VEGETATION AND VASCULAR FLORA OF THE BAN SANEH PAWNG AREA, LAI WO SUBDISTRICT, SANGKLABURI DISTRICT, KANCHANABURI PROVINCE, THAILAND

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ABSTRACT

Ban Saneh Pawng area is located in rugged, lowland, limestone terrain. There are two basic forest types, viz. primary evergreen + deciduous and a degraded kind composed of deciduous species + bamboo. Ca1ciphytes are abundant during the rainy season. The vascular flora includes 118 families and 559 species, etc. One new record for the flora of Thailand and two new species were found.

INTRODUCTION

Ban (village) Saneh Pawng is a Karen (tribe) village located c. 12 km NE of Sangklaburi town at approximatly 15° N latitude, 98° 5', east longitude and is in the southernmost part of Toong (Thung) Yai Naresuan Wildlife Sanctuary. The village is situated in a valley between limestone cliffs at 200 m elevation and is bisected by a shallow, perennial stream, Huay Rokee, which flows in a basically SW direction. Apart from shale of Kow My Dang, a hill over which the main dirt road leading to the village passes, the entire area consists of weathered, often steep, rugged limestone terrain. The cliffs and underlying bedrock belong to the Ratburi Formation which was originally formed as a coral reef during the Carboniferous–Permian periods of geological history, some 225–345 million years ago (JAVANAPHET, 1969), and was more recently uplifted and exposed to terrestrial weathering.

The elevation of the village is 200 m and the highest ridge in the area is 525 m. The village has been settled for several generations, thus much of the vegetation of the lowlands and flatter areas in the limestone hills has been disturbed. The study period for this project was from March 1993 to April 1994.

Climate

There are three distinct seasons in the area which are similar to those in northern Thailand, viz.

- 1. Hot, wet season from May to October,
- 2. Cooler, dry period from November to January, and
- 3. A hot, dry season from February to April.

Temperatures vary with the seasons, forest type, and time of day. The average minimum

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and maximum daily temperatures range from 20°C to 35°C in the hot, wet season; 10°C to 29°C in the cool season, and 15°C to 35°C in the hot, dry season. Daytime temperature rises quickly, especially in open and disturbed areas, and can reach 40°C in April.

Over 80% of the rain in the area is brought by the SW monsoon from the Andaman Sea, creating high levels of rainfall and frequently flooding the region, especially in September and October. Although the amount of rainfall is variable, 200–400 cm/year is typical.

VEGETATION

Lowland and other Disturbed Places

The villagers at Saneh Pawng are all farmers and rely on their crops for sustenance and cash. Feral animals, charcoal making, and house, etc. construction materials have resulted in the destruction of much of the original forest, however much of the escarpment, cliffs, and summit areas are undisturbed. Since the entire region of N and NW Thailand is seasonal, i.e. monsoonal, there is a dry season from November to about June, during which many of the woody plants and perennial herbs drop their leaves. This is also the time when fires are started to burn agricultural wastes, enlarge fields, etc. which has had a disastrous effect on forested areas, many of which are repeatedly burned.

Agricultural fields and residental areas have ubiquitous weeds such as Eupatorium odoratum L., Tridax procumbens L., Blumea balsamifera (L.) DC. (all Compositae); Euphorbia hirta L. and Phyllanthus urinaria L. (Euphorbiaceae); various Cyperaceae such as Cyperus halpan L. var. halpan, C. iria L., Fimbristylis dichotoma (L.) Vahl ssp. dichotoma; and Gramineae (grasses) including Chloris barbata Sw., Digitaria setigera Roth ex Roem. & Schult. var. setigera, Eleusine indica (L.) Gaertn., Imperata cylindrica (L.) P. Beauv. var. major (Nees) C.E. Hubb. ex Hubb. & Vaugh., Pennisetum pedicellatum Trin., and Sacciolepis indica (L.) Chase.

Areas that have been less disturbed and abandoned slashed and burned places have developed secondary growth which consists of soft-wooded, rapidly growing, mostly shortlived evergreen and deciduous trees up to c. 10 m tall. Some of these are Flacourtia indica (Burm. f.) Merr. (Flacourtiaceae), Microcos paniculata L. (Tiliaceae) Oroxylum indicum (L.) Kurz (Bignoniaceae, Fig. 5), Gmelina arborea Roxb. (Verbenaceae), Macaranga gigantea (Rchb. f. & Zoll.) M.-A. (Euphorbiaceae), and Ficus hispida L. f. var. hispida (Moraceae). The ground flora in these secondary areas is typically weedy and often includes some tall vigorous grasses, e.g. Thysanolaena latifolia (Roxb. ex Horn.) Honda and Saccharum arundinaceum Retz. (Gramineae); some shrubs and other perennial herbs which are typical of regenerating areas. Some woody examples are Helicteres hirsuta Lour. (Sterculiaceae), Leea indica (Burm. f.) Merr. (Leeaceae), Allophyllus cobbe (L.) Raeusch. (Sapindaceae), and Debregeasia longifolia (Burm. f.) Wedd. (Utricaceae). Tinospora crispa (L.) Hk. f. & Th. and T. sinensis (Lour.) Merr. (Menispermaceae), both deciduous, and Cayratia tenuifolia (Wight & Arn.) Gagnep. var. tenuifolia (Vitaceae) are some vines which are commonly found in secondary growth. Some other herbs found in this habitat are: Alpinia malaccensis (Burm. f.) Rosc. (Zingiberaceae), Dioscorea bulbifera L. (Dioscoreaceae, a vine), and Lygodium flexuosum (L.) Sw. (Schizeaceae, a climbing fern).

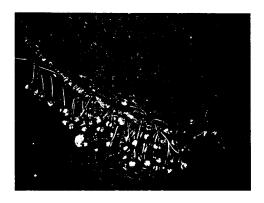


Figure 1. Dillenia pentagyna Roxb. (Dilleniaceae), a deciduous tree in deciduous + bamboo forest, produces inflorescences and infructescences on leafless branches during the hot (flowers) and early rainy (fruits) seasons. The trunk of the tree is in the background. Photo: Pat Corrigan, 15 June 1993 (Maxwell 93-610).

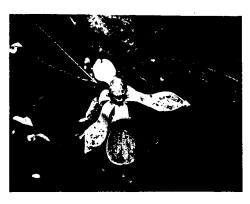


Figure 2. Talauma hodgsonii Hk. f. & Th. (Magnoliaceae), an uncommon understorey tree, is found in shaded places in more evergreen forested areas, especially along Rokee Stream. Photo: Mario Ambrosino, 12 April 1994 (Maxwell 94-500)



Figure 3. Capparis assamica Hk. f. & Th. (Capparaceae), distinguished by its narrow, lax, reflexed inflorescences and infructescences, this slender climbershrub is found in shaded, primary, more evergreen forested places. Photo: Pat Corrigan, 11 April 1994 (Maxwell 94-487).

Figure 4. Dischidia hirsuta (Bl.) Decne. (Asclepiadaceae), found on tree branches along Rokee Stream, is a slender, epiphytic, succulent vine. The Karen name for this plant is "poo gwaiy gee thay". Photo: Pat Corrigan, 19 March 1993 (Maxwell 93-293).



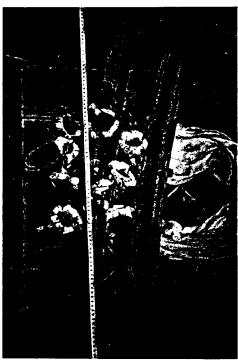


Figure 5. Oroxylum indicum (L.) Kurz (Bignoniaceae), a common treelet or tree of secondary growth, has large, nocturnal, bat-pollinated flowers, from which the corollas fall off after sunrise.

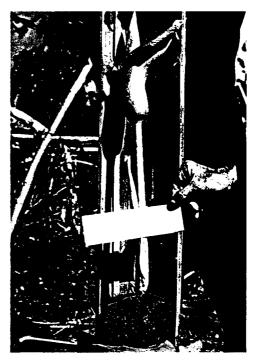
The immature fruits (capsules) are edible. Photo: Mario Ambrosino, 12 April 1994.



Figure 6. Curcuma sp. (Zingiberaceae) is a deciduous, perennial herb found in deciduous + bamboo, fire-prone areas.

The 4-angled inflorescences with redorange bracts are distinct. Photo: Mario Ambrosino, 7 October 1993 (Maxwell 93-1153).





Figures 7-8. Amorphophallus muelleri Bl. (Araceae), the most common species in this genus in the study area, is a deciduous, perennial herb found in deciduous + bamboo areas. The inflorescences and leaves of individual plants are never produced together in a growing season. Photo 7, an in situ individual; and Photo 8, showing another plant, in toto; both by Mario Ambrosino, 11 April 1994 (Maxwell 94-478).



Figure 9. Globba substrigosa King ex Bak. (Zingiberaceae) grows exclusively on limestone outcrops in shaded evergreen habitats during the rainy season. Photo: Pat Corrigan, 16 June 1993 (Maxwell 93-643).

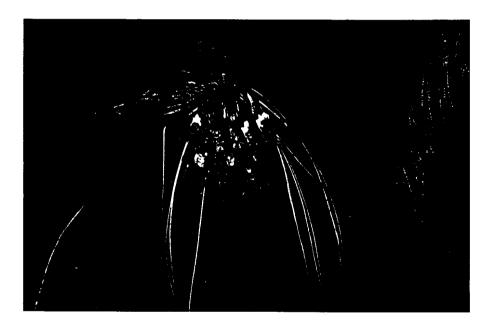


Figure 10. Tacca chantrieri Andre (Taccaceae), perennial, evergreen herb found in shaded evergreen areas, has four outer (larger) inflorescence bracts and many pendulous, filiform flower bracts inside. Photo: Pat Corrigan, 8 October 1993 (Maxwell 93-1166).

Primary Growth

The original (primary) forest cover of the areas is mixture of deciduous and evergreen tree species, while the understorey is more evergreen and consists of seedlings, treelets, shrubs, and herbs. Although many of the large trees in some areas have been removed there are still some pristine areas at the bases of some escarpments which have trees over 30 m tall with dbh's of over 1 m. The largest tree seen in the area is a gigantic individual of Duabanga grandiflora (Roxb. ex DC.) Walp. (Sonneratiaceae), while Parashorea stellata Pierre, Dipterocarpus alatus Roxb. ex G. Don and D. turbinatus Gaertn. f. (all Dipterocarpaceae) and Swintonia schwenkii (T. & B.) T. & B. ex Kurz (Anacardiaceae) are less massive. Some deciduous canopy members are Scaphium scaphgerum (G. Don) Guib. & Pl. and Pterocymbium laoticum Tard. (both Sterculiaceae), while Garuga floribunda Decne. (Burseraceae), Anogeissus acuminata (Roxb. ex DC.) Guill. & Perr. (Combretaceae), Lagerstroemia speciosa (L.) Pers. var. speciosa (Lythraceae), Xylia xylocarpa (Roxb.) Taub. var. kerrii (Craib & Hutch.) Niels. (Leguminosae, Mimosoideae) are of slightly less stature. Understorey deciduous trees include Cratoxylum neriifolium Kurz (Hypericaceae). Casearia flavovirens Bl. (Flacourtiaceae), Dillenia pentagyna Roxb. (Dilleniaceae, Fig. 1), and Schleichera trijuga Willd. (Sapindaceae). Evergreen counterparts in the understorey are Hydnocarpus kurzii (King) Warb. ssp. australis Sleum. (Flacourtiaceae), Garcinia xanthochymus Hk. f. ex T. And. (Guttiferae), Cleidion spiciflorum (Burm. f.) Merr. (Euphorbiaceae). and Knema linifolia (Roxb.) Warb. (Myristicaceae). The palm, Arenga wightii Griff. (Palmae) is an evergreen tree with a height of up to c. 8 m and a crown spread of c. 7 m. Some evergreen species growing below the understorey include Anaxagorea luzonica A. Gray and Goniothalamus griffthii Hk. î & Th. (both Annonaceae), Saraca declinata (Jack) Miq. (Leguminosae, Caesalpinioideae) Actephila excelsa (Dalz.) M.-A. var. excelsa and Cleidion spiciflorum (Burm. f.) Merr. (both Euphorbiaceae), and Streblus taxoides (Hey. ex Roth) Kurz (Moraceae). Strobilanthes turginodis Im. (Acanthaceae), an evergreen shrub, is often found in very shaded places.

