

**Bangor University**

## **DOCTOR OF PHILOSOPHY**

**The natural vegetation of the Sabah and natural regeneration of the Dipterocarp Forests.**

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Dacrydium Mile 5.5 Sook



(b) November 1970  
 (a) November 1967  
Dacrydium elatum Inland  
 Dry Heath Forest Mile 7.5  
 Sook (7.3(a))

Podocarpus rumphii, Selangor  
Island (5.4)



Oak/Conifer Forest (2(c))  
1700 m Crocker Range



Dacrydium gibbsiae Forest  
(3(b)) 2400 m Mount Kinabalu





Gymnostoma Forest on an ultrabasic ridge (Figure 8) Segaliud-Lokan F.R. (7.5(d))



Commercial Peat Swamp Forest, Lumat (4.2(a))



Secondary Alstonia on cleared peat swamp, Klias (4.3(b))



Strand Flora near Sipitang (5.1, 5.2) mangroves on left.



Gymnostoma nobile (7.1(a)) Kampong Usok, near Sipitang



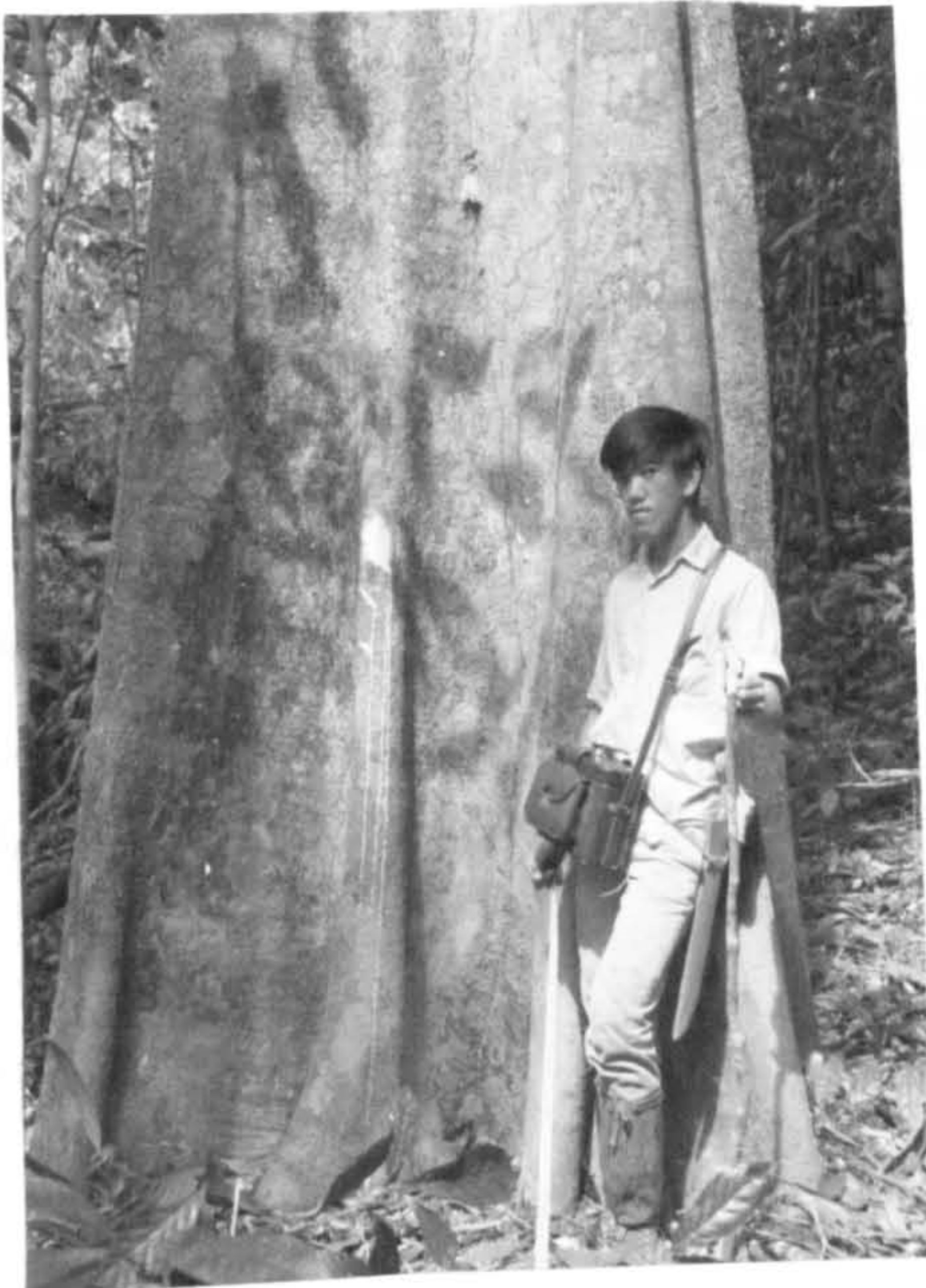
Baeckia frutescens Mile 3 Sook (7.1(b))



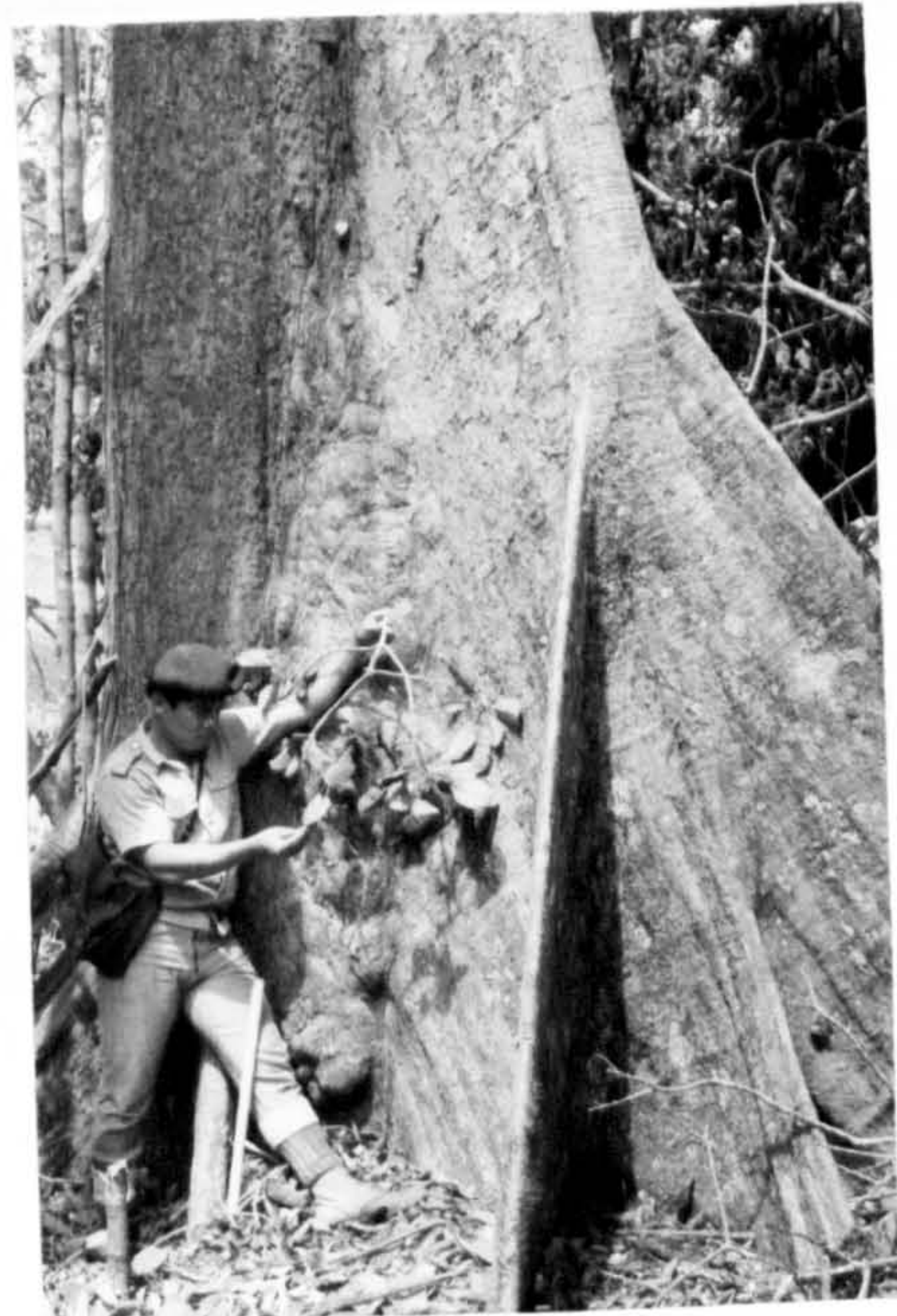
Nipa fruticans (4.1(c)) with  
Lawa Lawa Hill behind (7.5(d))



Imperata grasslands near  
Semporna (see page )



Alstonia angustifolia



Heritiera simplicifolia



Dillenia borneensis



Koordersiodendron pinnatum

Parashorea  
malaanonan at  
Kalumpang F.R.  
Type A Forest



Mixed Rubroshorea species  
at Deramakot F.R.  
Type B Forest



Shorea parvifolia and  
Dipterocarpus verrucosus  
Kalabakan F.R. Type C Forest





Dryobalanops rappa Forest  
on white sand at Mesapol  
F.R. (7.3(b))



Shifting cultivation in  
Rubroshorea/Eusideroxylon  
Type C Forest, near Lanas.

Dipterocarpus  
acutangulus and  
Heritiera borneensis  
Type D Forest  
(see Figure 24)



Parashorea malaanonan Type E Forest, Mandalom F.R.

