kurz = <i>Melicope viticina</i> (Wall. ex Kurz) T. Hart.
92	<i>Lasianthus kurzii</i> Hk. f. var. <i>kurzii</i>
93	<i>Lasianthus kerrii</i> Craib 1 pe 3 gro egf 925-1250 my-jn sp-dc ja-dc topotype
104	<i>Cuscuta reflexa</i> Roxb. var. <i>reflexa</i>
110	<i>Vitex quinata</i> (Lour.) Will. var. <i>puberula</i> (Lam) Mold.
116	<i>Antidesma bunius</i> (L.) preng. var. <i>bunius</i>
116	<i>Antidesma montanum</i> Bl. var. <i>montanum</i>
116-117	material of <i>Aporosa villosa</i> (Wall. ex Lindl.) Baill. and <i>Aporosa wallichii</i> Hk. f. have been reexamined and now include <i>Aporosa octandra</i> (B.-H. ex D. Don) Vick. var. <i>octandra</i> and var. <i>yunnanensis</i> (Pax & K. Hoffm.) Schot, and <i>Aporosa villosa</i> (Wall. ex Lindl.) Baill.
117	<i>Croton robustus</i> Kurz. change to <i>Croton acutifolius</i> Ess., paratype Doi Sutep

JFM

30 August 2001



Published by
The Biodiversity Research and Training Program (BRT)

With support from
The Thailand Research Fund (TRF)
The National Center for Genetic Engineering and Biotechnology (BIOTEC)
The National Science and Technology Development Agency (NSTDA)