Some evergreen woody climbers are *Tinomiscium petiolare* Hk. f. & Th. (Menispermaceae) and *Phytocrene bracteata* Wall. (Icacinaceae); while deciduous examples include *Acacia megaladena* Desv. var. *megaladena* (Leguminosae, Mimosoideae), *Premna scandens* Roxb. (Verbenaceae), and *Broussonetia kurzii* (Hk. f.) Corn. (Moraceae). Typical herbs in primary forested areas are: *Geophila repens* (L.) I.M. John., *Ophiorrhiza hispidula* Wall. ex G. Don var. *hispidula* (both Rubiaceae), *Tacca chantrieri* Andre (Taccaceae, Fig. 10), *Aeginetia indica* Roxb. (Orobanchaceae) and *Balanophora latisepala* (Tiegh.) Lec. (Balanophoraceae), both leafless saprophytes/parasites; *Justicia caloneura* Kurz (Acanthaceae); and *Amomum testaceum* Ridl. (Zingiberaceae). Ground ferns are also common and include *Adiantum philippense* L. (Parkeriaceae), *Tectaria impressa* (Fee) Holtt. and *T. herpetocaulos* Holtt. (Dryopteridaceae), and *Thelypteris nudata* (Roxb.) Mort. (Thelypteridaceae).

Epiphytes are abundant at all levels of the primary forest and include flowering plants such as Dischidia hirsuta (Bl.) Decne. (Fig. 4) and Hoya acuta Haw. var. acuta (both Asclepiadaceae), and many orchids (Orchidaceae), e.g. Dendrobium fimbriatum Hk. Oberonia iridifolia (Roxb.) Lindl., and Vanda teres Lindl. Epiphytic ferns are also common and include: Vittaria elongata Sw. (Vittariaceae), Asplenium nidus L. var. nidus

(Aspleniaceae), both of which are evergreen; and *Platycerium wallichii* Hk. (Polypodiaceae), which is deciduous.

Degraded Forest

Original primary forested areas that have been degraded, i.e. cut, burned, tilled, etc. have fewer large trees, more deciduous species, and show a distinct correlation between the amount of disturbance and the abundance of two bamboos, viz. Gigantochloa apus (Schult.) Kurz and G. nigro-ciliata (Beuse) Kurz (both Gramineae, Bambusoideae), that is more open areas have more bamboo. Typical deciduous tree species, up to 20 m tall, are Cassis fistula L. (Leguminosae, Caesalpinioideae), Mitragyna rotundifolia (Roxb.) O.K. (Rubiaceae), Stereospemum colais (B.-H. ex Dill.) Mabb. (Bignoniaceae), Phyllanthus emblica L. (Euphorbiaceae), and Ficus superba (Miq.) Miq. var. japonica Miq. (Moraceae). Desmodium gangeticum (L.) DC. and Flemingia macrophyl!a (Willd.) Prain (both Leguminosae, Papilionoideae) are common deciduous treelets 1–2 m tall in this habitat.

The ground flora, especially the herbs is diverse and includes numerous perennial species, many of which flower in the dry season before their leaves appear. Typical ground herbs are mostly monocots, e.g. Curcuma roscoeana Wall., C. petiolata Roxb. Zingiber smilesianum Craib, and Kaempferia elegans Wall. (all Zingiberaceae); Amorphophallus muelleri Bl. (Araceae, Figs. 7 & 8), and several ground orchids (Orchidaceae) including Nervilia aragoana Gaud. and Geodorum diversifolium (Lam.) Schltr.

In general, the degraded forest has fewer individuals and species of both woody climbers and epiphytes than in primary forested areas. Old secondary growth and degraded forested areas often merge and, therefore, are difficult to distinguish. Similarly, degraded forested areas also merge with primary forested habitats, thus absolute distinctions between these habitats is often difficult.

Rock Flora

As in other limestone areas, many of the plants acually growing on this rock or its recrystallized/degraded form, tufa or marl, are only found in this habitat and are frequently very localized in distribution (i.e. endemic). The best time to see these plants, all of which are herbs, is during the latter part of the rainy season, i.e. August-October. These lithophytes or more specifically calciphytes include at least 6 species of Argostemma (Rubiaceae), e.g. A. albovenatum Gedd. and A. plumbeum Craib, and 4 species of Begonia (Begoniaceae), e.g. B. demissa Craib and B. notata Craib. Pilea aff. wightii Wedd. (Urticaceae), Caulokaempferia saxicola K. Lar., Globba substrigosa King ex Bak. (both Zingiberaceae), and Selaginella delicatula (Desv.) Alst. (Selaginellaceae) are abundant, especially where the rock is shaded and wet. Impatiens opinata Craib, I. patula Craib (both Balsaminaceae) as well as Rhynchoglossum obliquum Bl. (Gesneriaceae) are also common calciphytes, but are often found in drier places. At least 28 species of calciphytes have been collected in the area.

RIPARIAN AND RHEOPHYTIC PLANTS

Although much of original forest cover along Rokee Stream has been destroyed, there are still some intact parts in the village areas. Most of the trees are evergreen, below 10 m tall, and have extensive root systems in the alluvium. Dillenia indica L. (Dilleniaceae) is deciduous for a few days in August, while all of the others are evergreen. e.g. Crateva magna (Lour.) DC. (Capparaceae), Elaeocarpus rugosus Roxb. (Elaeocarpaceae), Aesculus assamica Griff. (Hippocastanaceae), Eugenia megacarpa Craib (Myrtaceae), and Homonoia riparia Lour. (Euphorbiaceae). The edible fern Diplazium esculentum (Retz.) Sw. (Athyriaceae) is common in open places along the stream.

OTHER BOTANICAL WORK

It is only in recent years that the Sangklaburi area become easily accessible to botanists, thus there has not been any previous detailed floristic work done there. Other limestone areas in the region, e.g. Tak Province to the north and Ratburi Province to the south have not received much botanical attention either. The only other nearby limestone habitat that has been studied is on Si Chang Island, Chonburi Province which is in the Gulf of Thailand. The vegetation there has been so severely degraded, having only 274 species (MAXWELL, 1994), that it presently has no comparison to that in the Saneh Pawng Village area.

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Appendix 1. List of species. The details, in coded form, for each species are presented in the following order: habit, seasonality, habitat, abundance; flowering, fruiting, and leafing periods. The coded abbreviations are as follows:

habit:	h	=	herb	abundance:	1	=	rare
	v	=	vine		2	=	uncommon
	S	=	shrub		3	=	common
	1	=	treelet		4	=	abundant
	t	=	tree	phenology:	fi	=	flowering
	wc	=	woody climber		fr	=	fruiting
	Εp	=	epiphyte		lf	=	leafing
	Pa	=	parasite	months:	ja	=	January
	Sa	=	saprophyte		fb	=	February
	Ls	=	on limestone		mr	=	March
	G	=	ground		ар	=	April
seasonality:	а	=	annual		my	=	May
	P	=	perennial		jn	=	June
	c	=	evergreen		jl	=	July
	d	=	deciduous		ag	=	August
habitat;	đa	=	disturbed area		sp	=	September
	sg	= .	secondary growth		oc	_	October
	bb/df	=	bamboo + deciduous forest		nv	=	November
	mxf	=	mixed evergreen/deciduous forest		dc	=	December
	eg	=	more evergreen area in mxf				

Species	Habit	Season-	Habitat	Abun-	Phenology			
Species	nabit	ality	naonai	dance	fl	fr	lf	
ANGIOSPERMS-DICC	OTS							
RANUNCULACEAE								
Clematis smilacina Bl.	V	p	wet areas in da	2	ja-fb	тг-ар		
Naravelia zeylanica	v	P	wet areas	2	nv-dc	ja-fb		
(L.) DC.								
DILLENIACEAE								
Dillenia indica L.	t	pd	streams	3	jl- a g	ос-ја	jn-ap	
Dillenia parviflora	t	pd	bb/df	4	ja-mr	mr-ap	ap-do	
						-	-	
- ***	t	pd	mxf, sg	3	fb-mr	my-jn	ap-de	
Griff. var. kerrii (Craib) Hoogl. Dillenia pentagyna Roxb.				·		•		
MAGNOLIACEAE								
Talauma hodgsonii Hk. f. & Thoms.	t	pe	mxf	2	mr-my	ag-oc	ja-do	

Species	Season- Habit	Habitat	Abun-	Phenology			
		ality		dance	fi	fr	If
ANNONACEAE							
Anaxagorea luzonica	1	pe	mxf	3	mr-jn	jn-ag	ja-dc
A. Gray							
Cananga odorata	t	pd	da, sg	3	mr-ap	fb-my	ap-m
(Lmk.) Hk. f. var.		•	,	_	r		-F
odorata							
Cyathocalyx sp.	t	pď	bb/df	3	ap	?	ja-dc
•				•	- r	·	J 40
Enicosanthum sp.	t	pe	mxf	3	ag-sp	?	ja-dc
Goniothalamus	1	pe	mxf	3	jn-jl	sp oc	ja-dc
griffithii Hk. f. & Thoms.		•			• •	•	•
Meiogyne sp.	t	pe	mxf	3	ag-sp	ap-my	ja-dc
	-	P		3	ag-sp	ap-my	ja-uc
Miliusa thorelli	l, s	pe	mxf	3	ap-my	jn-jl	ja-dc
Fin. & Gagnep.							
Orophea acuminata A. DC.	l, t	pe	mxf	3	mr-ap	jn-ag	ja-dc
Orophea thomsonii Bedd.	1		mxf	3	:- G	•	
orophea monisomi bead.	•	pe	шхі	3	ja-fb	?	ja-dc
Orophea sp.	· t	pe	mxf	3	sp-oc	?	ja-dc
Polyalthia aff.	t	ре	mxf	3	?	20-en	ja-dc
cinnamomea Hk. f. & Th.	•	P		3	•	ag-sp	ja-uc
MENISPERMACEAE							
Cissampelos pareira	v	ре	da, sg	3	jn-jl	90-00	ia da
var. hirsuta (BH. ex DC.)	•	PC	va, sg	,	J11-J1	ag-oc	ja-dc
Forman							
Cyclea barbata Miers	v	pe	da, sg	3	ap-my	jn-ag	ja-dc
	٠	P-	, ₀ &	J	ap-111y	Ju-ag	ja-uc
Stephania crebra For.	v	pe	da, sg	3	jn-jl	ag-sp	ja-dc
inomiscium petiolare	wc	pe	mxf	3	my-jn	ag-oc	ja-dc
łk. f. & Thoms.		•		-	, 3		,
Tinospora crispa	v	pd	da, sg, bb/df	3	fb-mr		in :-
L.) Hk. f. & Thoms.	•	P~	va, og, vviul	J	10-1111	ap-my	jn-ja
·							
'inospora sinensis Lour.) Merr.	v	pd	da, sg, bb/df	3	ja-fb	тг-ар	jn-ja
·							
RUCIFERAE	•		_	_			
orippa heterophylla	h	a	streams in/	3	mr-my	ap-jn	ji-jn