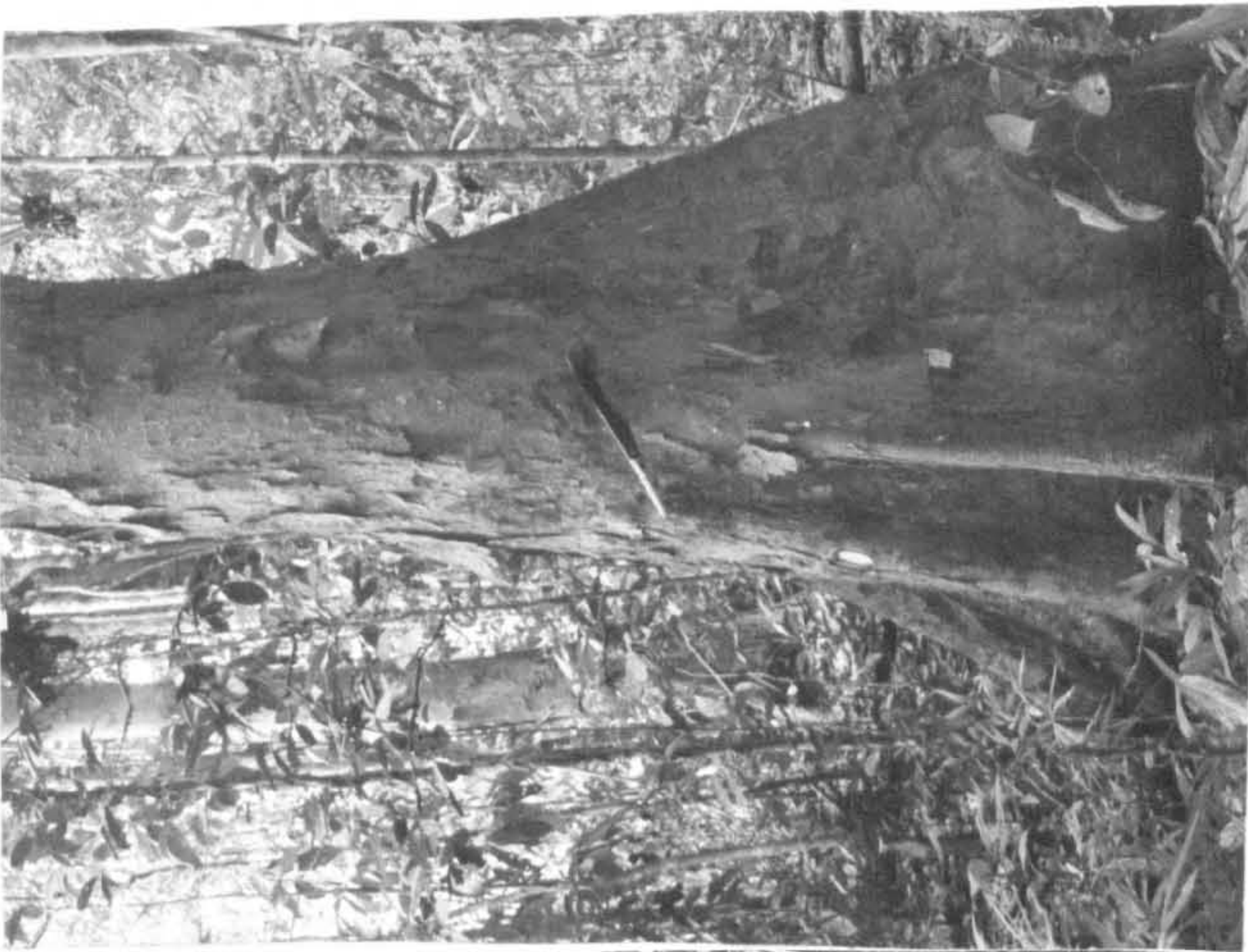
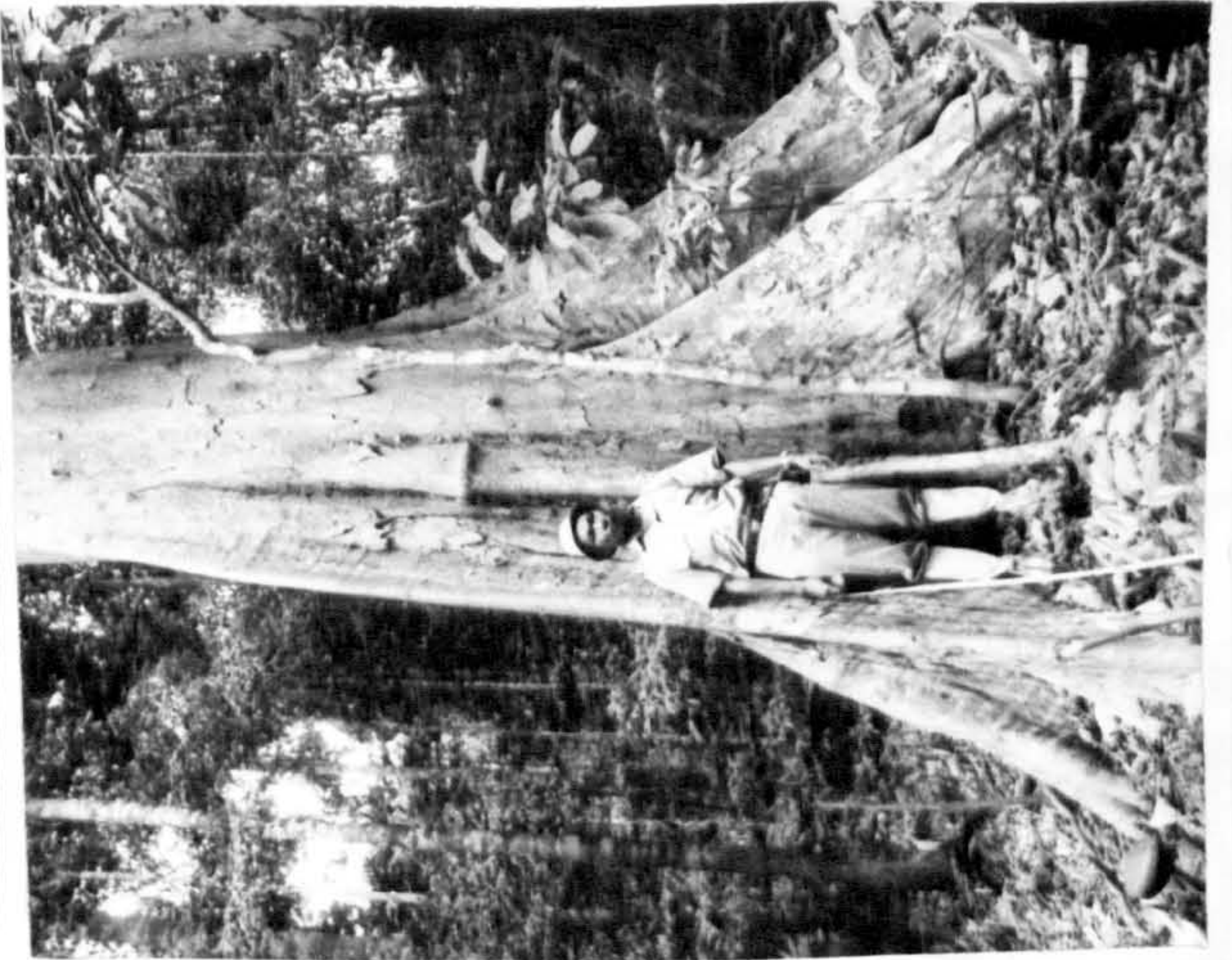




A B C D

E F G

- A Dryobalanops beccarii
- B Dr. keithii
- C Dr. lanceolata
- D Dipterocarpus appplanatus
- E D. caudiferus
- F D. grandiflorus
- G D. verrucosus