		Season-		Abun-	P	henology	
Species	Habit	ality	Habitat	dance	u	fr	If
CAPPARACEAE							
Capparis assamica	s(scan	dent) pe	mxf	3	ap-my	sp-oc	ja-dc
Hk. f. & Th.	l, wc	_					
Crateva magna (Lour.) DC.	t	pd	streams in mxf, sg	3	mr-ap	ag-sp	mr-fb
(Low.) DC.			mar, sg				
Neothorelia laotica	wc	pd	bb/df	2	?	ap	jn-ap
Gagnep.							ew Record
						(Maxwell, 1994a)
DOLVCAL ACEAE							
POLYGALACEAE	h	а	bb/df	3	sp-oc	oc-nv	jn-nv
Polygala isocarpa Chod.	11	a	ooral	J	sp-oc	oc-11 v	J11 114
HYPERICACEAE							
Cratoxylum formosum	t	pd	bb/df, sg	4	mr-my	jn-ag	mr-ja
(Jack) Dyer ssp.							
pruniflorum (Kurz) Gog.							
Cratoxylum	t	pd	bb/df, sg	3	mr-my	jn-ag	mr-ja
neriifolium Kurz							
GUTTIFERAE							
Garcinia xanthochymus	t	pe	mxf	3	mr-ap	oc-ja	ja-dc
Hk. f. ex T. And.							
FLACOURTIACEAE							
Casearia flavovirens Bl.	t	pd	mxf	3	?	jl-ag	mr-fb
Casearia aff. glomerata Roxb.	1	pe	mxf	3	?	jn-jl	ja-dc
Flacourtia indica	t (1)	pd	bb/df	3	fb-my	sp-oc	mr-ja
(Burm. f.) Merr.	.,	•			•	•	•
Hydnocarpus kurzii	t	pe	mxf	3	?	jn-ag	ja-dc
(King) Warb. ssp. australis Sleum.		•				, ,	•
DIPTEROCARPACEAE							
Dipterocarpus alatus	t	pe	eg	4	ja-fb	ap-my	ja-dc
Roxb. ex G Don		•	-0		,	1 ,	·
Dipterocarpus	ŧ	pe	eg	4	ja-fb	ap-my	ja-dc
turbinatus Gaertn. f.	•	P	-6	•	J 1-0	- r ,	,
Hopea odorata Roxb.	t	pe	streams in	3	ja-fb	ap-my	ja-dc
var. odorata	•	r	mxf	,	J 10	-ry	j u u
Parashorea stellata Kurz		n c	mvf	2	io sh		in da
i arasnorea sienaia Kurž	t	pe	mxf	3	ja-fb	mr-ap	ja-dc

Species	Habit	Season-	Habitat	Abun-	Phenology			
		ality		dance	fl	fr	If	
MALVACEAE								
Hibiscus	t	pe	da, sg	3	mr-ap	nv-ja	ja-dc	
macrophyllus Roxb. ex Horn.					•	·	•	
Hibiscus surattensis L.	h	a	da, sg	3	nv-dc	ja-fb	jn-fb	
Sida rhombifolia L.	h	pe	da, sg	4	ag-oc	sp-ja	ja-dc	
ssp. rhombifolia		•				4,3	J	
Urena lobata L. ssp.	h	pe	da, sg	4	sp-ja	oc-mr	ja-dc	
lobata var. lobata		P	, og	•	эр-ја	00-1111	ja-uc .	
BOMBACACEAE								
Bombax ceiba L.	' t	pd	bb/df	4	dc-ja	ap-my	fb-nv	
STERCULIACEAE								
Byttneria integrifolia Lace	wc	pe	da, sg, bb/df	3	oc-nv	ja-fb	ja-dc	
Byttneria pilosa Roxb.							J	
Буинена риоза Roxo,	WC	pd	da, sg, bb/df	3	oc-nv	ja-fb	jn-fb	
Helicteres hirsuta Lour.	8	pd	bb/df	3	sp-nv	fb-mr	my-m	
Melochia umbellata	t	pd	da, sg	3	mr-ap	jn-ag	my-mi	
(Houtt.) Stapf		•	· • - &	•	up	Jr. ug	my m	
Pterocymbium laoticum Tard.	· t	pd	mxf	3	ja-fb	ap-my	jn-dc	
Deana		-			J = 10	up my	jii uc	
Pterospermum acerifolium Willd.	t	pe	mxf	3	ap-my	ag-sp	ja-dc	
Pterospermum	1	pd	bb/df, sg	3	mr an	nn 00		
semisagittatum Ham. ex Roxb.		P.	ou u., s _b	3	mr-ap	sp-oc	my-mr	
Scaphium scaphigerum	t	pd	mxf	4	in Gr			
(D. Don) Guib. & Pl.	•	pu	MIXI	7	ja-fb	ap-my	my-ap	
Sterculia lanceolata Cav.	1	pe	mxf	3	fb-ap	an il	in da	
	-	P	112/1	,	то-ар	ap-jl	ja-dc	
Sterculia ornata Wall. ex Kurz	ŧ	pd	bb/df	3	ja-fb	mr-ap	ap-dc	
Wall of Reil								
Sterculia aff.	t	pd	mxf	3	fb-mr	mr-ap	my-dc	
tigmarota Pierre								
Sterculia versicolor Wall.	t	pd	da, sg	3	ja-fb	mr-ap	my-dc	
TILIACEAE			-		-		•	
Grewia hirsuta Vahl	1	pd	bb/df	3	jn-ag	ja-fb	mv io	
		r-		,	ìπ-αR	Ja-10	my-ja	
dicrocos paniculata L.	t (1)	pe	da, sg	3	ap-my	jl-sp	ja-dc	

Species	Season- Habit		Habitat	Abun-	Phenology			
		ality		dance	fl	fr	If	
Triumfetta rhomboidea Jacq.	h	a	da, sg	4	oc-dc	dc-fb	my-fb	
ELAEOCARPACEAE Elaeocarpus rugosus Roxb.	t	pe	streams in mxf	4	тг-ар	jl-ag	ja-dc	
OXALIDACEAE Biophytum umbraculum Welw.	h	a	bb/df	3	jl-nv	sp-dc	jn-dc	
BALSAMINACEAE Impatiens opinata Craib	h	a	bb/df (Ls)	3	sp-oc	oc-nv	jn-nv	
Impateins patula Craib	h	a	bb/df (Ls)	3	sp-oc	oc-nv	jn-nv	
RUTACEAE Atalantia roxburghina Hk. f.	t	pe	mxf	3	ap-my	sp-oc	ja-dc	
Glycosmis ovoidea Pierre	t	pe	mxf	3	ap-my	jl-ag	ja-dc	
Glycosmis aff. parva Craib	1	pe	mxf	3	?	ap-my	ja-dc	
Micromelum falcatum Lour.) Tana.	1	pe	da in mxf	3	ja-mr	jn-ag	ja-dc	
Toddalia asiatica (L.) Lmk.	wc	pe	mxf, da	3	ja-fb	ag-sp	ja-dc	
Zanthophyllum oxyphyllum Edgew.	wc	pe	mxf	3	ja-fb	ag-sp	ja-dc	
SIMAROUBACEAE Picrasma javanica B1.	ŧ	pe	streams in mxf	3	mr-my	jn-ag	ja-dc	
BURSERACEAE Garuga floribunda Decne.	t	pd	bb/df, mxf	3	fb-mr	ар-ос	my-ja	
Protium serratum Wall. ex Colebr.) Engl.	t	pd	bb/df	3	fb-mr	jn-ag	mr-fb	
MELIACEAE Aglaia sp.	t (l)	pe	mxf	3	?	?	ja-dc	
Aphanamixis Polystachya (Wall.) R. Parker	t	pe	mxf, da	3	ag-nv	dc-mr	ja-dc	
Dysoxylum densiflorum Bl.) Miq.	t	pe	mxf	3	?	ja-fb	ja-dc	
<i>ysoxylum</i> sp.	t	pe	mxf	3	?	mr-my	ja-dc	

Si		cason-	Habitat	Abun-	Phenology			
Species	Habit	ality	riaditat	dance	fl	fr	If	
OLACACEAE								
Erythropalum scandens Bl.	wc	pe	mxf	3	oc-nv	mr-ap	ja-dc	
CACINACEAE								
Gomphandra quadrifida	l (s)	pe	mxf	3	jn-jl	ag-sp ja	ı-dc	
(Bl.) Sleum. var. quadrifida								
lodes cirrhosa Turcz.	v	pe	mxf	3	mr-ap	?	ja-dc	
Phytocrene bracteata Wall.	wc	pe	mxf	3	?	jn-jl	ja-dc	
CARIOPTERIDACEAE								
Cardiopteris quinqueloba	v	a	da, sg	3	sp-oc	dc-ja jn	-ja	
(Hassk.) Hassk.								
CELASTRACEAE			•					
Celastrus monospermus Roxb.	wc	pe	mxf	3	ap-my	dc-fb	ja-dc	
Euonymus cochinchinensis	t (l)	pė	mxf	3	ap-my	il-ag ja	-dc	
Lour.	(1)	P℃	ILLA	3	up my	J. 45 J4	-	
Euonymus javanicus Bl.	t	pe	mxf	3	mr-ap	jn-jl	ja-dc	
RHAMNACEAE								
Colubrina pubescens Kurz	wc (s)	pd	bb/df, da	3	oc-nv	ja-fb	my-ft	
Gouania leptostachya	wc	pe	streams in	3	ag-sp	ja-fb	ja-dc	
DC. var. leptostachya			mxf			•	•	
Ventilago denticulata Willd.	wc	pd ·	bb/df	3	oc-nv	ja-mr a	n-fh	
vermage acrossessass versas.		μu	oora	,	00 IIV	Ju u	P 10	
VITACEAE Ampelocissus martini Planch.	••		bb/df	3	i i1		il da	
атрегосіззиз танин ғынсп.	v	pd	DOVCI	3	jn-jl	sp-oc	jl-dc	
Cayratia tenuifolia	v	pd	da, sg	3	jn-sp	jl-oc	ja-dc	
(Wight & Arn.) Gagnep. var. tenuifolia								
·								
Cissus adnata Roxb.	wc	pd	da, sg	3	nv-dc	mr-my	ap-do	
Cissus aff. adnata Roxb.	wc	pe	eg	3	jn-jl	sp-nv	ja-dc	
						_	•	
Cissus aff. assamica (Laws.) Craib	wc	pd	bb/df	3	jn,jl	?	ap-de	
Cissus discolor Bl.	v	pe	mxf	3	ag-sp	oc-nv	ja-dc	
var. discolor								
Tetrastigma cruciatum	wc (v)	pe	mxf	3	ap-my	sp-nv j	a-dc	
Craib & Gagnep.								

Species	Habit	Season-	Habitat	Abun-	Phenology			
Species	HAUR	ality		dance	fl	fr	If	
Tetrastigma lanceolarium (Roxb.) Pl.	wc	pe	mxf	3	jn-jl	ag-oc ja	a-dc	
Tetrastigma laoticum Gagnep.	wc	pe	mxf	3	mr-my	jl-sp	ja-dc	
Tetrastigma obovatum (Laws.) Gagnep.	wc	pde	mxf	3	ap-my	ja-mr	ja-dc	
Tetrastigma sp.	v	pe	mxf	3	ja-fb	ap-my	ja-dc	
LEEACEAE								
Leea diffusa Laws.	l	pp	bb/df	3	oc-nv	dc-fb	jn-fb	
Leea indica (Burm. f.) Merr.	l	pe	mxf	3	my-sp	ag-oc	ja-dc	
Leea rubra Bl. ex Spreng.	ì	pde	mxf	3	jn-ag	ag-nv	ja-dc	
SAPINDACEAE Allophyllus cobbe (L.) Raeusch.	1	pde	da, sg, mxf	3	jn-ag	ag-sp	ja-dc	
Nephelium cuspidatum Bl. (cultivated)	t	pe	da	2	ja-fb	ap-my	ja-dc	
Nephelium hypoleucum Kurz	t	pe	mxf	4	mr-ap	ap-my	ja-dc	
Sapindus rarak DC.	t	pd	mxf	3	mr-ap	nv-dc	my-ja	
Schleichera trijuga Willd.	t	pd	bb/df	3	mr-ap	jn-jl	my-d	
HIPPOCASTANACEAE Aesculus assamica Griff.	t	pe	streams in mxf	3	mr-ap	?	ja-dc	
STAPHYLEACEAE Turpinia pomifera (Roxb.) Wall. ex DC.	t (1)	pe	sg, mxf	3	ja-fb	oc-dc	ja-dc	
SABIACEAE Meliosma simplicifolia (Roxb.) Walp. ssp. fordii (Hemsl. ex Forb. & Hemsl.) Beus.	t	pe	streams in mxf	3	fb-mr	jl-sp	ja-dc	
ANACARDIACEAE Lannea coromandelica (Houtt.) Merr.	t	pd	bb/df	3	ja-fb	ap-my	jn-dc	
Parishia insignis Hk. f. Rhus sp.	t t	pd pd	mxf da, bb/df	3	? ja-fb	ja-fb ap-my	jn-fb ap-ja	

Species	Habit	Season-	Habitat	Abun-		henology	
species	Haun	ality	navitat	dance	<u>fl</u>	fr	If
Semecarpus cochinchinensis Engl.	t	ре	mxf	3	dc-fb	тг-ар	ja-dc
Spondias pinnata (L. f.) Kurz	t	pd	bb/df, mxf	4	ja-fb	dc-fb	my-dc
Swintonia schwenkii (T. & B.) T. & B. ex Kurz	t	pe	mxf	3	?	mr-ap	ja-dc
CONNARACEAE Connarus semidecandrus Jack	wc	pe	mxf	3	mr-ap	ap-jn	ja-dc
LEGUMINOSAE (MIMOSOIDEA Acacia megaladena Desv. var. megaladena	vc	pd	bb/df	4	ap-my	nv-dc	ap-fb
Acacia torta (Roxb.) Craib	wc	pe	streams in mxf	3	oc-nv	fb-mr	ja-dc
Adenanthera pavonina L. var. microsperma (Teijsm. & Binn.) Niels.	t	pd	bb/df, sg	4 .	ap-my	ja-fb	my-ja
Albizia lucidior (Steud.) Niels.	t	pd	mxf	3	mr-ap	dc-mr	my-mr
Entada rheedii Spreng.	wc	pd	sg, mxf	3	mr-ap	nv-fb	my-mr
Mimosa pudica L.	h	pe	da, sg	4	ag-nv	nv-ja	ja-dc
Parkia sumatrana Miq.	t	pd	streams in mxf	2	nv-dc	my-jl	jn-mr
Xylia xylocarpa (Roxb.) Taub. var. kerrii (Craib & Hutch.) Niels.	t	pd	bb/df, mxf	4	mr-ap	mr-ap	ap-ja
LEGUMINOSAE (CAESALPINIO Bauhinia viridescens Desv. var. hirsuta K. & S.S. Lar.	OIDEAE) s	pd	bb/df, mxf	3	sp-oc	ja-fb	my-fb
Caesalpinia crista L.	wc	pd	da, sg	3	oc-nv	ja-fb	my-fb
Caesalpinia cucullata Roxb.	wc	pe	mxf	3	dc-ja	mr-ap	ja-dc
Caesalpinia furfuracea (Prain) Hatt.	wc	pd	da, sg	3	nv-dc	fb-mr	ap-dc
Cassia alata L.	l (s)	pe	da, sg	3	oc-dc	ja-mr	ja-dc
Cassia fistula L.	t	pd	bb/df, mxf	3	mr-ap	nv-ja	ap-ja
Cassia tora L.	h	a	da, sg, bb/d	f 4	sp-oc	nv-ja	my-dc

		Season-	TT 1	Abun-	F	henology	
Species	Habit	ality	Habitat	dance	fl	fr	If
Saraca declinata (Jack) Miq.	t	pe	mxf	3	sp-oc	ja-mr	ja-dc
LEGUMINOSAE (PAPILIONOIDE	AE)						
Butea superba Roxb.	wc	pd	bb/df	3	ja-fb	?	my-dc
Cajanus goensis Dalz.	v	ре	da, sg	3	ja-fb	sp-oc	my-fb
Callerya (Millettia) atropurpurea (Wall.) Gees.	t	pe	mxf	3	ja-fb	ap-jn	ja-dc
Canavalia ensiformis (L.) A. DC.	v	pe	da, sg, bb/df	3	oc-nv	mr-ap	jn-mr
Dalbergia discolor Bl. ex Miq.	wc	pd	da, sg, bb/df	3	jn-jl	nv-ja	ap-fb
Dalbergia oliveri Gamb. ex Prain	t	pd	bb/df, mxf	3	ap-my	ag-sp	my-dc
Desmodium gangeticum (L.) DC.	1	pd	da, sg, bb/di	3	oc-nv	ja-fb	my-fb
Desmodium oblongum Wall. ex Bth.	. 1	pd	bb/df	3	nv-ja	dc-fb	ap-fb
Desmodium triangulare (Retz.) Mespp. triangulare var. triangulare	π. l (s)	pd	da, sg	3	oc-dc	dc-fb	my-fb
Desmodium triquetrum (L.) DC. ssp. triquetrum	1	pd	da, sg	3	oc-dc	dc-fb	ap-fb
Dunbaria circinalis (Bth.) Bak.	v	a	da, sg	3	nv-ja	ja-mr	my-mr
Dysolobium grande (Wall. ex Bth.) Prain	v	a	da, sg, bb/di	f 3	oc-nv	dc-fb	my-fb
Erythrina subumbrans (Hassk.) Metr.	t	pđ	bb/df, mxf	3	dc-fb	mr-ap	ap-dc
Flemingia macrophylla (Willd.) Prain	1	pd	bb/df	4	oc-dc	ja-fb	my-fb
Millettia extensa (Bth.) Bth. ex Baker	wc	pd	da, sg, bb/d	f 3	mr-ap	oc-dc	my-mr
Pachyrhizus erosus (L.) Urb. (cultivated & escaped)	v	a	da, sg	3	sp-oc	nv-dc	my-dc
Pueraria candollei Grah. ex Bth.	wc	pd	mxf	2	ja-fb	ap-my	my-mr
Pueraria lobata (Willd.) Ohwi var. montana (Lour.) Maes.	wc	pd	da, sg, mxf	2	sp-oc	dc-ja	my-ja
Shuteria hirsuta Baker	v	a	da, sg, bb/d	f 3	nv-ja	fb-mr	jn-mr

Species	Habit	Season-	Habitat	Abun-	Phenology			
	Haun	ality	Habitat	dance	fl	fr	If	
Shuteria sp.	v	a	da, sg	2	?	ja-fb	jn-mr	
Spatholobus acuminatus Wall. ex Bth.	wc	pe	streams in da, sg	2	?	ja-mr	ja-dc	
Teramnus labialis (L.f.) Spring.	v	a	bb/df	3	oc-nv	ja-fb	my-fb	
<i>Uraria campanulata</i> (Wall. ex Bth.) Gagnep.	s (h)	pd	bb/df	3	oc-nv	nv-ja	my-ja	
Vigna umbellata (Willd.) Ohwi & Oha. var. umbellata	v	a	da, sg, bb/df	3	dc-ja	fb-mr	my-mr	
ESCALIONIACEAE Itea riparia Coll. & Hemsl.	s	pe	streams in mxf	2	nv-ja	ja-mr	ja-dc	
COMBRETACEAE Anogeissus acuminata (Roxb. ex Dc.) Guill. & Perr.	t	pd	bb/df	3	ja-mr	ap-my	my-ja	
Calycopteris floribunda (Roxb.) Lmk.	wc	pd	bb/df	3	ja-fb	mr-my	my-dc	
Combretum chinense Roxb. ex G. Don	wc	pd	streams in mxf	2	oc-nv	ja-fb	mr-fb	
Combretum latifolium Bl.	wc	pe	da, sg	3	ja-fb	ap-my	ja-dc	
Quisqualis indica L. var. indica	wc	pd	bb/df	3	ja-fb	mr-ap	my-ap	
Terminalia bellirica (Gaertn.) Roxb.	t	pd	bb/df	3	mr-ap	oc-dc	my-mr	
MYRTACEAE Eugenia cerasiformis (Bl.) DC.	t	pe	streams in mxf	4	oc-nv	dc-ja	ja-dc	
Eugenia filiformis Duth.	1	pe	mxf	2	ja-fb	?	ja-dc	
Eugenia fruticosa (DC.) Roxb.	t	pe	mxf	2	?	ap-my	ja-dc	
Eugenia megacarpa Craib	t	pe	streams in mxf	3	ja-mr	my-jl	ja-dc	
Eugenia toddalioides Wight	t	pe	mxf	3	?	jn-jl	ja-dc	
LECYTHIDACEAE Barringtonia acutangula (L.) Gaertn. ssp. spicata (Bl.) Pay.	t	pe	bb/df, mxf	3	ap-my	sp-oc	ja-dc	

Ci	TT-L:	Season-	II-biasa	Abun-	Phenology			
Species	Habit	ality	Habitat	dance	fl	fr	If	
LYTHRACEAE								
Lagerstroemia speciosa (L.)	t	pd	bb/df, mxf	3	my-jn	ag-mr	ap-ja	
Pers. var. speciosa		•	,					
Lagerstroemia tomentosa Presl	t	pd	da, sg, bb/df	3	fb-mr	ap-my	ap-fb	
SONNERATIACEAE								
Duabanga grandiflora	t	pe	mxf	4	jl-sp	mr-my	ja-dc	
(Roxb. ex DC.) Walp.		_						
ONAGRACEAE								
Ludwigia hyssopifolia	h	а	da, sg, often	4	ja-dc	ja-dc	ja-dc	
(G. Don) Exell			in wet places	3				
CUCURBITACEAE								
Cucumis sativus L.	v	a .	da, sg	3	ag-oc	dc-ja	my-ja	
Gomphogyne cissiformis Griff.	v	a	bb/df	3	sp-oc	nv-dc	my-dc	
Momordica cochinchinensis	v	a	mxf	3	ag-oc	ap-my	jn-my	
(Lour.) Spr.					_			
Neoalsomitra sarcophylla (Wall.)	v	pe	bb/df	3	oc-dc	?	ja-dc	
Hutch.	•	pc.	oorai	3	oc-ac	•	ja-uc	
Neoalsomitra	v	pe	da, sg	3	oc-dc	?	ja-dc	
(Alsomitra) plena Craib		F	, - -	_	00 00	·	,	
Thladiantha hookeri Cl.	v	a	da, sg, mxf	3	jn-nv	?	my-m	
Trichosanthes cucumerina L.		_	bb/df	2		:-		
Tricriosanines cucumerina L.	v	a	DOVGI	3	sp-ap	mr-ja	my-mr	
Trichosanthes ovigera Bl.	v	a	da, sg	3	sp-nv	jl-ag	my-m	
Trichosanthes rubriflos	v	pe	da, sg	3	jn-oc	sp-dc	ja-dc	
Thor. ex Cay.		F	, - -	_	J 00	op	J	
Zehneria maysorensis	v	a	da, sg, mxf	3	sp-nv	ny-ja	my-ja	
(Wight & Arn.) Arn.			- -		•		<i>,</i> , , ,	
BEGONIACEAE								
Begonia demissa Craib	h	pd	mxf (Ls)	3	ag-sp	sp-oc	jn-oc	
Begonia notata Craib	h	pd	mxf (Ls)	3	jn-ag	ag-oc	jn-oc	
Begonia aff. subperfoliata	h	pd	bb/df	3			in	
Parish ex Kurz		Įα	mxf (Ls)	,	ag-oc	sp-nv	jn-nv	
Begonia sect. uniplacentales Cl.	h	nd.	muf (I a)	2			in	
resonia soci, unipiaceniaies Cl.	h	pd	mxf (Ls)	3	ag-oc	sp-nv	jn-nv	

Species	Habit	Season-	Habitat	Abun-	1	Phenology	
Species	Habit	ality	Havitat	dance	fl	fr	If
UMBELLIFERAE							
Heracleum barmanicum Kurz	h	a	bb/df	2	sp-nv	nv-dc	jn-dc
ARALIACEAE							
Schefflera sp.	Ep, s	pe	mxf	2	?	?	ja-dc
Trevesia palmata (DC.) Vis.	1	pe	mxf	3	ja-fb	ap-jn	ja-dc
RUBIACEAE							
Aidia cochinchinensis Lour.	t	pe	mxf	2	my-jn	ag-sp	ja-dc
Aphaenandra uniflora (Wall. ex G. Don) Brem.	h	a	da, sg, bb/df	2	jn-jl	ag-sp	my-o
Argostemma albovenatum Gedd.	h	pd	mxf (Ls)	4	jn-ag	ag-sp	my-o
Argostemma condensum Craib	h	pd	mxf (Ls)	4	jl-sp	sp-oc	my-o
Argostemma aff. dispar Craib	h	pd	bb/df (Ls)	4	jn-ag	ag-sp	my-o
Argostemma parvum Gedd.	h	pd	mxf (Ls)	4	jl-sp	sp-oc	my-o
Argostemma plumbeum Craib	h	pd	mxf (Ls)	4	jl-sp	sp-oc	my-o
Argostemma aff. unifoliolide King	h	pd	mxf (Ls)	4	jl-sp	sp-oc	my-o
Canthium dicoccum (Gaertn.) T. & B. var. dicoccum	t	pe	mxf	3	oc-nv	ja-fb	ja-dc
Canthium glabrum Bl.	t	pe	da, sg, mxf	3	ap-my	sp-oc	ja-dc
Catunaregam tomentosa (Bl. ex DC.) Tirv.	s	pd	bb/df, mxf	3	mr-ap	jl-sp	ap-nv
Catunaregam sp.	t	pd	bb/df	3	?	jn-jl	my-n
Duperrea pavettifolia (Kurz) Pit.	l (s)	pe	mxf	3	my-jn	ag-sp	ja-dc
Gardenia coronaria Ham.	t	pd	bb/df, mxf	2	mr-ap	ap-jn	mr-do
Geophila repens (L.) I.M. John.	h	pe	bb/df, mxf	3	jn-jl	sp-nv	ja-dc
Hydnophytum formicarum Jack	Ep, h	pe	streams in mxf	2	?	?	ja-dc
Hymenodictyon orixense Roxb.) Mabb.	t	pđ	bb/df, mxf	3	my-jn	nv-fb	my-d