A B C D

E F G

A Parashorea smythiesii

B Shorea almon

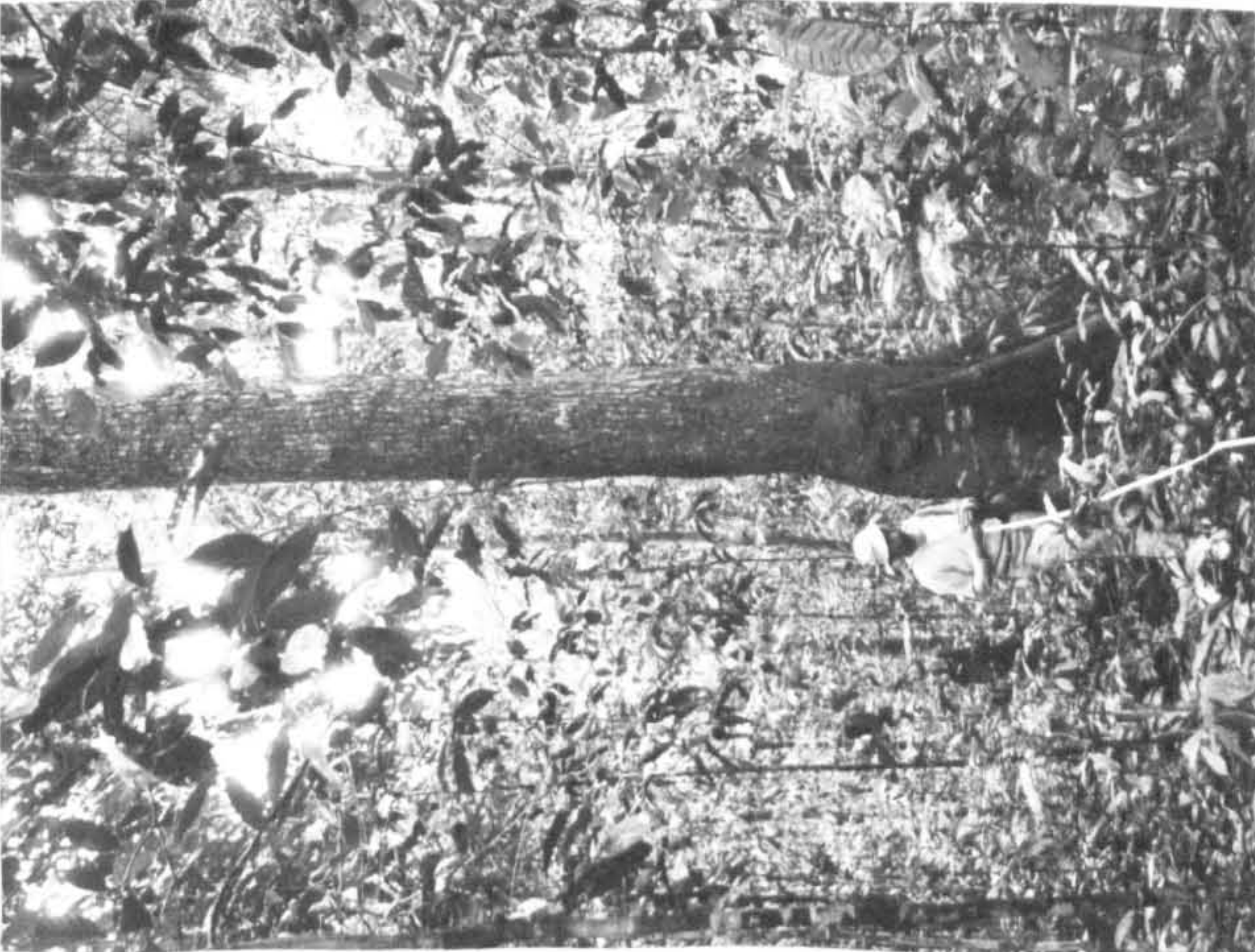
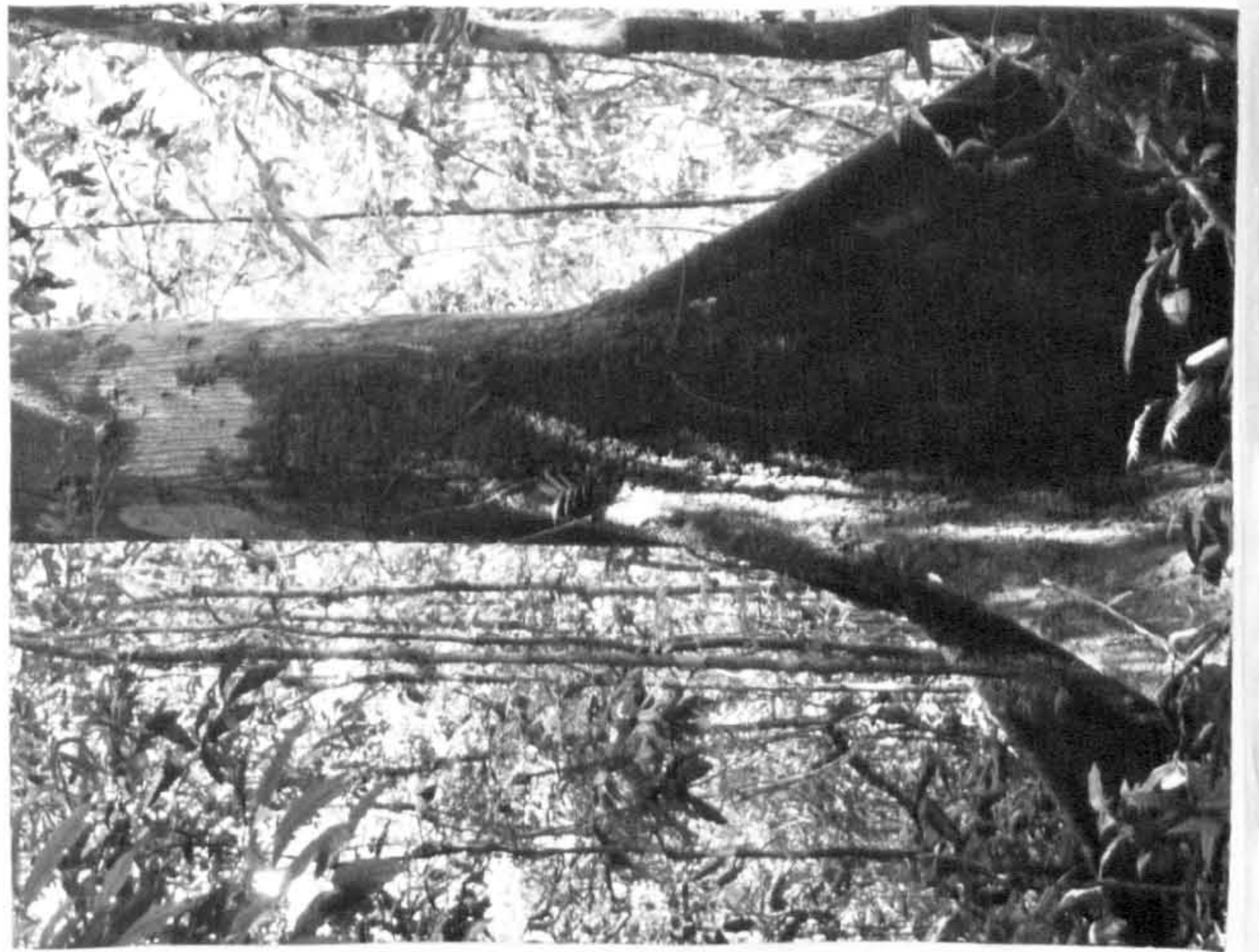
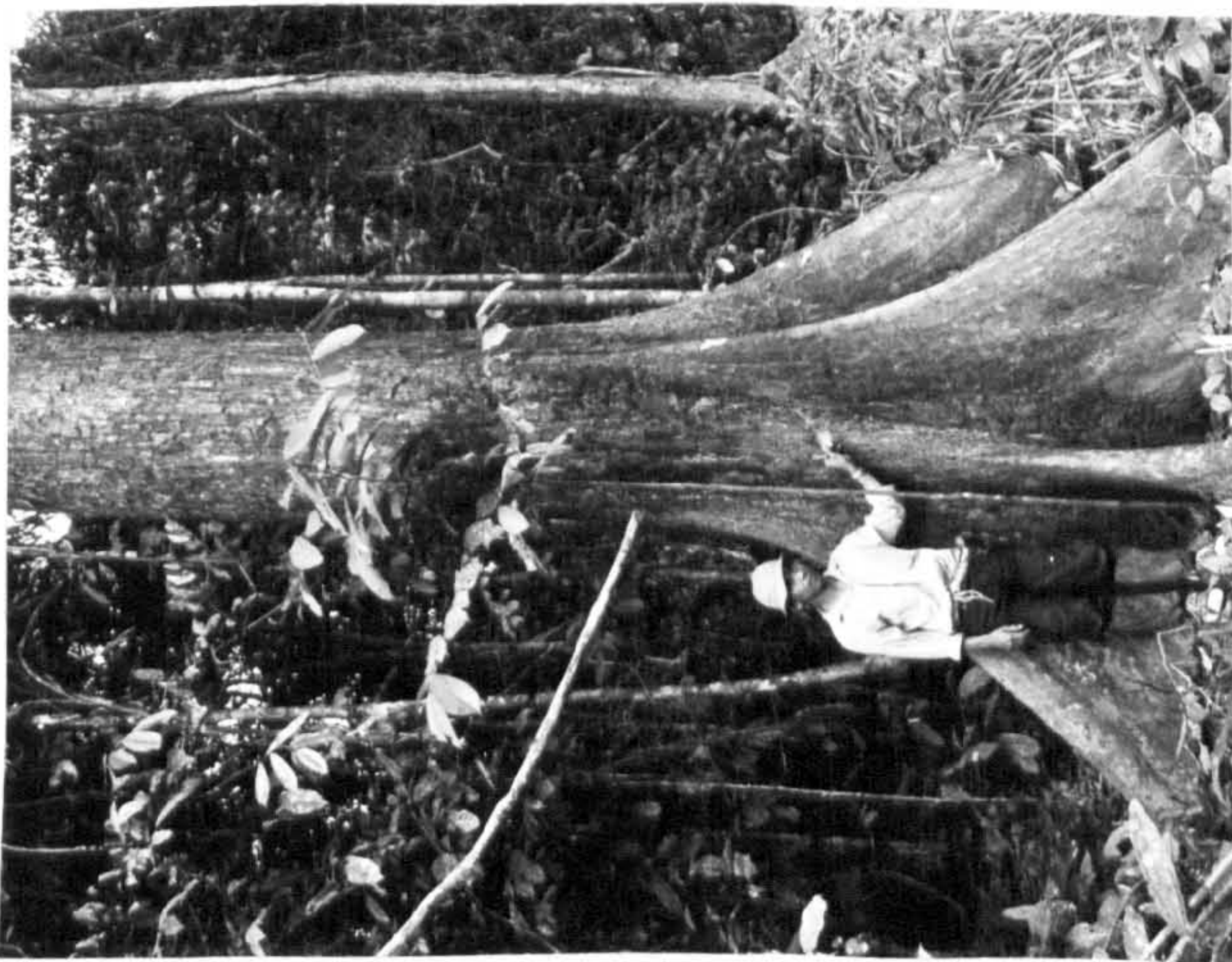
C S. argentifolia

D S. leptoclados

E S. oleosa

F S. parvifolia

G Eusideroxylon zwageri





(a) Freshly germinated seedlings (see Tables 24, 27)  
 (a) Dryobalanops aromatica  
 (b) Shorea glaucescens



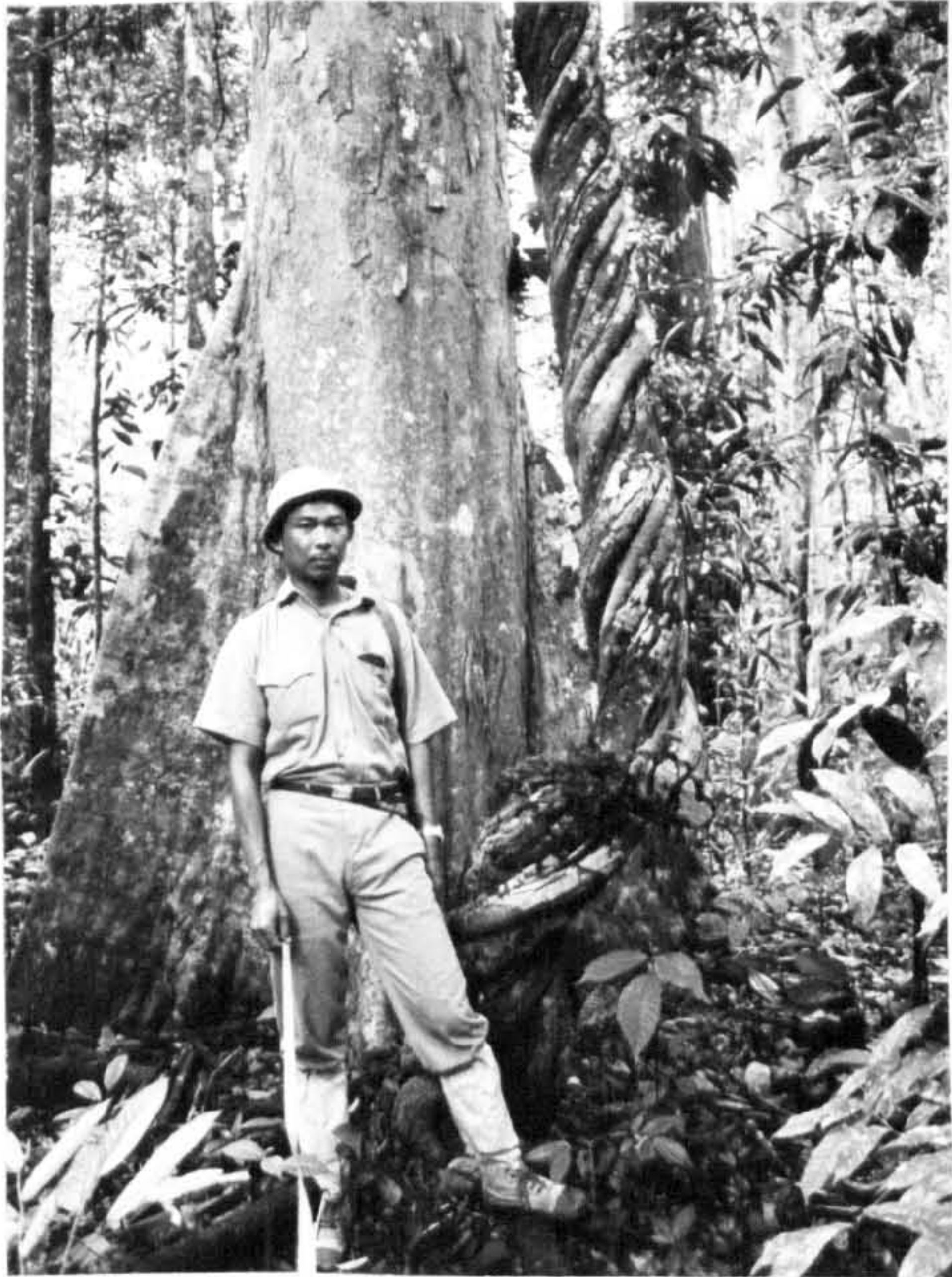
Shorea mecistopteryx (a)  
 R.P.282 Pin F.R.  
 (a) after logging  
 (b) two years later



Wildlings two years after planting R.P.276 Malua F.R. (see Tables 43, 44)



Seedlings surviving felling in shady patch R.P.242 Segaliud-Lokan F.R. (Figure 61)



Large climber in natural forest, Kalabakan F.R.



Felling into buttress with chain saw (cf Figure 57)



Erosion following logging on soft sandstone, Segaliud-Lokan F.R.



Ponding up following blocking of natural drainage, at Deramakot F.R.



Deep cut on main tractor path, Segaliud-Lokan F.R.



Large landing, Kalabakan F.R.



Coppice Parashorea tomentella, Tenegang F.R.



Parashorea malaanonan and Dryobalanops lanceolata seedlings at edge of tractor path Gunong Rara F.R.

and Glochidion sp. and Mesoneuron on adjacent tractor path.



Shorea parvifolia growing under Anthocephalus F+2, Kalabakan F.R.

Dryobalanops lanceolata seedlings on tractor path, F+15, Kalabakan F.R.



Macaranga hypoleuca F+10 at Kalabakan F.R.



Vigorous *Rubroshorea* regeneration, thinned at F+5  
near Kalabakan F.R.



*Shorea parvifolia* F+15  
in Plot 1 of R.P.273 B  
at Kalabakan F.R.



Vigorous *Rubroshorea*, mainly  
*Shorea leptoclados*, in R.P.38  
Sepilok F.R. F+c.50

Appendix 1

Basic Enumeration Data

Table 1	Segaliud-Lokan F.R.	Trees over 5ft girth 78.8 acres (32 ha)
Table 2	Segaliud-Lokan F.R.	Trees over 12ins girth 7 acres (2.8 ha.)
Table 3	Kuamut F.R.	Trees over 5ft girth (95.8 acres (39 ha.))
Table 4	Kuamut F.R.	Trees over 12 ins girth 8.6 acres (3.5 ha.)
Table 5	Kalabakan F.R. (Luasong)	Trees over 5ft girth 132.1 acres (53.5 ha.)
Table 6	Kalabakan F.R. (Luasong)	Trees over 12ins.girth 6.0 acres (2.4 ha.)



Table 1 Continued

		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Total	%
	Total Resak Group	2																2	-
	TOTAL DIPTEROCARPACEAE	155	118	113	105	68	63	46	39	16	15	7	7	3	3	0	1	759	75.9
	PERCENTAGE DIPTEROCARPACEAE of all trees.	59	58	79.5	86.1	89.5	87	95.8	92.9	88.9	100	100	87.5	75	100	100	100	75.9	
B. Non-Dipterocarpaceae																			
	(i) SINGLE SPECIES																		
	37 Eusideroxylon zwageri	20	17	10	5	1		1	1									55	5.5
	38 Sympetalandra borneensis	6	5	3	2													16	1.6
	39 Koordersiodendron pinnatum	3	2	3			1											9	0.9
	40 Planchonia valida	1	1		1	1												4	-
	41 Dracontomelum mangiferum			2	1	1												4	-
	42 Koompassia excelsa						1		2				1					4	-
	43 Octomeles sumatrana									1								1	-
	44 Anthocephalus cadamba	1			1		1											3	-
	(ii) Indeterminate Species or Species Groups.																		
	Diospyros spp.	11	7	3					1									21	2.1
	Pterospermum spp.	11	3															15	1.5
	Eugenia spp.	3	1	2														6	0.6
	Homalium spp.	4		1														5	0.5
	Artocarpus spp.	5		1		1												7	0.7
	Terminalia spp.	1			2	1												4	-
	Lophopetalum spp.	2		2														4	-
	(iii) FAMILY GROUPS																		
	Annonaceae (at least 2 species)	3	1	1														5	0.5
	Euphorbiaceae (at least 4 species)	4	2															6	0.6
	Fagaceae (at least 2 species)	3	5	1														9	0.9
	Lauraceae (at least 3 species)	9	1	2	2	1												15	1.5
	Leguminosae (at least 4 species)	2	3			1		1										7	0.7
	Malvaceae (at least 3 species)	2				1	1		1									4	
	Meliaceae (at least 2 species)	8			1					1								10	1.0
	Sapindaceae (at least 2 species)	1	2															3	
	Sterculiaceae (3 species)		2		1													3	
	Tiliaceae (mostly species of Pentace)	4	4															8	0.8
	Verbenaceae (2 species)	4																4	
	(iv) Miscellaneous (8 species)	5			1	2								1				9	0.9
	TOTAL NON-DIPTEROCARPACEAE	113	56	31	17	10	5	2	3	2	0	0	1	1	0	0	0	241	24
	PERCENTAGE NON-DIPTEROCARPACEAE of all trees	42	32	21.5	13.9	13	7.3	4.2	7.1	11.1	0	0	12.5	25	0	0	0	24.1	
	TOTAL ALL TREES MEASURED	268	174	144	122	78	68	48	42	18	15	7	8	4	3	0	1	1000	100



Appendix 1 Table 2 Systematic Subsample to 12 inches girth, Segaliud-lokan F.R. covering 7 acres.

A. DIPTEROCARPACEAE in groups			Numbers of Stems Enumerated by half foot girth classes.										Total $\geq 5'$	% $\geq 5'$	
			1/1 $\frac{1}{2}$	1 $\frac{1}{2}$ /2	2/2 $\frac{1}{2}$	2 $\frac{1}{2}$ /3	3/3 $\frac{1}{2}$	3 $\frac{1}{2}$ /4	4/4 $\frac{1}{2}$	4 $\frac{1}{2}$ /5	5/5 $\frac{1}{2}$	5 $\frac{1}{2}$ /6			6 +
Group	No. of species	GROUP NAME													
1	2	White Seraya (Parashoreas)	10	11	4	3	1		1		5	1	20	30	4.3
2	1	Seraya majau (Shorea leptoclados)	3	1		1	2		6	1	1		9	14	2.0
3	1	Kapor (Dryobalanops lanceolata)	3	1		4		1			1	1	8	9	-
4	1	Keruing (Dipterocarpus caudiferus)	9	2	1	1	1	3	1	1	1		9	19	2.7
5	7	Red Seraya (Excluding S. majau)	3	4	4	1	2	2			1		8	16	2.3
6	4	Yellow Seraya (Sh. species)		2	1		1	1		1		1	3	6	-
7	2	Selangan (Hopea spp.)	3	5	5	1							1	14	2.0
8	1	Melapi (Shorea symingtonii)				1								1	-
9	4	Selangan batu (Sh. spp.)	1		1	2							5	4	-
10	1	Resak (Vatica spp.)	1	1	1	1								4	-
TOTAL DIPTEROCARPACEAE			33	27	17	15	7	7	8	3	9	3	63	117	16.7
PERCENTAGE DIPTEROCARPACEAE of all trees			12.5	15.2	14.6	29	24	33	32	23	37.5	100	80	16.8	
B. NON DIPTEROCARPACEAE															
(i)	Common as Genera/species														
		Diospyros spp.	31	19	8	2	3	2	1		3		2	66	9.5
		Eusideroxylon zwageri	1	3	6	5	1	2	2	1	2		8	21	3.0
		Barringtonia spp.	5	5	1	3	2		1	1				18	2.6
		Xanthophyllum	1	1		2		1	1					6	-
		Pentace spp.	10	1	5	1	1	1	2		1		1	21	3.0
		Eugenia spp.	22		6	1	2	1					1	41	5.9
		Sympetalandra borneensis	3	3						1	2			7	-
Total Group (i)			73	41	26	14	9	7	7	3	8		12	180	25.9



	$1\frac{1}{2}/1\frac{1}{2}$	$1\frac{1}{2}/2$	$2/2\frac{1}{2}$	$2\frac{1}{2}/3$	$3/3\frac{1}{2}$	$3\frac{1}{2}/4$	$4/4\frac{1}{2}$	$4\frac{1}{2}/5$	$5/5\frac{1}{2}$	$5\frac{1}{2}/6$	6 +	Total/5'	%/5'
(ii) Abundant as families													
Euphorbiaceae	48	27	15	3	1	1						95	13.6
Lauraceae	14	16	11	4			1					46	6.6
Anonaceae	19	12	9	4			1	2				47	6.7
Meliaceae	22	11	4	2		1	3					43	6.2
Sapindaceae	12	10	11	2	2							37	5.3
Flacourtiaceae	12	7	2		2			1			1	24	3.4
Sapotaceae	4	4	5	2			1					16	2.3
Burseraceae	1	3	2	1	1	2		2	1			12	1.7
Sterculiaceae	1		3	1		1	3		1			9	-
Dilleniaceae	4	1	1			1						7	-
Total Group (ii)	137	91	63	19	6	6	9	5	2		1	336	48.2
(iii) Less Common													
(a) Large individuals found (9 + species)	4	3	1					1	4		3	9	-
(b) Mostly small trees	12	13	6	3	6	1	1	1				42	6.0
(c) Unidentified	5	2	3	1	1			1	1			13	1.8
Total Group (iii)	21	18	10	4	7	1	1	2	5		3	64	9.2
Total non Dipterocarpaceae	231	150	99	37	22	14	17	10	15		16	580	83.3
Total all trees	264	177	116	52	29	21	25	13	24	3	79	697	100

Group	A. DIPTEROCARPACEAE IN GROUPS		NUMBERS OF STEMS ENUMERATED BY ONE FOOT CLASSES																Total	%
	Species	Botanical Name	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
	1	<i>Parashorea tomentella</i>	19	12	12	18	16	16	11	8	9	2	1	2	1				127	11.0
	2	<i>Parashorea malaanonan</i>	3	3	2	4	3	2	2	2	2	2	1	1					27	2.3
1		Total White Seraya	22	15	14	22	19	18	13	10	11	4	2	3	1				154	13.3
2	3	<i>Shorea leptoclados</i>	20	32	32	17	20	19	20	9	10	9	8	3	2	1		1	203	17.6
3	4	<i>Dryobalanops lanceolata</i>	18	21	13	12	9	10	2	4	1	2	1	1					94	8.2
	5	<i>Dipterocarpus caudiferus</i>	17	15	13	11	13	5		2	1				1				78	6.7
	6	<i>Dipterocarpus humeratus</i>	1	2		2													5	0.4
	7	<i>Dipterocarpus acutangulus</i>							1										1	-
	8	<i>Dipterocarpus (unident)</i>	1	1															2	-
4		Total Keruing	19	18	13	13	13	5	1	2	1				1				86	7.5
	9	<i>Shorea leprosula</i>	8	7	25	12	17	9	4	2	3	1							88	7.6
	10	<i>Shorea parvifolia</i>	16	8	6	6	4	5	2										47	4.1
	11	<i>Shorea gysbertsiana</i>	13	15	14	14	6	2	3	4	2								73	6.3
	12	<i>Shorea smithiana</i>	1	5	4	3	1	1			2	1		1					19	1.6
	13	<i>Shorea pauciflora</i>		3		2			1			1	1	1	1				10	0.9
	14	<i>Shorea oleosa</i>	6	5			1												12	1.0
	15	<i>Shorea beccariana</i>	1	3	2	1	1		1	1									10	0.9
	16	<i>Shorea macroptera</i>	1	1			1				1								4	-
	17	<i>Shorea almon</i>	1	2															3	-
	18	<i>Shorea argentifolia</i>		1															1	-
	19	<i>Shorea waltonii</i>	1																1	-
5		Total Red Seraya	48	50	51	38	31	17	11	7	8	3	1	2	1				268	23.2
	20	<i>Shorea gibbosa</i>	2	2	2	1	1		1			4		1	1				15	1.3
	21	<i>Shorea hopeifolia</i>	4		1	5	2	2											14	1.2
	22	<i>Shorea acuminatissima</i>		1		1													2	-
6		Total Yellow Seraya	6	3	3	7	3	2	1			4		1	1				31	2.7
	23	<i>Hopea nervosa</i>	1																1	-
	24	<i>Hopea sangal</i>	1		2														3	-
7		Total Selangan	2		2														4	0.3
8	25	<i>Shorea symingtonii</i>		1		1	1												3	0.3
	26	<i>Shorea atrinervosa</i>	10	7	4	7	3	3	1	1			1						37	3.2
	27	<i>Shorea superba</i>	2	4	1	1	1	1				1	2						13	1.1
	28	<i>Shorea foxworthii</i>	2	3	2			1			1								9	
	29	<i>Shorea isoptera</i>		3	1	2	1			1									8	
	30	<i>Shorea guiso</i>	2			1													3	
	31	<i>Shorea seminis</i>			1	2	1												4	
	32	<i>Shorea laevis</i>					1												1	
9		Total Selangan Batu	16	17	9	13	7	5	1	3		1	3						75	6.5
		TOTAL DIPTEROCARPACEAE	151	157	137	123	103	76	49	35	31	23	15	10	6	1		1	918	79.5
		PERCENTAGE OF ALL TREES	61	74	86	93	92	89	94	92	93	96	100	100	100	50	-	100	-	79.5