Carrier	Habit	Season-	Habitat	Abun-	P	henology	
Species	חמטונ	ality	ravitat	dance	fl	fr	If
Ixora finlaysoniana Wall. ex G. Don	s	pe	da, sg, mxf	3	mr-jn	oc-dc	ja-dc
Ixora nigricans Wight & Arn. var. ovalis Pit.	ı	pe	mxf	3	ag-sp	nv-dc	ja-dc
Lasianthus wallichii Wight	1	pe	mxf	3	? .	sp-oc	ja-dc
Mitracarpus villosus (Sw.) DC. (naturalized)	iı	a	da, sg	4	jl-oc	ag-nv	my-dc
Mitragyna rotundifolia (Roxb.) O.K.	t	pd	bb/df	3	sp-oc	nv-ja	my-ja
Mussaenda sanderiana Ridl. s(s	candent)	pe	da, sg, mxf	3	ja-mr	ap-jn	ja-dc
Mycetia chasalioides (Craib) Craib	1	pe	mxf	3	jn-jl	?	ja-dc
Mycetia paniculiformis Fuku.	1	pe	mxf	3	sp-oc	ja-fb	ja-dc
Nauclea orientalis (L.) L.	t	pe	streams in mxf	2	mr-ap	ag-oc	ja-dc
Ophiorrhiza gracilis Kurz	v	a	mxf (Ls)	2	jn-jl	sp-oc	my-nv
Ophiorrhiza hispidula Wall. ex G. Don var. hispidula	h	pe	mxf	3	my-jl	ag-oc	ja-dc
Paederia pilifera Hk. f.	v	pe	da, sg, bb/df	3	ja-fb	jn-jl	ja-dc
Psychotria calocarpa Kurz	1	pd	mxf	3	mr-ap	jn-jl	ja-dc
Psychotria ophioxyloides Wall.	1	pe	mxf	3	ap-jn	oc-dc	ja-dc
COMPOSITAE Blumea balsamifera (L.) DC.	h	a-pe	da-sg	3	ap-my	my-jn	ja-dc
Blumea napifolia DC.	h	a	da, sg	3	ja-fb	fb-mr	my-mr
Conyza sumatrensis (Retz.) Walk.	h	a	da, sg	4	my-dc	jn-ja	mr-ja
Eupatorium odoratum L.	h	a-pe	da, sg	4	nv-ja	dc-fb	my-fb
Vernonia pierrei Gagnep.	h	a-pe	bb/df	3	dc-ja	mr-ap	my-fb
MYRSINACEAE Ardisia attenuata Wall. ex A. DC. var. pubescens Flet.	s	pe	mxf	3	?	jn-jl	ja-dc

		Season-	TT-Li-	Abun-	F	henology	
Species	Habit	ality	Habitat	dance	fl	fr	If
Ardisia odontophylla Wall. ex A. DC.	1	ре	mxf	2	jl-sp	ja-fb	ja-dc
Maesa montana A. DC.	1 (s)	pe	da, sg	. 3	dc-fb	ap-jn	ja-dc
Maesa ramentacea Wall. ex Roxb.	t (1)	pe	da, sg	3	dc-fb	oc-dc	ja-dc
EBENACEAE	t	ne	mxf	3	mr-ap	?	ja-dc
Diospyros hasseltii Zoll.	·	pe	IIIXI	,	пи-ар	•	ja-uc
Diospyros scortechinii King & Gamb.	1	pe	mxf	2	?	ja-fb	ja-dc
SYMPLOCACEAE Symplocos sumunita BH. ex D. Don	t (1)	pe	mxf	. 3	dc-fb	ja-fb	ja-dc
OLEACEAE Jasminum coarctactum Roxb.	wc	pe	mxf	3	ap-my	jl-ag	ja-dc
Jasminum subglandulosum Kurz	wc	pe	mxf	3	oc-nv	mr-ap	ja-dc
Myxopyrum smilacifolium (Wall.) Bl. var. smilacifolium	wc	pe	mxf	3	тг-ар	jl-ag	ja-dc
APOCYNACEAE Aganosma? caryophyllata Wall. ex. G. Don	wc	pe	da, sg, mxf	2	?	dc-fb	ja-dc
Alstonia scholaris (L.) R. Br. var. scholaris	t	pd	mxf	3	nv-dc	mr-ap	mr-fb
Amalocalyx microlobus Pierre ex Spire	v, w	pd pd	mxf	3	jn-sp	nv-dc	my-d
Epigynum sp.	wc	pe	mxf	3	jn-jl	?	ja-dc
Holarrhena pubescens (BuchHam.) Wall. ex G. Don	t	pd	da, sg, bb/d	lf 3	mr-ap	jn-sp	ap-m
Rauvolfia serpentina (L.) Bth. ex Kurz	h	pd	da, sg, bb/d	lf 3	ja-ap	jn-sp	my-n
Tabernaemontana sp.	ì	pe	mxf	2	?	jn-ag	ja-dc
ASCLEPIADACEAE Dischidia hirsuta (Bl.) Decne.	Ep,	v pe	streams in mxf	2	mr-ap	?	ja-dc

Species	Habit	eason-	Habitat	Abun-	F	henology	
		ality		dance	fl	fr	If
Hoya acuta Haw. var. acuta (Roxb. Wall. Wight)	Ep, v	pe	streams in mxf	3	fb-mr	jn-ag	ja-dc
Hoya revoulta Wight	Ep, v	pe	mxf	3	mr-ap	?	ja-dc
?Hoya sp.	wc	pe	mxf	2	?	?	ja-dc
Marsdenia tinctoria R. Br.	v	ре	mxf	3	ap-jn	dc-fb	ja-dc
Myriopteron extensum (Wight) K. Sch.	v	ag	da, sg	3	ag-sp	fb-mr	my-fb
Raphistemma pulchellum (Roxb.) Wall.	v	pe	da, sg, bb/df	2	sp-oc	?	ja-dc
Tvlophora sp.	v	pe	mxf	3	jn-jl	?	ja-dc
LOGANIACEAE Buddleja asiatica Lour.	1 (s)	pd	da, sg	3	oc-ja	dc-mr	my-mı
Mitreola petiolata (Gmel.) Тогт. & A. Gray	h	a	da, sg, bb/df	3 _	sp-oc	oc-nv	my-nv
Fagraea ceilanica Thunb.	Ep, s	pe	mxf	2	my-jn	mr-ap	ja-dc
GENTIANACEAE Gardneria ovata Wall. ex oxb.	wc (v)	pe	mxf	2	ap-my	?	ja-dc
BORAGINACEAE			_				
Heliotropium indicum L.	h	a	da, sg	4	jn-nv	ag-dc	my-de
Rotula aquatica Lour.	s	pe	streams in mxf	3	nv-ja	dc-fb	ja-dc
Tournefortia intonsa Kett	v	pe	mxf	3	dc-ap	mr-jn	ja-dc
CONVOLVULACEAE							
Argyreia capitiformis (Poir.) Oost.	v	pe	da, sg, mxf	3	nv-ja	ja-mr	ja-dc
Argyreia (vide Lettsomia versicolor Κeπ)	v	pe	da, sg, bb/di	f 3	sp-nv	dc-fb	ja-dc
Lepistemon binectariferum (Wall.) O.K. var. binectariferum	v	pe	da, sg	3	dc-fb	тг-ту	ja-dc
Merremia vitifolia (Burm. f.) Hall. f.	v	pe	da, sg	3	ja-fb	mr-my	ja-dc
SOLANACEAE							
Solanum macrodon Wall. ex Nees	1 (h)	pe	mxf	3	jl-sp	oc-fb	ja-dc

Sacrica	Se Habit	ason-	Habitat	Abun-	I	Phenology	
Species	павн	ality	Habitat	dance	fl	fr	If
Solanum verbascifolium L. (naturalized)	1	pe	da, sg	4	jl-ja	ag-mr	ja-dc
SCROPHULARIACEAE Lindenbergia philippensis (Cham.) Bth.	h	a	da, sg, mxf	3	ja-mr	mr-ap	my-ap
Scoparia dulcis L. (naturalized)	h	a	da, sg	4	jn-ja	ji-fb	my-mr
OROBANCHACEAE Aeginetia indica Roxb.	Sa-Pa, h	pd	bb/df, mxf	3	ag-oc	sp-nv	leafles
Aeginetia pedunculata Wall.	Sa-Pa, h	pd	bb/df	2	jn-ag	ag-oc	leafles
LENTIBULARIACEAE Utricularia striatula Sm.	Ep, h	a	bb/df	2	ag-oc	sp-nv	my-nv
GESNERIACEAE Aeschynanthus gracilis Parish ex Cl.	Ep, v	pe	mxf	3	ja-fb	jn-jl	ja-dc
Aeschynanthus longicaulis Wall. ex R. Br.	Ep, v	pe	mxf	3	?	mr-ap	ja-dc
Aeschynanthus macranthus (Мет.) Pell.	Ep, h	pe	bb/df	3	oc-nv	ja-mr	ja-dc
Boea? hygrometrica (Bunge) R. Br.	h (Ls)	pd	bb/df	3	jl-ag	oc-nv	my-nv
Epithema carnosa (D. Don) Bth.	h, Ep, Ls	a, pd	mxf	3	jl-sp	ag-oc	my-nv
Rhynchoglossum obliquum Bl.	h (Ls)	a	bb/df,mxf	3	sp-nv	oc-dc	my-dc
Rhynchoglossum sp.	h (Ls)	pd	bb/df	3	sp-nv	oc-dc	my-dc
Stauranthera grandiflora Bth.	h (Ls)	pd	mxf	3	jn-sp	ag-oc	my-nv
BIGNONIACEAE Fernandoa adenophylla (Wall. ex G. Don) Steen.	t	pd	da, sg, bb/d	ıf 3	ag-oc	ja-fb	my-ja
Markhamia stipulata (Wall.) Seem. ex Sch. var. stipulata	t z	pd	da, sg, bb/d	ıf 3	nv-fb	sp-ja	my-ja
Oroxylum indicum (L.) Kurz	t (1)	pd	da, sg, mxf	3	jl-dc	dc-my	my-do
Pajanelia longifolia (Willd.) K. Sch.	t	pd	da, sg, mxf	2	dc-ja	?	my-fb

Species	Habit	Season-	Habitat	Abun-]	Phenology	
		ality		dance	ก	fr	If
Stereospermum colais (BH. ex Dillw.) Mabb.	t	pd	bb/df	3	sp-nv	ap-my	my-dc
ACANTHACEAE Asystasia chelonoides Ness	h	a-p	da, sg	2	ja-fb	my-jn	ja-dc
Barleria cristata L.	h	pd	bb/df	3	sp-dc	nv-fb	my-fb
Barleria strigosa Willd.	h	pd	bb/df	3	sp-nv	nv-ja	my-fb
Dipteracanthus repens (L.) Hassk.	h	a	da, sg, bb/df	3	my-sp	jl-nv	ap-dc
Eranthemum tetragonum Wall. ex Nees	h	а-р	bb/df, mxf	3	dc-fb	fb-ap	ja-dc
Justicia caloneura Kurz	h	pe	mxf	3	sp-nv	dc-ja	ja-dc
Justicia distincta Imlay	h	pe	da, sg, mxf	3	тг-ар	ag-sp	ja-dc
Justicia glabra Koen. ex Nees	h	pe	mxf	3	ja-fb	my-jn	ja-dc
Justicia oreophila Cl.	h	a-pe	bb/df	3	sp-nv	ja-fb	ja-dc
Lepidagathis fasciculata Nees	h	a	da, sg	3	dc-fb	ja-mr	my-mr
Lepidagathis incurva Ham. ex D. Don	h	a-pe	bb/df	3	nv-fb	ja-ap	(ja) my-dc
Lepidagathis thyrsiflora Brem.	h	а	mxf	3	dc-fb	ja-mr	my-mr
Perilepta siamensis (Cl.) Brem.	h	а-р	bb/df	3	nv-ja	ja-fb	(ja) my-fb
Phaulopsis dorsiflora (Retz.) Sant.	h	a-pe	da, sg, bb/df	3	dc-fb	ja-mr	(ja) my-mr
Pseuderanthemum crenulatum (Wall. ex Lindl.) Radlk.	h	pe	mxf	3	dc-fb	ja-mr	ja-dc
Pseuderanthemum aff. crenulatum (Wall. ex Lindl.) Radlk.	h	pe	mxf	3	dc-fb	ja-mr	ja-dc
Pseuderanthemum latifolium (Vahl) B. Han.	1 (s)	pe	mxf	3	nv-ja	ja-mr	ja-dc
Pseuderanthemum parishii (T. And.) Lindau	h	pe	mxf	3	ja-mr	fb-ap	ja-dc
Rungia parviflora Nees var. parviflora	h	a	bb/df	3	sp-ja	oc-fb	my-fb