Table 3 Continued

B. NON DIPTEROCARPACEAE	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	%
<b>(i) Single Species</b>																		
<i>Eusideroxylon zwageri</i> (Lauraceae)	6	6	2	1	1	2			1					1			20	1.7
<i>Saraca lanceolata</i> (Leguminosae)	2	2	2	1	1		1										9	
<i>Sympetalandra borneensis</i> (Leguminosae)	2	3	3	3		1	1										13	1.1
<i>Sindora irpicina</i> (Leguminosae)	1	1			1	1	1		1								6	
<i>Dialium indum</i> (Leguminosae)	1	1	1														3	
<i>Intsia palembanica</i> (Leguminosae)					1												1	
<i>Albizia chinensis</i> (Leguminosae)								1									1	
<i>Parkia roxburghii</i> (Leguminosae)				1													1	
<i>Pentace laxiflora</i> (Tiliaceae)	1	2	1		1												5	
<i>Brownlowia stipulata</i> (Tiliaceae)	3		2														5	
<i>Octomeles sumatrana</i> (Datiscaceae)		1			2												3	
<i>Lophopetalum javanicum</i> (Celastraceae)		1	1														2	
<i>Ochanostachys amentaceae</i> (Olacaceae)	6	1															7	
<b>Total Group (i)</b>	22	18	12	6	7	4	3	1	2					1			76	6.6
<b>(ii) Indeterminate species</b>																		
<i>Diospyros</i> spp. (Kayu malam)	2																2	
<i>Eugenia</i> spp. (Obahs)	12	1	1	1	1												16	
<i>Artocarpus</i> spp. (Terapa)	1		1	1													3	
<i>Canarium</i> spp. (Kedondong)	2		1														3	
<b>Total Group (ii)</b>	17	1	3	2	1	0	0	0	0								24	2.1
<b>(iii) Family Groups</b>																		
Lauraceae (4+ species)	7	2															9	
Fagaceae (2+ species)	5	3	2	1													11	
Sterculiaceae (5 species)	7	5				2											14	
Sapindaceae (5 species)	2	3	3														8	
Meliaceae (3+ species)	7	2						1		1							11	
Apocynaceae (2 species)	1			1													2	
<b>Total Group (iii)</b>	29	15	5	2		2	0	1	0	1							55	4.8
<b>(iv) Miscellaneous (27+ species)</b>	44	21	7	1	0	3	0	5	0	0							81	7.0
<b>Total Non-DIPTEROCARPACEAE</b>	112	55	27	11	8	9	3	7	2	1				1			236	20.4
<b>Total All Trees</b>	263	212	164	134	111	85	52	42	33	24	15	10	6	2	0	1	1154	100

A. DIPTEROCARPACEAE in groups			Numbers of Stems enumerated in half foot girth classes											
GROUP	No. of species	GROUP NAME	1' / 1½'	1½' / 2'	2' / 2½'	2½' / 3'	3' / 3½'	3½' / 4'	4' / 4½'	4½' / 5'	5' +	Total	Total / 5'	% / 5'
1	2	White seraya - (Parashorea spp.)	14	7	8	3	4	3	2	2	16	59	43	4.5
2	1	Seraya majau - (Shorea leptoclados)	7	6	7	4	2	4	3	2	15	50	35	3.6
3	1	Kapor - (Dryobalanops lanceolata)	4	5	4	-	2	-	-	-	9	24	15	1.6
4	3	Keting - (Dipterocarpus spp.)	15	12	5	3	1	1	-	-	13	50	37	3.8
5	8	Red Seraya - (Excluding S. majau)	20	14	9	8	5	1	2	7	28	94	66	6.8
6	2	Yellow Seraya - (Shorea spp.)	1	0	1	-	-	-	-	1	2	5	3	-
7	3	Selangan - (Hopea spp.)	9	2	7	5	2	1	1	-	0	27	27	2.8
8	3	Melapi - (Shorea spp.)	1	2	1	1	-	-	-	-	1	6	5	-
9	4	Selangan batu - (Shorea spp.)	7	3	2	1	4	-	-	3	6	26	20	2.1
10	2	Resak - (Vatica spp.)	2	2	-	-	3	-	-	-	-	7	7	-
TOTAL DIPTEROCARPACEAE (29 species)			80	53	44	25	23	10	8	15	90	348	258	26.8
PERCENTAGE DIPTEROCARPACEAE, of all trees			21.9	23.1	27.3	29.8	41	37	42	62.5	77	32.2		
B. NON DIPTEROCARPACEAE														
(i)	Common as Genera/species													
	Eugenia spp. (Myrtaceae) several species		11	13	8	4	1	2	3	1	5	48	43	4.5
	Diospyros spp. (Ebenaceae) several species		16	12	17	6	6	1		1	2	61	59	6.1
	Kiolodepes longifolium (Euphorbiaceae)		42	15	6							63	63	6.5
	Dillenia excelsa (Dilleniaceae)		2	4	2	1						9	9	0.9
	Castanopsis spp. (Fagaceae) one or two species		5	1	5	1	1				1	14	13	1.3
	Dehaasia incrassata (Lauraceae)		6	5	1	1		1	1		1	16	15	1.6
	Barringtonia spp. (Lecythidaceae) three species		1	6	1	5	-	3			1	17	16	1.7
	Sympetalandra borneensis (Leguminosae)		5	1	2		1					9	9	0.9
	Ochanostachys amentace (Olacaceae)		5	1	3	1	1	1	1			13	13	1.3
	Xanthophyllum spp. (Polygalaceae) one or two species		3	3	1	1	2	1				11	11	1.1
	Nephelium mutabile (Sapindaceae)		6	6	2			1			1	16	15	1.6
	Paranephelium nesidum (Sapindaceae)		10	7	6	2	1					26	26	2.7
	Brownlowia stipulata (Tiliaceae)		10	3	3	1	1			1	2	21	19	2.0
	Pentace laxiflora (Tiliaceae)		2	1	2	1	1		1	1		9	9	0.9
Total Group (i)			124	78	59	24	15	10	6	4	13	333	320	33.2

	1' / 1½'	1½' / 2'	2' / 2½'	2½' / 3'	3' / 3½'	3½' / 4'	4' / 4½'	4½' / 5'	5' +	Total	Total / 5'	% / 5'
(ii) Abundant as Families												
Anonaceae	9	11	4	1						25	25	2.6
Burseraceae	7	7	4							18	18	1.9
Euphorbiaceae	41	23	11	4	3		1	1	3	87	84	8.7
Lauraceae	10	7	3	11	2	2		1		36	36	3.7
Melastomataceae	6	4	3		1					14	14	1.4
Meliaceae	13	10	8	3	1	1	1		2	39	37	3.8
Sapotaceae	3	1	2	1	1					8	8	-
Sterculiaceae	2	1	2	2	2				2	11	9	0.9
Verbenaceae	1	1	4	2	2	1			3	14	11	1.1
Total Group ii	92	65	41	24	12	4	2	2	10	252	242	25.0
(iii) Less common and unidentified species	69	33	17	11	6	3	3	3	4	149	145	15.0
Total Non-Dipterocarpaceae	285	176	117	59	33	17	11	9	27	734	707	73.2
Total All Trees	365	229	161	84	56	27	19	24	117	1082	965	100

APPENDIX 1 TABLE 5

## SUMMARY OF TREES ENUMERATED ON 132.1 ACRES BY SPECIES AND SIZES KALABAKAN F.R.

A. Dipterocarpaceas in groups			Numbers of stems enumerated by One Foot Girth Classes																	
Group	Species	Botanical Name	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Total	%
	1	<i>Parashorea tomentella</i>	18	20	16	19	21	13	8	11	2	6	-	-	-	-	-	-	134	5.4
	2	<i>Parashorea malaanonan</i>	27	24	32	40	19	18	11	15	3	1	3	-	-	1	-	-	194	7.8
	3	<i>Parashorea smythii</i>	42	31	31	9	7	5	-	1	-	1	-	-	-	-	-	-	127	5.1
1		Total White Seraya Group	87	75	79	68	47	36	19	27	5	8	3	-	-	1	-	-	455	18.3
	4	<i>Dryobalanops keithii</i>	87	63	67	52	41	14	6	3	3	2	-	-	-	-	-	-	388	13.6
	5	<i>Dryobalanops lanceolata</i>	39	26	47	38	20	25	7	15	6	6	3	-	1	-	-	-	233	9.4
2		Total Kapur Group	126	89	114	90	61	39	13	18	9	8	3	-	1	-	-	-	571	23.0
	6	<i>Dipterocarpus caudiferus</i>	28	31	24	19	18	10	11	8	12	13	-	2	-	-	-	-	156	6.3
	7	<i>Dipterocarpus kerii</i>	-	3	1	-	-	2	-	1	-	-	-	-	-	-	-	-	7	.3
	8	<i>Dipterocarpus gracilis</i>	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
	9	<i>Dipterocarpus grandiflorus</i>	-	-	3	-	1	-	-	1	-	-	-	-	-	-	-	-	5	.2
	10	<i>Dipterocarpus confertus</i>	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	3	.12
	11	<i>Dipterocarpus ? applanatus</i>	1	2	3	2	1	2	1	-	-	-	-	-	-	-	-	-	12	.5
	12	<i>Dipterocarpus humeratus</i>	-	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	4	.2
	13	<i>Dipterocarpus ? verrucosus</i>	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
	14	<i>Dipterocarpus ? acutangulus</i>	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	.12
3		Total Keruing Group	32	38	35	22	21	17	12	10	2	3	-	2	-	-	-	-	194	7.8
	15	<i>Shorea parvifolia</i>	29	19	21	30	20	13	8	3	4	-	1	2	-	-	-	-	150	6.0
	16	<i>Shorea ovalis</i>	1	3	-	1	1	1	-	1	-	-	-	-	-	-	-	-	8	.3
	17	<i>Shorea almon</i>	5	8	5	2	1	1	-	-	-	-	-	-	-	-	-	-	22	.9
	18	<i>Shorea smithiana</i>	2	1	2	4	3	7	2	1	4	2	3	-	-	1	-	-	32	1.3
	19	<i>Shorea pauciflora</i>	2	1	3	-	2	1	-	2	1	-	1	-	-	-	-	-	13	.5
	20	<i>Shorea leptoclados</i>	3	10	13	11	6	10	1	4	4	1	2	-	-	-	-	-	65	2.6
	21	<i>Shorea argentifolia</i>	-	1	1	2	2	1	1	1	1	-	-	-	-	-	-	-	10	.4
	22	<i>Shorea leprosula</i>	6	-	6	5	-	1	±	±	±	2	-	-	-	-	-	-	22	.9
	23	<i>Shorea beccariana</i>	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	.2
	24	<i>Shorea macroptera</i>	13	5	7	2	1	-	-	-	-	3	-	-	-	-	-	-	31	1.3
	25	<i>Shorea waltonii</i>	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
	26	<i>Shorea oleosa</i>	17	6	15	12	6	1	2	6	-	4	-	-	-	-	-	-	69	2.8
4		Total Red Seraya	81	56	75	69	42	36	14	19	15	12	7	2	-	1	-	-	429	17.3

			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Total	%
	27	<i>Shorea artrinervosa</i>	1	-	1	1	-	-	-	1	1	-	-	-	-	-	-	-	5	.2
	28	<i>Shorea superba</i>	1	8	3	4	1	2	1	3	2	1	-	-	-	-	-	-	26	1.1
	29	<i>Shorea exelliptica</i>	4	2	-	1	2	-	-	-	-	-	-	-	-	-	-	-	9	.4
	30	<i>Shorea leptoderma</i>	3	3	4	2	-	-	-	-	-	-	-	-	-	-	-	-	12	.4
	31	<i>Shorea hypoleuca</i>	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	.08
	32	<i>Shorea laevis</i>	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
	33	<i>Shorea glaucescens</i>	-	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	4	.2
	34	<i>Shorea sp.</i>	6	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	9	.4
	35	<i>Shorea guiso</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	.04
5		Total Selangan batu group	15	19	10	9	3	2	1	4	4	2	-	-	-	-	-	-	69	2.8
	36	<i>Hopea nervosa</i>	3	5	2	1	-	-	1	-	-	-	-	-	-	-	-	-	12	.5
	37	<i>Hopea ferrugenea</i>	2	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	5	.2
	38	<i>Hopea beccariana</i>	3	-	-	2	-	3	1	-	-	-	-	-	-	-	-	-	9	.4
6		Total Selangan group	8	6	3	3	-	4	2	-	-	-	-	-	-	-	-	-	26	1.1
	39	<i>Shorea symingtonii</i>	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
	40	<i>Shorea (Anthoshorea)</i>	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
7		Total Melapi group	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4	.16
	41	<i>Vatica sp.</i>	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
8		Total Resak group	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
	42	<i>Anisoptera costata</i>	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
9		Total	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
	43	<i>Hopea sangal</i>	-	-	1	-	1	2	-	-	-	-	-	-	-	-	-	-	4	.16
10		Total	-	-	1	-	1	2	-	-	-	-	-	-	-	-	-	-	4	.16
	44	<i>Shorea acuminatissima</i>	10	8	3	14	8	4	2	3	6	2	-	1	-	-	-	-	61	2.5
	45	<i>Shorea gibbosa</i>	11	7	6	5	8	8	2	10	4	5	2	-	1	-	-	-	69	2.8
	46	<i>Shorea hopeifolia</i>	10	5	2	3	-	-	-	-	-	-	-	-	-	-	-	-	20	.8
	47	<i>Shorea faguetiana</i>	-	-	-	1	-	1	1	2	-	-	-	-	-	-	-	-	5	.2
	48	<i>Shorea spp.</i>	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
11			32	20	11	24	16	13	5	15	10	7	2	1	1	-	-	-	157	6.3
		Total Dipterocarpaceae	384	308	329	285	191	149	66	93	45	40	15	5	2	2	-	-	1914	
		Percentage of Dipterocarpaceae of all trees	71.2	68.9	76.9	79.6	80.9	83.2	88.0	72.1	97.8	90.9	93.8	100	100	50	-	-	77.2	



Non-Dipterocarpaceae

(1) Single Species

Eusideroxylon zwageri  
 Sympetalandra borneensis  
 Koordersiodendron pinnatum  
 Dracontomelum mangiferum  
 Koopassia excelsa  
 Anthocephalus cadamba  
 Instia palembanica

(11) Indeterminate Species or Species Groups

Diospyros  
 Eugenia spp. (2 species)  
 Homalium spp.  
 Artocarpus spp. (2 species)  
 Lophopetalum spp.

	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total	%
Eusideroxylon zwageri	9	14	22	37	17	14	6	2	1	1	-	-	-	-	123	5.0
Sympetalandra borneensis	1	7	1	-	2	-	-	-	-	-	-	-	-	-	11	.4
Koordersiodendron pinnatum	1	3	-	-	-	-	-	-	-	-	-	-	-	-	4	.16
Dracontomelum mangiferum	2	-	1	-	-	-	-	-	-	-	-	-	-	-	3	.12
Koopassia excelsa	-	1	6	2	1	-	1	2	-	1	-	-	-	2	.7	
Anthocephalus cadamba	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	.08
Instia palembanica	3	1	-	-	-	1	-	-	-	1	-	-	-	-	3	.12
Diospyros	3	2	1	-	-	-	-	-	-	-	-	-	-	-	6	.2
Eugenia spp. (2 species)	8	13	5	3	-	-	-	-	-	-	-	-	-	-	29	1.2
Homalium spp.	-	2	2	-	-	-	-	-	-	-	-	-	-	-	4	.16
Artocarpus spp. (2 species)	9	2	2	1	-	-	-	-	-	-	-	-	-	-	14	.5
Lophopetalum spp.	3	2	2	2	-	-	-	-	-	-	-	-	-	-	9	.4

Table 5  
continued

Family Groups	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total	%
Alangiaceae (1 species)	1	-	-	-	-	-	1	-	-	-	-	-	-	-	1	.04
Anacardiaceae (5 species)	4	8	3	-	1	-	1	-	-	-	-	-	-	-	17	.7
Anonaceae	4	5	-	-	-	-	-	-	-	-	-	-	-	-	9	.4
Apocynaceae (1 species)	1	1	5	4	3	2	1	1	-	-	-	-	-	-	2	.08
Burseraceae	11	8	1	2	4	2	1	-	-	-	-	-	-	-	34	1.4
Combretaceae (1 species)	-	-	1	2	1	-	-	-	-	-	-	-	-	-	3	.12
Dilleniaceae (2 species)	8	1	2	4	1	-	-	-	-	-	-	-	-	-	11	.4
Euphorbiaceae (8 species)	24	8	4	3	2	-	-	-	-	-	-	-	-	-	42	1.7
Ragaceae (2 species)	11	6	7	3	2	-	-	-	-	-	-	-	-	-	27	1.1
Guttiferæ (2 species)	2	1	1	1	1	-	-	-	-	-	-	-	-	-	2	.08
Lecythidaceae (3 species)	7	1	2	1	4	2	-	1	-	-	-	-	-	-	11	.4
Leguminosae (6 species)	4	4	6	1	1	-	-	-	-	-	-	-	-	-	22	.9
Magnoliaceae (1 species)	1	-	1	-	1	-	-	-	-	-	-	-	-	-	1	.04
Malvaceae (4 species)	3	3	1	-	1	-	-	-	-	-	-	-	-	-	7	.3
Meliaceae	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
Myristicaceae	2	1	-	-	1	1	-	-	-	-	-	-	-	-	5	.2
Olivaceae (1 species)	3	2	1	1	-	-	-	-	-	-	-	-	-	-	6	.2
Rosaceae	3	2	3	-	-	-	-	-	-	-	-	-	-	-	8	.3
Rubiaceae (1 species)	1	1	1	1	1	1	-	-	-	-	-	-	-	-	1	.04
Sapindaceae (4 species)	6	4	2	1	1	3	-	-	-	-	-	-	-	-	15	.6
Sapotaceae	1	4	1	4	1	4	-	-	-	-	-	-	-	-	12	.4
Sterculiaceae (2 species)	4	21	6	5	10	4	-	2	-	1	1	-	-	-	54	2.2
Thymalaeaceae	1	1	1	1	1	1	-	-	-	-	-	-	-	-	3	.12
Tiliaceae	4	4	2	1	1	1	-	-	-	-	-	-	-	-	12	.5
(14) Miscellaneous (25 species)	14	11	10	1	-	-	-	-	-	-	-	-	-	-	36	1.5
Total Non-Dipterocarpaceae	155	139	99	73	45	30	9	8	1	4	1	-	-	2	566	
% Non-Dipt. of all trees	28.8	31.1	23.1	20.4	19.1	16.8	12.0	7.9	2.2	9.1	6.2	-	-	50.0	22.8	
Total all trees measured	539	447	428	358	236	179	75	101	46	44	16	5	2	4	2480	

Table 5 continued

Table 6 Enumeration Kalabakan F.R. Systematic Sub-samples to 12 ins girth covering 6 acres

A. Dipterocarpaceae		Numbers of stems enumerated by half ft girth classes												Total	%
Group	No. of Species	Group Name	1 /1½	1½ /2	2 /2½	2½ /3	3 /3½	3½ /4	4 /4½	4½ /5	5 /5½	5½ /6	6+	Total	%
1	3	White Seraya (Parashorea spp.)	7	7	3	2	3	6	3	-	4	-	13	31	5.7
2	2	Kapur (Dryobalanops spp.)	16	15	8	7	6	5	3	1	4	3	22	61	11.1
3	3	Keruing (Dipterocarpus spp.)	6	4	5	-	4	-	-	1	-	-	7	20	3.6
4	5	Red Seraya (Shorea spp.)	2	2	7	5	1	2	1	1	4	2	9	21	3.8
5	4	Yellow Seraya (Shorea spp.)	4	2	1	-	2	1	1	-	-	-	8	12	2.2
6	4	Selangan (Hopea spp.)	5	3	3	1	2	-	-	-	-	-	1	14	2.6
7	4	Selangan Batu (Shorea spp. Eushorea)	-	-	-	1	1	1	1	1	-	-	4	4	.7
8	1	Resak (Vatica spp.)	1	-	-	-	-	-	-	-	-	-	-	1	.2
9	1	Melapi (Shorea spp. Anthoshorea)	-	-	-	-	-	-	-	-	-	1	-	-	-
10	1	Pengiran Kesat (Anisoptera spp.)	1	-	-	-	-	-	-	-	-	-	-	1	.2
Total Dipterocarpaceae			42	33	27	16	19	15	9	4	12	6	64	165	30.1
Percentage of Dipterocarpaceae of all trees			25.9	23.7	30.3	28.6	44.2	57.7	45.0	30.8	50.0	75.0	74.4	30.1	

14  
Table 6 continued

B. Non Dipterocarpaceae (i) Common as genera/species	1	1½	2	2½	3	3½	4	4½	5	5½	6	6+	Total	#
<i>Eusideroxylon zageri</i>	-	1	1	-	1	-	-	-	-	1	-	7	3	.5
<i>Glochidion</i> spp.	2	-	-	-	1	-	-	-	1	-	-	1	4	.7
<i>Scaphium</i> spp.	1	1	1	-	1	1	-	-	-	-	-	2	5	.9
<i>Koompasia excelsa</i>	-	1	1	-	-	-	-	-	-	-	-	2	1	.2
<i>Koilolepas</i> spp.	3	2	2	-	1	-	-	-	-	-	-	-	8	1.5
<i>Parinari</i> spp.	1	2	2	1	4	-	-	-	-	-	-	-	8	1.5
<i>Drypetes</i> spp.	4	4	4	1	1	-	1	1	-	-	-	-	12	2.2
<i>Litsea odorifera</i>	-	2	2	1	1	-	-	-	-	1	-	-	4	.7
<i>Xanthophyllum</i> spp.	1	1	1	-	-	-	-	-	-	-	-	-	3	.5
<i>Hydnocarpus</i> spp.	6	2	2	-	-	-	-	-	-	-	-	-	8	1.5
<i>Alangium</i> spp.	2	3	3	4	2	-	-	-	-	1	-	-	11	2.0
<i>Diospyros</i> spp.	3	3	3	-	2	2	1	-	4	1	-	-	11	2.0
<i>Mallotus pinnangensis</i>	10	9	9	5	2	-	-	1	-	-	-	-	27	4.9
<i>Garcinia</i> spp.	-	1	1	2	-	2	-	-	-	-	-	-	5	.9
<i>Sympetalandra borneensis</i>	1	2	2	1	-	-	-	-	-	-	-	-	4	.7
<i>Pentace</i>	2	1	1	-	-	2	1	-	-	-	-	2	6	1.1
<i>Baccaurea stipulata</i>	3	6	6	3	1	-	-	-	-	-	-	-	13	2.4
Total Group (i)	39	41	41	21	14	11	4	2	1	4	-	14	133	24.2