Smaaisa		Season-	Unhitat	Abun-	Phenology			
Species	Habit	ality	Habitat	dance	u .	fr	If	
Staurogyne glauca (Nees) O.K.	h	a	bb/df, mxf	3	ja-fb	fb-ap	my-ar	
Strobilanthes aff acuminatus (Nees) T. And.	s (h)	pe	streams in mxf	3	dc-ja	fb-mr	ja-dc	
Strobilanthes coloratus Wall. ex T. And. var. crinita (T. And.) C	1 (s)	pd	bb/df (Ls)	2	nv-ja	ja-fb	my-de	
Strobilanthes esquirolii Lev.	s (h)	pe	mxf	3	dc-ja	fb-ap	ja-dc	
Strobilanthes turginodis Imlay	l (s)	pe	mxf	3	ag-oc	dc-fb	ja-dc	
Thunbergia laurifolia Lindl.	v, wc	pe	da, sg streams in m	3 nxf	sp-ap	dc-jn	ja-dc	
VERBENACEAE								
Clerodendrum infortunatum L.	1	pe	da, sg	3	fb-ap	ap-my	ja-dc	
Congea tomentosa Roxb. var. tomentosa	wc	pd	da, sg, bb/df mxf	5, 3	dc-fb	fb-ap	my-d	
Gmelina arborea Roxb.	t	pd	da, sg, bb/df	f 3	ja-fb	ap-my	my-d	
Premna corymbosa (Burm. f.) Rottl, & Willd. var. corymbosa	wc	pe	mxf	3	fb-mr	ap-my	ja-dc	
^P remna pyramidata Wall. ex Schauer	t	pe	da, sg streams in n	3 nxf	jn-jl	ag-sp	ja-dc	
Premna scandens Roxb.	wc	pe	da, sg, mxf	3	jn-ag	ag-oc	ja-dc	
Sphenodesme involucrata (Presl) Rob. var. involucrata	wc	pe	streams in mxf	3	nv-ja	fb-ap	ja-dc	
Vitex quinata (Lour.) Will.	t	pd	da, sg, bb/di mxf	f, 3	mr-ap	jl-ag	my-j	
LABIATAE								
Anisomeles indica (L.) O.K.	h	a	da, sg	3	sp-ja	oc-fb	my-f	
Gomphostemma oblongum Wall. ex Bth.	s	pe	mxf	3	jn-ag	ag-oc	ja-do	
Hyptis brevipes Poit.	h	a	wet da, sg	3	sp-nv	oc-dc	my-c	
Hyptis capitata Jacq.	h	a	da, sg	3	nv-ja	dc-fb	my-c	
Plectranthus sp.	h	pd	bb/df (Ls)	2	sp-oc	oc-nv	my-c	
Pogostemon macgregori W.W. Sm	. h	a	da, sg, mxf (Ls)	2	dc-ja	ja-mr	my-r	

C:'		Season-	Habitat	Abun-	P	henology	
Species	Habit	ality	Habitat	dance	fl	fr	If
NYCTAGINACEAE							
Pisonia umbellata (Forst.) Seem.	t	pe	mxf (Ls)	2	nv-dc	ap-my	ja-dc
AMARANTHACEAE							
Achyranthes aspera L.	h	a	da, sg	4	nv-ja	ja-mr	my-mr
Aerva sanguinolenta (L.) Bl.	h	pe	da, sg	3	ja-mr	fb-ap	ja-dc
Amaranthus gracilis Desf.	h	a	da, sg	4	ja-dc	ja-dc	ja-dc
Amaranthus spinosus L.	h	a	da, sg	4	ja-dc	ja-dc	ja-dc
POLYGONACEAE							
Polygonum barbatum L.	h	a	moist da, sg	3	ja-dc	ja-dc	ja-dc
ARISTOLOCHIACEAE			1.1.736	2		i	
Aristolochia tagala Cham.	v	pd	bb/df	3	sp-nv	ja-mr	my-mr
Thottea sumatrana (Merr.) Hou	h	pe	mxf	2	my-jl	ag-sp	ja-dc
PIPERACEAE				_		_	
Peperomia pellucida (L.) H.B.K. (naturalized)	h	pe	da-sg	3	jl-nv	ag-dc	ja-dc
Piper sarmentosum	v (h)	pe	da, sg	3	ag-oc	?	ja-dc
Roxb. ex Hunt. (cultivated & escaped)		·					
Piper aff. sylvaticum Roxb.	v	pe	bb/df, mxf	2	ag-oc	?	ja-dc
Piper umbellatum L.	s	pe	da, sg in	2	ja-dc	?	ja-dc
var. glabrius (Miq.) DC.			mxf				
CHLORANTHACEAE							
Chloranthus erectus (BH.) Verd.	S	pe	mxf	3	my-ag	oc-dc	ja-dc
MYRISTICACEAE Knema linifolia (Roxb.) Walp.	t	pe	mxf	3	ja-fb	mr-ap	ja-dc
• • •	•	r		_	J		,
LAURACEAE Cryptocarya sp.	t	pe	mxf	3	ap-jn	?	ja-dc
Litsea albicans Kurz	ì	_	mxf	2		20.00	
Litsea glutinosa	t	pe pd	da, sg	3	mr-my mr-ap	ag-sp ag-sp	ja-dc my-ap
(Lour.) C.B. Rob.							
HERNANDIACEAE							
Illigera trifoliata (Griff.) Dunn ssp. cucullata (Merr.) Kub.	wc	pe	da, sg, mxf	3	mr-ap	ap-my	ja-dc
Dum ssp. cucumata (MCII.) Kub.							

Caratas		eason-	17-L:a-a	Abun-	F	Phenology	
Species	Habit	ality	Habitat	dance	fl	fr	If
PROTEACEAE	•						
Helicia formosana	t	pe	mxf	2	ap-my	mr-jn	ja-dc
Hemsl. var. oblanceolata Sleum.							
LORANTHACEAE							
Dendrophthoe pentandra	Ep, Pa	pe	da, sg	3	dc-ap	fb-my	ja-dc
(L.) Miq.	S						
Macrosolen cochinchinensis	Ep, Pa	pe	da, sg	3	oc-fb	ja-ap	ja-dc
(Lour.) Tiegh.	s	•	. 5			•	•
Viscum articulatum	Ep, Pa,	ne	da, sg	2	ja-dc	ja-dc	ja-dc
Burm. f. (hyperparasite)	s	, k.	, -6		J	,	,
Viscum ovalifolium	Ep, Pa	pe	mxf	3	ja-mr	my-jl	ja-dc
Wall. ex DC.	s	•			3		•
BALANOPHORACEAE							
Balanophora latisepala	Pa, h	pd	mxf	2	sp-ja	?	leafles
Tiegh.) Lec.		•					
EUPHORBIACEAE						•	
Actephila excelsa	1	pe	mxf	3	jn-ag	?	ja-dc
(Dalz.) MA. var. excelsa		-					
Antidesma acidum Retz.	1	pd	bb/df	3	my-jn	sp-nv	my-ja
Antidesma montanum Bl.	t (l)	pe	mxf	3	ap-my	ag-sp	ja-dc
Antidesma velutinosum Bl.	l (s)	pe	mxf	3	ap-my	ag-sp	ja-dc
Antidesma velutinum Tul.	1	pe	mxf	3	ap-my	ag-sp	ja-dc
Aporusa villosa (Lindl.) Baill.	1	pd	bb/df, mxf	3	ja-mr	mr-my	ap-fb
Baccaurea ramiflora Lour.	t	pe	mxf	3	fb-mr	my-jl	ja-dc
Bailospermum montanum	s (h)	pe	bb/df	3	ja-dc	ja-dc	ja-dc
(Willd.) MA.	s (11)	pc	bordi	,	ja-uc	ja-uc	ja-uc
Bischofia javanica Bl.	t	pd	bb/df	2	fb-mr	oc-dc	mr-fb
Breynia angustifolia Hk. f.	1	pde	bb/df	3	ap-jn	jn-ag	ja-dc
Bridelia stipularis (L.) Bl.	wc	pd _.	bb/df	3	sp-nv	ja-mr	my-ap
Chaetocarpus castanocarpus	t	pe	mxf	2	fb-ap	ap-my	ja-dc
Roxb.) Thw.	-	r.		_	-r	-r <i>j</i>	J5

	TT.L:	Season-	II-bia-a	Abun-	Phenology			
Species	Habit	ality	Habitat	dance	fl	fr	If	
Claoxylon indicum (Reinw. ex Bl.) Hassk.	t	pe	da, sg	2	my-jn	ag-sp	ja-dc	
Cleidion spiciflorum (Burm. f.) Merr.	t	pe	mxf	3	ja-fb	mr-my	ja-dc	
Cleistanthus myrianthus (Hassk.) Kurz	t	pe	mxf	3	mr-ap	?	ja-dc	
Croton delpyi Gagnep.	t	pd	bb/df, mxf	3	fb-ap	ap-jn	ap-mr	
Croton oblongifolius Roxb.	t	pd	bb/df	3	dc-mr	mr-ap	my-fb	
Croton robustus Kurz	t	pd	bb/df	3	dc-fb	ap-my	my-ap	
Dalechampia sp.	v	pe	da, sg, bb/di	f 2	sp-oc	dc-ja	ja-dc	
Euphorbia antiquorum L.	1	pd	da, sp, bb/di (Ls)	f 2	oc-nv	ap-my	my-fb	
Euphorbia hirta L. (naturalized)	h	a	da, sg	4	ja-dc	ja-dc	ja-dc	
Euphorbia thymifolia L.	h	pe	da, sg	3	ja-dc	ja-dc	ja-dc	
Excoecaria oppositifolia Griff.	t	pe	mxf	2	?	ag-sp	ja-dc	
Glochidion rubrum Bl.	t	pe	da, sg, bb/di	f 3	ja-ap	mr-jn	ja-dc	
Homonoia riparia Lour.	s	pe	streams in mxf (rheoph	4 nyte)	fb-ap	jn-ag	ja-dc	
Jatropha curcas L. (cultivated)	s, l	pe	da, sg	3	ja-dc	ja-dc	ja-dc	
Macaranga denticulata (Bl.) MA.	. t	pe	da, sg	3	mr-ag	jl-oc	ja-dc	
Macaranga gigantea (Rchb. f. & Zoll.) MA.	t	pe	da, sg	3	mr-my	jn-ag	ja-dc	
Mallotus cuneatus Ridl.	1	pe	mxf	3	ap-my	jl-ag	ja-dc	
Mallotus khasianus Hk. f.	t (l)	pe	mxf	3	oc-nv	ja-fb	ja-dc	
Mallotus peltatus (Geisel.) MA.	t (1)	pe	mxf	3	ap-my	jl-ag	ja-dc	
Phyllanthus emblica L.	t (l)	pd	bb/df, mxf	3	fb-mr	sp-fb	ap-fb	
Phyllanthus mirabilis MA.	l (h)	pd	bb/df (Ls)	2	nv?	?	my-dc	
Phyllanthus ridleyanus A.S.	wc	pe	mxf	2	ja-fb	?	ja-dc	