Anacardiaceae	3	2	37	23	12	6	8	7	1	7	7	1.3
Anonaceae	13	10	8	3	3	1	1	1	1	39	7.1	
Bombacaceae	-	1	-	1	-	-	-	-	-	3	.5	
Burseraceae	8	5	3	3	-	-	2	1	-	21	3.8	
Celastraceae	-	-	-	1	-	-	1	-	-	2	.4	
Dilleniaceae	9	4	-	1	-	-	-	-	-	14	2.6	
Euphorbiaceae	4	1	5	3	-	1	1	-	-	16	2.9	
Fagaceae	1	1	3	1	1	-	1	3	1	9	1.6	
Guttiferæ	-	-	1	-	-	1	-	1	-	3	.5	
Lauraceae	11	8	4	3	1	2	-	1	-	29	5.3	
Lecythidaceae	1	3	1	2	1	-	-	-	-	8	1.5	
Leguminosae	3	-	-	1	3	-	-	-	-	7	1.3	
Magnoliaceae	1	-	-	-	-	-	-	-	-	1	.2	
Melastomataceae	-	1	1	-	-	-	-	-	-	2	.4	
Meliaceae	5	7	1	-	1	-	-	-	-	14	2.6	
Moraceae	-	-	-	-	-	-	-	-	1	-	-	
Myristicaceae	1	5	3	1	-	1	-	-	-	12	2.2	
Myrtaceae	7	2	1	-	-	-	-	2	-	10	1.8	
Oleaceae	-	-	1	-	-	-	-	-	-	2	.4	
Oleaceae	1	-	1	-	-	-	-	-	-	2	.4	
Rubiaceae	-	-	-	-	1	-	-	-	-	1	.2	
Sapindaceae	-	1	1	-	-	-	1	-	-	3	.5	
Sapotaceae	1	4	3	2	1	-	1	-	-	13	2.4	
Sterculiaceae	-	-	-	-	-	-	-	-	-	1	-	
Tiliaceae	1	-	-	-	-	-	-	-	-	1	.2	
Total Group (ii)	70	55	37	23	12	6	8	7	1	219	40.1	



Appendix 2

Representative Stand Tables

Table 1	RP 271E	Beaufort Hill	1 acre (0.4 ha.)
Table 2	RP 307A *	Kalabakan F.R. (Umas Umas)	63 acres (25.2 ha.)
Table 3	RP 292/1	Sepilok F.R.	10 acres (4 ha.)
Table 4	RP 210/2	Garinomo F.R.	10 acres (4 ha.)
Table 5	RP 242 *	Segaliud-lokan F.R.	10 acres (4 ha.)
Table 6	RP 245/1 *	Segaliud-Lokan F.R.	25 acres (10 ha.)
Table 7	RP 350 *	Kuamut F.R.	17 acres (6.8 ha.)
Table 8	RP 304 *	Karito Estate	23 acres (9.2 ha.)
Table 9	RP 307B *	Kalabakan F.R. (Umas Umas)	16 acres (6.4 ha.)
Table 10	RP 271/A *	Kalabakan F.R. (Umas Umas)	10 acres (4 ha.)
Table 11	RP 303 *	Kalabakan F.R. (Brantian)	16 acres (6.4 ha.)
Table 12	RP 271/F *	Kalabakan F.R. (Luasong)	10 acres (4 ha.)
Table 13	RP 339 *	Tawan Hills F.R.	10 acres (4 ha.)
Table 14	RP 15	Gunong Lumaku F.R.	4 acres (1.6 ha.)
Table 15	RP 292/2	Sepilok F.R.	10 acres (4 ha.)
Table 16	RP 292/3	Sepilok F.R.	10 acres (4 ha.)

\* Subsequently felled over, other plots are in  
Virgin Jungle Reserves.

Appendix 2 - Table 1  
 Stand Table RP 271E Beaufort Hill 1 acre (0.4 Ha.)

Species	Number of Trees in Size Classes										Total
	1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	
<u>Dipterocarpaceae</u>											
<u>Shorea (Rubroshorea)</u>											
<i>S. argentifolia</i>	-	-	1	3	2	1	1	-	-	-	8
<i>S. fallax</i>	2	1	-	-	-	1	-	-	-	-	4
<i>S. macroptera</i>	3	1	1	-	-	-	-	-	-	-	5
<i>S. parvifolia</i>	-	1	-	-	-	-	-	-	-	-	1
<i>S. quadrinervis</i>	6	3	3	2	1	1	-	-	-	-	16
(Richtia)											
<i>S. acuminatissima</i>	-	-	-	-	1	-	-	-	-	-	1
<i>S. multiflora</i>	1	1	-	-	-	-	-	-	-	-	2
(Selangan Batu)											
<i>S. laevis</i>	2	2	2	1	-	-	-	-	-	-	8
(Anthoshorea)											
<i>S. ochracea</i>	5	-	-	1	1	-	-	-	-	-	7
<u>Dipterocarpus acutangulus</u>											
<i>D. conformis</i>	-	-	-	-	-	-	-	-	1	1	1
<i>D. lowii</i>	2	1	-	-	-	1	-	-	-	-	4
<u>Parashorea smythiesii</u>											
Other Dipterocarpaceae	5	1	-	-	-	-	-	-	-	-	1
<u>Non-Dipterocarps</u>											
<i>Melanorrhoea wallichii</i>	15	2	-	-	-	-	-	-	-	-	17
<i>Elateriospermum tapos</i>	7	-	-	-	1	-	1	-	-	-	9
<i>Lophopetalum javanicum</i>	6	1	-	-	-	-	-	-	-	-	7
Other Non-Dipterocarps 50 species	94	28	13	4	5	2	0	1	1	1	148
Totals	148	42	20	11	11	6	2	1	1	3	245
Per 10 acres/4 Ha.	1480	420	200	110	110	60	20	10	10	30	2450



Appendix 2 - Table 2

Stand Table RP 307A Kalabakan F.R. (Umas Umas) 63 plots of 0.4Ha. in 1036 Ha.

Species	Number of Trees in Size Classes											Total	Tc		
	4.5 44	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+						
<u>Dipterocarpaceae</u>															
Shorea (Rubroshorea)															
S. parvifolia	16	11	16	12	9	4	9	6	8	91					
S. leptoclados	6	5	7	7	4	2	2	2	3	38					
S. smithiana	10	4	3	7	2	3	-	1	5	35					
S. leprosula	5	4	4	6	5	-	3	1	1	29					
S. pauciflora	5	2	7	1	7	-	-	-	7	29					
Others: 6 species (Richetia)		1	5	3	2	3	4	1	9	33					
2 species (Selangan Batu)		-	1	1	-	2	2	3	7	16					
4 species (Anthoshorea)	7	6	2	3	5	6	-	3	19	51					
S. symingtonii	1	1	-	-	-	-	-	-	-	2					
Dipterocarpus caudiferus	3	8	6	4	1	2	3	6	5	38					
Other Dipterocarpaceae: 4 species	4	2	1	-	1	1	1	-	2	12					
Parashorea tomentella	9	3	5	10	3	5	1	3	6	45					
Dryobalanops lanceolata	14	5	5	6	4	1	8	4	15	62					
Other Dipterocarpaceae: 8 species	19	6	4	3	2	-	1	-	1	36					
<u>Non-Dipterocarps</u>															
Eusideroxylon zwageri	46	27	27	28	15	11	6	12	7	179					
Dillenia borneensis	54	18	14	9	3	3	-	-	1	102					
Eugenia species	22	17	6	1	1	1	1	1	-	50					
Castanopsis sp.	25	8	3	2	3	-	-	-	-	41					
Other Non-Dipterocarps	49	23	19	10	6	2	2	2	4	117					
Totals	300	151	135	113	73	46	43	45	100	1006					
Per 10 acres/4 Ha.	47.6	24.0	21.4	17.9	11.6	7.3	6.8	7.1	15.7	159.7					



Stand Table RP 210/2 Garinono F.R. 10 acres (4 Ha.)

Species	Number of Trees in Size Classes											To			
	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+			6				
Girth (Ft.) Diam. (Cm.)															
<u>Dipterocarpaceae</u>															
<u>Shorea</u> (Rubroshorea)															
S. salmon	-	-	1	-	1	-	-	-	-	-	-	-	-	1	17
S. leptrosula	-	2	1	-	-	-	-	-	-	-	-	-	-	1	17
S. leptoclados	2	1	1	-	-	-	-	-	-	-	-	-	-	1	5
S. parvifolia	1	-	1	-	-	-	-	-	-	-	-	-	-	1	10
S. pauciflora	1	-	1	-	-	-	-	-	-	-	-	-	-	1	14
S. smithiana	1	-	-	-	-	-	-	-	-	-	-	-	-	1	39
S. waltonii	1	-	-	-	-	-	-	-	-	-	-	-	-	1	18
(Ricketia)															
S. acuminatissima	1	-	1	-	-	-	-	-	-	-	-	-	-	2	4
S. hopeifolia	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
(Selangan Batu)															
S. atrinervosa	-	-	1	-	1	-	-	-	-	-	-	-	-	-	2
S. hypoleuca	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
S. superba	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
Unident.	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
(Anthoshorea)															
S. symingtonii	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Dipterocarpus candidiferus	5	2	4	1	2	-	-	-	-	-	-	-	-	2	17
Parashorea malaanonan	-	-	2	1	1	-	-	-	-	-	-	-	-	1	5
P. tomentella	-	-	2	1	1	-	-	-	-	-	-	-	-	1	10
Dryobalanops lanceolata	1	4	-	1	1	-	-	-	-	-	-	-	-	1	14
<u>Non-Dipterocarps</u>	13	15	6	4	-	-	-	-	-	-	-	-	-	1	39
<u>Eusideroxylon zwageri</u>	4	6	1	1	-	-	-	-	-	-	-	-	-	1	18
<u>Other Non-Dipterocarps</u>															
Totals 10 acres/4 Ha.	31	31	21	10	7	7	8	18	133						

Appendix 2 - Table 5

Stand Table RP 242 Segalind-Lokan F.R. 10 acres (4 Ha.)

Species	Number of Trees in Size Classes													Total	
	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+					
<u>Dipterocarpaceae</u>															
<u>Shorea (Rubroshorea)</u>															
S. leprosula	1	1	-	1	-	-	-	-	-	-	-	-	-	-	2
S. macrophylla	1	1	-	2	-	-	-	-	-	-	-	-	-	-	2
S. leptoclados	1	1	1	-	-	2	-	-	-	-	-	-	-	-	20
S. parvifolia	1	2	-	-	1	-	-	-	-	-	-	-	-	-	6
S. paniciflora	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
S. waltonii	-	-	1	2	-	1	-	-	-	-	-	-	-	-	1
(Richtia)															
S. hopeifolia	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2
(Selangam Batu)															
S. superpa	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2
(Anthoshorea)															
S. symingtonii	-	-	-	1	1	-	-	-	-	-	-	-	-	-	3
Dipterocarpus candiferus	2	2	1	-	3	1	-	-	-	1	-	-	-	-	10
D. gracilis	1	1	-	-	2	-	-	-	-	-	-	-	-	-	4
Parashorea malanonan	-	1	1	1	-	1	-	-	-	1	-	-	-	-	6
P. tomentella	2	6	7	3	6	2	-	-	-	1	-	-	-	-	34
Dryobalanops lanceolata	2	4	7	4	4	2	-	-	-	-	-	-	-	-	28
Other Dipterocarps - 3 species	2	1	1	1	-	-	-	-	-	1	-	-	-	-	6
<u>Non-Dipterocarps</u>															
Eusideroxylon zwageri	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2
Barringtonia scortechinii	-	2	2	-	-	-	-	-	-	-	-	-	-	-	4
Loppopetalum javanicum	5	-	1	-	-	-	-	-	-	-	-	-	-	-	6
Pterospermum elongatum	2	2	-	-	-	-	-	-	-	-	-	-	-	-	4
Other Non-Dipterocarps	18	9	6	5	2	-	-	-	-	-	-	-	-	-	44
36 species															
Totals 10 acres/4Ha	39	34	30	20	19	9	13	7	6	15	192				

Appendix 2 - Table 6

Stand Table RP 245/1 Segalind-Lokan F.R. 10 plots totalling 25 acres (10 Ha.)