Species	Habit	Season-	Habitat	Abun-	I	Phenology	
opens .	Habit	ality	Havitat	dance	fl fl	fr	If
Ptychopyxis plagiocarpa A.S.	t	pe	mxf	2	?	ap-my	ja-dc
Sauropus aff. androgynus (L.) Merr.	1	pe	da, sg	2	jn-ag	jl-sp	ja-dc
Sauropus sp.	1	pe	mxf	2	ap-my	?	ja-dc
Securinega virosa (Roxb. ex Willd.) Baill.	l (s)	pd	streams in da, sg	4	ap-jn	ap-ja	my-fb
Trewia nudiflora L.	t	pd	streams in bb/df	3	ja-fb	jn-jl	mr-de
ULMACEAE							
Celtis timorensis Span.	t	pe	da, sg, mxf	3	ja-fb	mr-ap	ja-dc
MORACEAE Artocarpus lakoocha Roxb.	t	pd	da, sg	3	fb-ap	dc-mr	fb-dc
Artocarpus lanceolata Trec.	t	pe	mxf	3	sp-oc	my-jn	ja-dc
Broussonetia kurzii (Hk. f.) Corn.	wc (s)	pd	da, sg	3	ja-mr	mr-ap	my-do
Broussonetia papyrifera (L.) Vent.	t (l)	pde	da, sg	3	mr-ap	jn-jl	ja-dc
Ficus fistulosa Reinw. ex Bl. var. fistulosa	t	pde	da, sg, bb/df	3	ja-dc	ja-dc	ja-dc
Ficus heterophylla L. f. var. heterophylla	wc	pe	wet da, sg	3	my-sp	jn-oc	ja-dc
Ficus hispida L. f. var. hispida	t (1)	pde	da, sg	3	ja-dc	ja-dc	ja-dc
Ficus microcarpa L. f. var. microcarpa forma microcarpa	t	pe	mxf	3	fb-jn	mr-jl	ja-dc
Ficus rumphii Bl.	t	pd	da, sg	3	mr-my	ap-jn	ap-dc
Ficus semicordata BH. ex J.E. Sm. var. semicordata	t (1)	pd-e	da, sg	3	ja-dc	ja-dc	ap-fb (mr)
Ficus superba (Miq.) Miq. var. japonica Miq.	t	pd	streams in mxf	3	sp-oc	oc-nv	my-do
Ficus sp.	wc	pe	mxf	3	my-jl	jn-ag	ja-dc
Ficus sp.	wc	pe	streams in mxf	3	dc-fb	ja-mr	ja-dc

		eason-	II-ki	Abun-	P	nenology	
Species	Habit	ality	Habitat	dance	fl	fr	If
Maclura amboinensis Bl. var. amboinensis	wc	pe	da, sg, mxf	3	dc-ja	mr-ap	ja-dc
Streblus taxoides (Heyex Roth) Kurz	1	pe	mxf	4	ос-ја	mr-my	ja-dc
URTICACEAE Boehmeria clidemioides Miq. var. clidemioides	s, scandent	pe	bb/df, mxf	3	sp-oc	oc-nv	ja-dc
Boehmeria hamiltoniana Wedd.	wc	pd	mxf (Ls)	2	dc-ja	fb-mr	my-mr
Boehmeria platyphylla D. Don	h, s	pe	da, sg, mxf	3	ag-oc	sp-nv	ja-dc
Boehmeria zollingeriana Wedd.	t (1)	ре	da, sg, mxf	3	sp-nv	nv-dc	ja-dc
Debregeasia longifolia (Burm. f.) Wedd.	l (s)	ре	da, sg	3	ag-oc	oc-dc	ja-dc
Debregeasia squamata King ex Hk. f. forma squamata	l (s)	pe	moist places in da, sg	2	oc-nv	ja-fb	ja-dc
Dendrocnide sinuata (Bl.) Chew	t	ре	mxf	2	sp-oc	nv-dc	ja-dc
Distemon indica Wedd.	h	а-р	bb/df	3	jn-ag	ag-oc	ja-dc
Elatostema integrifolium (D. Don) Wedd.	h	pe	mxf	3	mr-my	my-jl	ja-dc
Elatostema lineolatum Wight var. majus Wedd.	Ep, h	pe	da, sg, mxf	3	jl-sp	ag-oc	ja-dc
Laportea interrupta (L.) Chew	h	a	da, sg	3	jn-nv	jl-dc	my-dc
Pellionia bulbifera (Kurz) Hk. f. var. bulbifera	h	pe	mxf	3	sp-oc	oc-nv	ja-dc
Pellionia latifolia (Bl.) Boerl.	h	pe	mxf	3	jl-sp	ag-oc	ja-dc
Pellionia repens (Lour.) Merr.	h	pe	mxf	3	jn-ag	jl-sp	ja-dc
Pilea aff. wightii Wedd.	h	pd	mxf (Ls)	3	jn-ag	jl-sp	my-nv
Poikilospermum lanceolatum (Trec.) Merr.	wc	pe	mxf	3	mr-ap	?	ja-dc
Pouzolzia zeylanica (L.) Benn. FAGACEAE	h	pd	da, sg	3	sp-nv	oc-dc	my-ja
Castanopsis argyrophylla King ex Hk. f.	t	pe	mxf	2	mr-my	jl-sp	ja-dc

Species	Habit	Season-	Season- Habitat	Abun-	Phenology		
		ality	riaultat	dance	fl	fr	If
SALICACEAE Salix tetrasperma Roxb.	t	pd	streams in bb/df, mxf	3	nv-dc	dc-ja	dc-nv
MONOCOTS BUTOMACEAE Tenagocharis latifolia (D. Don) Buch.	h	a .	open wet places	2	oc-nv	nv-dc	my-dc
COMMELINACEAE Commelina diffusa Burm. f.	h	pe	da, sg	4	my-dc	sp-fb	ja-dc
Commelina paludosa Bl.	h	pe	bb/df, mxf	3	sp-nv	nv-ja	·ja-dc
Pollia hasskarlii R. Rao	h	pe	mxf	3	my-jl	ag-nv	ja-dc
ZINGIBERACEAE Alpinia malaccensis (Burm. f.) Rosc.	h	pe	da, sg	3	mr-my	ag-oc	ja-dc
Amomum testaceum Ridl.	h	pe	mxf	3	ap-my	ag-sp	ja-dc
Amomum uliginosum Koen.	h	pe	mxf	3	ap-my	ag-sp	ja-dc
Boesenbergia longipes (King & Prain) Schltr.	h	pd	mxf (Ls)	3	jl-sp	sp-nv	my-nv
Boesenbergia rotunda (L.) Mansf.	h	pd	bb/df	3	jn-ag	ag-oc	my-nv
Caulokaempferia saxicola K. Lar.	h	pd	mxf (Ls)	3	jl-sp	ag-oc	my-nv
Costus speciosus (Koeh.) J.E. Sm.	h	pd	bb/df, mxf	3	ag-sp	oc-dc	my-do
Curcuma petiolata Roxb.	h	pd	bb/df	3	jn-jl	ag-sp	my-nv
Curcuma roscoeana Wall.	h	pd	bb/df	3	jn-ag	ag-oc	my-nv
Curcuma sp.	h	pd	bb/df	3	jn-oc	sp-nv	my-do
Etlingera littoralis (Kon.) Gise.	h	pe	mxf	3	mr-jn	jl-sp	ja-dc
Globba aff. cernua Bak.	h	pd	mxf (Ls)	3	jl-sp	sp-oc	my-n
Globba kerrii Craib	h	pd	bb/df, mxf	3	jn-sp	sp-nv	my-do
Globba aff. multiflora Wall, ex Bak,	h	pd	mxf (Ls)	3	jl-sp	sp-oc	my-do
Globba aff. obscura K. Lar.	h	pd	mxf (Ls)	3	jn-ag	sp-oc	my-de

Species	Season- Habit I	Habitat	Abun-	Phenology			
	1 Lavit	ality	паннан	dance	fl	fr	<u>If</u>
Globba substrigosa King ex Bak. (G. aphanantha K. Lar.)	h	pd	mxf (Ls)	3	jn-ag	sp-oc	my-dc
Kaempferia elegans Wall.	h	pd	bb/df	3	jn-ag	sp-oc	my-dc
Zingiber smilesianum Craib	h	pd	bb/df	3	ag-oc	nv-ja	my-ja
MARANTACEAE Donax cannaeformis (G. Forst.) K. Sch.	h	pe	mxf	4	mr-my	jl-ag	ja-dc
Halopegia brachystachys Craib	h	pe	bb/df, mxf	3	ag-sp	oc-nv	ja-dc
LILIACEAE Peliosanthes teta Andr. ssp. humilis (Andr.) Jess.	h	pe-d	bb/df, mxf	3	ap-my	jl-sp	my-mr (ap)
AGAVACEAE Dracaena angustifolia Roxb.	1 (h)	pe	mxf	3	fb-mr	oc-ja	ja-dc
AMARYLLIDACEAE Crinum wattii Baker	h	pd	bb/df	3	ap-my	?	ap-nv
SMILACACEAE Smilax perfoliata Lour.	v	pe	mxf	3	sp-mr	jl-ja	ja-dc
Smilax sp.	v	pe	mxf	3	?	?	ja-dc
ARACEAE Aglaonema simplex Bl.	h	pe	mxf	3	my-jn	oc-nv	ja-dc
Alocasia alba Schott	h	pe	mxf	3	jn-sp	?	ja-dc
Amorphophallus aff. macrorhizus Craib	h	pd	bb/df	2	fb-mr	my-jl	my-nv
Amorphophallus maxwellii Hett. (Blumea 39, 1 & 2 (1994), 263)	h	pd	bb/df	2	ap-jn	?	my-nv
Amorphophallus muelleri Bl.	h	pd	bb/df	3	ap-jn	dc-ja	my-nv
Cryptocoryne retrospiralis (Roxb.) Kunth	h	pe	streams in mxf	3	dc-ja	?	ja-dc
Epipremnum giganteum (Roxb.) Schott	v (cree	pe per)	mxf	3	jl-ag	ja-mr	ja-dc
Homalomena aff. occulta (Lour.) Schott	h	pe	mxf	3	my-ag	jl-oc	ja-dc

Species	Season-			Abun-	Phenology		
	Habit	ality	Habitat c	dance	fl	fr	I f
Lasia spinosa (L.) Thw.	h	pe	streams in mxf	3	fb-ap	my-jl	ja-dc
Pothos cathcartii Schott	v (cree	pe per)	mxf	3	fb-ap	sp-oc	ja-dc
Remusatia pumila (G. Don) H. Li & A. Hay	h	pd-e	often Ep; bb/df, mxf	2	jn-jl	?	ja-dc
Remusatia vivipara (Lodd.) Schott	h	pd	mxf	2	jn-jl	ag-sp	my-nv
Rhaphidophora glauca (Wall.) Schott	v (cree	pe per)	mxf	3	oc-dc	ap-jn	ja-dc
Typhonium tentaculatum Hett.	h	pd	bb/df	2	jn-jl	?	my-n
Typhonium trilobatum (L.) Schott	h	pe	da, sg	3	ag-oc	jl-sp	ja-dc
DIOSCOREACEAE Dioscorea alata L.	v	pd	bb/df	3	oc-nv	ja-fb	my-ja
Dioscorea arachidna Prain & Burk. var. arachidna	v	pd	bb/df	3	sp-oc	dc-ja	my-ja
Dioscorea bulbifera L.	v	pd	da, sg, bb/d	f 3	sp-nv	ja-fb	my-ja
Dioscorea pentaphylla L.	v	pd	bb/df	3	sp-nv	ja-fb	my-ja
PALMAE Arenga wightii Griff.	t	pe	mxf	3	mr-ap	ap-jn	ja-dc
Calamus sp.	wc	pe	moist da, sg	g 3	mr-ap	fb-ap	ja-dc
Caryota mitis Lour.	t (l)	pe	mxf	2	ja-dc	ja-dc	ja-dc
Salacca? conferta Griff.	s	pe	mxf	2	?	?	ja-dc
Wallichia caryotoides Roxb.	t (1)	pe	mxf	2	?	?	ja-do
PANDANACEAE Pandanus pinniformis Holtt. & St. John	1	pe	bb/df	3	?	mr-jn	ja-do
Pandanus sp.	1	ре	mxf	2	?	ap-ag	ja-do
HYPOXIDACEAE Curculigo capitulata (Lour.) O.K.	. h	pe	bb/df, mxf	3	ap-jn	sp-nv	ja-do

Species	Season- Habit		Habitat	Abun-	1	Phenology	
-r	ality	- I avitat	dance	fl .	fr	If	
Molineria latifolia (Dry. ex W.T. Ait.) Herb. ex Kurz	h	pe	mxf	3	my-jl	jl-sp	ja-dc
TACCACEAE Tacca chantrieri Andre	h	pe	mxf	3	jn-oc	sp-fb	ja-dc
ORCHIDACEAE Ascocentrum curvifolium (Lindl.) Schltr.	Ep, h	pe	mxf	3	mr-ap	?	ja-dc
Brachcorythis helferi (Rchb. f.) Summ.	G, h	pd	bb/df	2	jn-jl	?	ту-ос
Bulbophyllum cupreum Lindl.	Ep, h	pe	mxf	2	dc-ja	?	ja-dc
Calanthe rosea (Lindl.) Bth.	h	pd	bb/df (Ls)	2	ja-fb	mr-ap	my-nv
Cheirostylis yunnanensis Rol.	Ep, h	pe	mxf	2	ja-fb	?	ja-dc
Cleisostoma complilcatum (Seid.) Garay	Ep, h	pe	bb/df	2	jn-jl	fr?	ja-dc
Coelogyne trinervis Lindl.	Ep, h	pe	mxf	3	sp-oc	dc-fb	ja-dc
Corymborkis veratrifolia (Reinw.) Bl.	G, h	ре	mxf	2	jl-ag	?	ja-dc
Cymbidium bicolor Lindl.	Ep, h	pe	mxf	2	тг-ар	jn-ag	ja-dc
Dendrobium aphyllum (Roxb.) Fischer	Ep, h	ре	mxf	2	mr-ap	jn-ag	ja-dc
Dendrobium fimbriatum Hk.	Ep, h	pe	mxf	2	mr-ap	jn-ag	ja-dc
Dendrobium lindleyi Steud.	Ep, h	pe	mxf	2	mr-ap	jn-ag	a-dc
Dendrobium moschatum (BH.) Sw.	Ep, h	ре	mxf	2	jn-jl	?	ja-dc
Eria pubescens Wight	Ep, h	pe	mxf	2	ja-fb	jn-jl	ja-dc
Geodorum diversiflorum (Lam.) Schltr.	G, h	pd	bb/df	2	jn-jl	sp-oc	my-oc
Habenaria thailandica Seid.	G, h	pd	bb/df	2	jn-ag	?	ту-ос
Liparis viridiflora (Bl.) (Lindl.)	Ep, h	pe	bb/df, mxf	2	jl-ag	dc-fb	ja-dc
Nervilia aragoana Gaud.	G, h	pd	bb/df	2	mr-ap	jn-jl	my-oc

Species	Season- Habit	Habitat	Abun-	1	Phenology		
	- I I I I I I I I I I I I I I I I I I I	ality	naultai	dance	fl	fr	If
Nervilia calcicola Kerr	G, h	pd	bb/df	2	my-jn	jl-ag	jl-oc
Nervilia plicata (Andr.) Schltr.	G, h	pd	bb/df	2	my-jn	jl-ag	jl-oc
Oberonia iridifolia (Roxb.) Lindl.	Ep, h	pe	mxf	2	sp-oc	?	ja-dc
Peristylus constrictus (Lindl.) Lindl.	G, h	pd	bb/df	3	jn-jl	ag-sp	ту-ос
Phalaenopsis cornu-cervi (Breda) Bl. & Rchb. f.	Ep, h	pd	mxf	2	fb-mr	?	ja-dc
Vanda teres Lindl.	Ep, h	pe	mxf	2	fb-mr	?	ja-dc
GRAMINEAE Centosteca lappacea (L.) Desv.	h	pe	da, sg, mxf	3	dc-fb	ja-mr	ja-dc
Cyrtococcum accrescens (Trin.) Stapf	h	pe	da, sg	3	ja-dc	ja-dc	ja-dc
Cyrtococcum oxyphyllum (Steud.) Stapf	h	pe	da, sg, mxf	3	ja-dc	ja- d c	ja-dc
Eleusine indica (L.) Gaertn.	h	a-p	da,sg	4	ja-dc	ja-dc	ja-dc
Eragrostis tenella (L.) P. Beauv. ex Roem. & Schult. var. tenella	h	pe	da, sg	3	my-oc	jn-nv	ja-dc
Eragrostis unioloides (Retz.) Nees ex Steud.	h	pe	da, sg	3	ag-dc	sp-ja	ja-dc
Microstegium vagans (Nees ex Steud.) A. Camus	h	pd	da, sg, bb/df	4	nv-ja	dc-fb	my-fb
Neyraudia reynaudiana (Kunth) Keng ex Hitch.	h	pe	moist da, sg	4	nv-fb	dc-mr	ja-dc
Oplismenus compositus (L.) P. Beauv.	h	pd	da, sg, bb/df	3	oc-ja	nv-fb	my-fb
Ottochloa nodosa (Kunth) Dandy	h	pe	bb/df	3	jl-oc	ag-nv	ja-dc
Panicum sarmentosum Retz.	h	pe	streams in da, sg	3	oc-ja	nv-fb	ja-dc
Paspalum conjugatum Berg.	h	pe	da, sg	3	ap-oc	my-nv	ja-dc
Saccharum arundinaceum Retz.	h	pe	da, sg	4	nv-fb	dc-mr	ja-dc

Species	Season-		Abun-	Phenology			
	Habit	ality Habitat	Habitat	dance	ก	fr	If
Setaria palmifolia (Koen.) Stapf var. palmifolia	h	pe	da, sg, bb/df	3	ag-oc	sp-nv	ja-dc
Urochloa panicoides P. Beauv. var. panicoides	h	ре	da, sg	3	jl-nv	ag-dc	ja-dc
GRAMINEAE (BAMBUSOIDEAE) Gigantochloa apus (Schult.) Kurz	s (h)	pe	mxf	4	ag-oc	oc-dc	ja-dc
Gigatochloa nigro-ciliata (Buese) Kurz	s (h)	pd	da, sg, bb/df	3	fb-ap	my-jn	my-ja
GYMNOSPERMS							
GNETACEAE Gnetum latifolium Bl. var. funiculare (Bl.) Mgf.	wc	pe	mxf	3	ap-my	jl-sp	ja-dc
FERN ALLIES & FERNS							
SELAGINELLACEAE Selaginella delicatula (Desv.) Alst.	h	a	bb/df (Ls)	3	ag-oc	sp-nv	jn-nv
Selaginella willdenowii (Desv. ex Poir.) Bak.	v (h)		da in mxf	3	jl-sp	ag-oc	ja-dc
Selaginella sp.	ħ	a	mxf (Ls)	3	sp-oc	oc-nv	jn-nv
EQUISETACEAE Equisetum debile Roxb. ex Vauch.	h	pe	streams in mxf	2	nv-dc	nv-dc	ja-dc
SCHIZAEACEAE Lygodium flexuosum (L.) Sw.	v	pd	da, sg	3	ag-oc	sp-nv	jn-dc
Lygodium salicifolium Presl	v	pe	mxf	2 -	ap-ag	my-sp	ja-dc
DAVALLIACEAE <i>Davallia denticulata</i> (Burm. f.) Mett. ex Kuhn	Ep, l	ı pd	mxf	2	ag-oc	ag-oc	jn-dc
OLEANDRACEAE Nephrolepis cordifolia (L.) Presl	Ep, i	n pd	bb/df	2	sp-oc	sp-oc	jn-oc
Nephrolepis falcata (Cav.) C. Chr.	Ep, l	n pd	mxf	2	ag-oc	ag-oc	jn-oc
PARKERIACEAE Adiantum philippense L.	G, h	pd	mxf (often on L	3 s)	jl-sp	. jl-sp	my-o

Species	Season- Habit		Habitat	Abun-	Phenology		
	паоц	ality	ality	dance	fl	fr	If
ryopteris ludens all. ex Hk.) J. Sm.	h	pđ	mxf (Ls)	2	jl-sp	jl-sp	my-on
ychium siliculosum esv.) C. Chr	G, h	pe	da-sg	2	nv-fb	nv-fb	ja-dc
yrogramma calomelanos) Link	G, h	pe	da-sg	2	nv-fb	nv-fb	ja-dc
ITARIACEAE taria elongata Sw.	Ep, h	pe	da, sg, mxf	2	jl-oc	jl-oc	ja-dc
ERIDACEAE eris linearis Poir.	G, h	pe	mxf	2	ag-nv	ag-nv	ja-dc
ris venusta O.K.	G, h	ре	da, sg, mxf	3	ag-nv	ag-nv	ja-dc
eris vittata L.	G, h	pe	da, sg	3	jl-fb	jl-fb	ja-dc
PLENIACEAE plenium nidus L. var. nidus	Ep, h	pe	mxf	2	jn-oc	jn-oc	ja-dc
OMARIOPSIDACEAE lbitis appendiculata 'illd.) K. Iwats.	h	pe	mxf (Ls)	2	sp-nv	sp-nv	ja-dc
CYOPTERIDACEAE enitis subobscura (Christ) Holtt.	h	pd	mxf (Ls)	3	jn-sp	jn-sp	my-oc
clopitis crenata (Fee) C. Chr.	G, h	pe	mxf	3	jn-sp	jn-sp	ja-dc
ecocnemia irregularis (Presl)	G, h	pe	mxf	3	jl-sp	jl-sp	ja-dc
eridrys cnemidaria (Christ) Chr. & Ching	G, h	pe	mxf	3	mr-jn	mr-jn	ja-dc
ctaria herpetocaulos Holtt.	G, h	pe	mxf	3	jl-nv	jl-nv	ja-dc
ctaria impressa (Fee) Holtt.	G, h	pe	mxf	3	jl-nv	jl-nv	ja-dc
IELYPTERIDACEAE uphineuron terminans k.) Holtt.	G, h	pe	mxf	3	jl-oc	jl-oc	ja-dc
elypteris heterocarpa (Bl.) Mort	. G, h	pe	mxf	3	nv-fb	nv-fb	ja-dc
elypteris lebeufii (Bak.) Pan.	G, h	pe	mxf	3	jl-oc	jl-oc	ja-dc

Species	Season- Habit Ality Hab		Abun-	Phenology			
		ality	Habitat	dance	fl	fr	If
Thelypteris nudata (Roxb.) Mort.	G, h	pe	streams in mxf	3	jl-sp	jl-sp	ja-dc
ATHYRIACEAE Deparia subfluvialis (Haya.) M. Kato	G, h	pe	streams in mxf	3	oc-fb	oc-fb	ja-dc
Diplazium esculentum (Retz.) Sw.	G, h	pe	streams in da, sg, bb/df	4	oc-fb	oc-fb	ja-dc
POLYPODIACEAE Drymoglossum piloselloides (L.) Presl	Ep, h	pe	da, sg, mxf	3	jn-oc	jn-oc	ja-dc
Drynaria quercifolia (L.) J. Sm.	Ep, h	pd	mxf	3	jl-sp	jl-sp	ja-dc
Drynaria rigidula (Sw.) Bedd.	Ep, h	pd	bb/df	3	ag-nv	ag-nv	my-nv
Leptochilis axillaris (Cav.) Kaulf.	Ep, h	pe	mxf	3	jl-sp	jl-sp	ja-dc
Microsorum punctatum (L.) Copel.	Ep, h	pe	da, sg	3	mr-jn	mr-jn	ja-dc
Phymatosorus lucidus (Roxb.) P.S.	Ep, h	pe	da, sg	3	jl-oc	jl-oc	ja-dc
Platycerium wallichii Hk.	Ep, h	pd	da, sg, bb/df	3	ap-sp	ap-sp	mr-oc
Pyrrosia stigmosa (Sw.) Ching	Ep, h	pe	da, sg, mxf	3	jl-nv	jl-nv	ja-dc

Summary of results:

	Families	sp., ssp., var.
ANGIOSPERMS Dicots Monocots	90 15	422 97
GYMNOSPERMS	1	1
FERN ALLIES & FERNS	14	39
Total	118	559

with one new record for the flora of Thailand:

Neothorelia laotica Gagnep. (Capparaceae)

and two new species:

Amorphophallus maxwellii Hett. (Araceae) Typhonium tentaculatum Hett. (Araceae)