Species	Number of Trees in Size Classes										Total	
	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12 126				
<u>Dipterocarpaceae</u>												
<u>Shorea</u> (Rubroshorea)												
<i>S. salmon</i>	2	2	1	2	1	1	1	1	1	1	1	6
<i>S. leptrosula</i>	3	2	1	1	7	2	1	1	1	2	1	10
<i>S. leptoclados</i>	2	3	4	2	1	1	1	1	1	1	1	12
<i>S. mecistopteryx</i>	2	1	3	1	1	3	1	1	1	1	1	12
<i>S. parvifolia</i>	5	1	3	2	1	1	1	1	1	1	1	15
Others: 7 species (Richtia)	3	1	2	3	1	2	1	1	1	2	1	19
<i>S. acuminatissima</i>	1	2	1	-	-	-	-	-	-	-	-	6
<i>S. gibbosa</i>	-	1	2	-	-	-	-	-	-	-	-	5
(Selangan Batu)												
<i>S. superba</i>	2	-	2	1	-	2	1	1	1	1	1	8
<i>S. hypoleuca</i>	-	-	-	1	-	-	1	-	-	-	-	1
(Anthoshorea)												
<i>S. symingtonii</i>	-	-	1	-	-	-	-	-	-	-	-	1
<u>Dipterocarpus appplanatus</u>	1	1	3	-	-	-	-	-	-	-	-	5
<u>D. caudiferus</u>	2	1	-	-	2	-	-	-	-	-	-	4
<u>Dipterocarpus spp: 3 others</u>	4	1	-	-	1	1	1	1	1	1	1	8
<u>Parashorea malaanonan</u>	-	1	1	-	-	-	-	-	-	-	-	4
<u>P. tomentella</u>	5	1	2	2	-	2	1	1	1	1	1	16
<u>Dryobalanops lanceolata</u>	1	1	1	1	-	1	1	1	1	1	1	10
<u>Hopea sangal</u>	1	-	-	-	-	-	-	-	-	-	-	1
<u>Non-Dipterocarps</u>												
<i>Eusideroxylon zwageri</i>	8	4	5	6	1	1	1	1	1	1	1	26
<i>Heritiera simplicifolia</i>	3	4	1	1	1	1	1	1	1	1	1	11
Other Non-Dipterocarps	10	10	1	2	-	2	1	1	1	1	1	27
Totals	53	35	30	25	16	20	16	16	24	24	24	219
Per 10 acres/4 Ha.	21	14	12	10	6.4	8	6.4	6.4	9.6	9.6	9.6	88



Appendix 2 - Table 8

Stand Table RP 304 Karito Estate Tawau 23 Plots of 0.4 Ha - 23 acres ( 9.2 Ha.)

Species	Number of Trees in Size Classes											Total		
	4.5 44	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+				
<u>Dipterocarpaceae</u>														
Shorea (Rubroshorea)														
S. argenteifolia	1	1	1	-	-	2	2	1	1	1	1	1	1	8
S. leprosula	-	1	4	-	1	-	4	1	-	-	3	-	1	10
S. macrophylla	1	1	-	2	1	4	1	2	2	2	2	2	7	23
S. mecipteryx	2	5	4	5	2	1	1	2	2	2	1	2	2	29
S. ovalis	1	6	4	1	2	4	2	2	2	3	1	3	3	17
S. parvifolia	1	3	-	3	2	-	-	2	2	3	4	-	6	23
S. pauciflora	1	2	-	-	1	-	-	1	1	-	-	-	6	10 <sup>24</sup>
S. smithiana	1	4	1	1	1	-	-	1	1	-	-	-	-	9
Others: 6 species	1	1	11	2	5	3	2	2	2	2	2	2	-	29
(Richetia)	1	-	2	3	1	-	1	1	1	1	1	3	3	12
3 species	1	-	2	3	1	-	1	1	1	1	1	2	2	12
(Selangan Batu)	1	3	-	1	1	3	1	1	1	1	-	-	-	12
4 species	1	3	-	1	1	3	1	1	1	1	-	-	-	12
(Anthoshorea)	-	-	-	1	1	-	1	1	1	1	-	-	-	3
S. symingtonii	-	-	-	1	1	-	1	1	1	1	-	-	-	3
Dipterocarpus spp-3species	2	3	2	3	-	1	1	3	3	3	3	3	1	18
Parashorea tomentella	2	2	2	-	1	2	-	1	1	1	1	1	1	11
Other Dipterocarps	-	3	-	1	-	-	1	-	-	-	-	2	-	6
<u>Non-Dipterocarps</u>														
Eusideroxylon zwageri	16	23	28	15	12	17	5	3	5	5	3	5	-	124
Eugenia species	2	2	4	2	1	1	-	-	-	-	-	-	-	12
Koompassia malaccensis	1	1	1	-	1	1	-	-	-	-	-	-	-	7
Other Non-Dipterocarps	15	34	19	11	8	1	4	6	1	1	6	1	5	104
Totals	49	95	83	51	41	38	32	23	22	33	23	22	33	467
Per 10 acres/4 Ha.	21	41	37	22	18	17	14	10	9.5	14.5	10	9.5	14.5	203

Appendix 2 - Table 9

Stand Table RP 307B Kalabakan F.R. (Umas Umas) 16 Plots of 0.4 Ha. in 259 Ha.

Species	Number of Trees in Size Classes											Total		
	4.5 44	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+				
<b>Dipterocarpaceae</b>														
<b>Shorea (Rubroshorea)</b>														
S. leprosula	-	2	1	-	-	-	-	-	-	-	-	-	-	3
S. leptoclados	-	-	1	-	3	1	-	-	-	1	-	-	1	8
S. macroptera	1	1	-	-	-	1	4	-	-	-	-	-	-	3
S. parvifolia	2	3	5	2	-	-	-	-	2	-	-	-	-	30
S. pauciflora	-	1	-	-	-	-	2	-	-	-	-	-	-	4
S. oleosa	-	1	1	-	-	-	-	-	-	-	-	-	-	2
S. smithiana	3	-	3	2	1	2	-	-	-	-	-	-	-	13
(Richea)														
S. gibbosa	1	-	-	-	-	-	-	-	-	-	1	-	-	6
(Selangan Batu)														
S. laevis	2	3	-	-	2	1	-	-	-	1	1	4	-	25
Dipterocarpus caudiferus	2	1	-	-	-	-	-	-	-	-	-	-	-	15
Dipterocarpus confertus	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Parashorea tomentella	3	-	-	-	-	2	-	-	-	-	-	-	-	1
Dryobalanops lanceolata	2	1	5	2	1	3	-	-	-	-	-	-	-	15
Other Dipterocarps-2species	4	3	2	-	-	-	-	-	-	-	-	-	-	16
<b>Non-Dipterocarps</b>														
Eusideroxylon zwageri	-	7	8	3	2	-	-	-	-	-	-	-	-	20
Dillenia borneensis	6	4	4	-	-	-	-	-	-	-	-	-	-	14
Engenia species	3	4	1	3	-	-	-	-	-	-	-	-	-	11
Other Non-Dipterocarps	11	14	8	3	1	3	-	-	-	-	-	-	-	41
Totals	40	47	41	16	19	20	10	6	4	4	12	12	215	
Per 10 acres/4 Ha.	25	29	26	10	12	12	6	4	2.5	7.5	7.5	134		



Appendix 2 - Table 10

Stand Table RP 271A Kalabakan F.R. (Umas Umas) 10 acres (4 Ha.)

Species	Number of Trees in Size Classes											Total	Total 6'±	
	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12+ 116+					
<u>Dipterocarpaceae</u>														
<u>Shorea (Rubroshorea)</u>														
<i>S. argentifolia</i>	1	1	1	2	1	-	-	-	1	-	-	2	9	7
<i>S. leptrosula</i>	1	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>S. leptoclados</i>	-	1	-	1	-	-	-	-	1	-	-	4	2	1
<i>S. parvifolia</i>	-	2	-	1	-	-	-	-	-	-	-	-	9	7
<i>S. pauciflora</i>	1	-	-	-	-	-	-	-	-	-	-	-	1	-
(Richetia)														
<i>S. faguetiana</i>	1	2	-	-	-	-	-	-	1	-	-	2	6	3
<i>S. multiflora</i>	-	1	-	-	1	-	-	-	-	-	-	-	3	3
(Selangan Batu)														
<i>S. seminis</i>	1	1	-	-	2	-	-	-	-	-	-	-	4	2
(Anthoshorea)														
<i>Shorea sp. indet</i>	1	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Parashorea tomentella</i>	1	3	4	1	-	-	-	-	-	-	-	-	9	5
<i>Dryobalanops lanceolata</i>	3	2	1	-	2	-	-	-	2	-	-	2	14	9
<u>Non Dipterocarps</u>														
<i>Eusideroxylon zwageri</i>	17	18	17	12	8	3	-	-	-	1	6	82	47	
<i>Hydnocarpus sp.</i>	3	2	4	-	-	-	-	-	-	-	-	9	4	
<i>Parinari sp.</i>	-	4	1	1	1	-	-	-	-	-	-	7	3	
<i>Eugenia species (4)</i>	3	2	-	2	-	-	-	-	-	-	-	7	2	
<i>Castanopsis elmeri</i>	1	-	1	1	-	-	-	-	-	-	-	3	2	
<i>Parishia sp.</i>	1	-	-	1	-	1	-	-	-	-	-	3	2	
<i>Koompassia excelsa</i>	-	-	-	-	-	-	-	-	-	-	1	2	2	
<i>Artocarpus borneensis</i>	-	1	-	-	-	1	-	-	-	-	-	2	2	
Other Non-Dipterocarps (41 species)	22	17	15	3	5	1	1	1	1	-	1	65	26	
<b>Totals</b>	<b>57</b>	<b>56</b>	<b>45</b>	<b>25</b>	<b>20</b>	<b>9</b>	<b>7</b>	<b>2</b>	<b>18</b>	<b>239</b>	<b>126</b>			

Appendix 2 - Table 11

Stand Table RP 303 Kalabakan F.R. (Brantian) 16 plots of 0.4 Ha. 16 acres (6.4Ha)

Species	Number of Trees in Size Classes											Total	Total 6'+	
	4.5 44	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12 + 126 +				
<u>Dipterocarpaceae</u>														
Shorea (Rubroshorea)														
S.leprosula	1	2	4	2	6	5	2	1	4	3	2	2	7	4
S.mecistopteryx	2	6	2	3	4	1	3	2	2	2	2	2	37	29
S.oleosa	2	3	2	3	4	1	3	1	1	2	2	2	22	17
S.ovalis	1	2	3	5	3	1	1	1	1	1	1	1	6	3
S.parvifolia	1	1	1	1	1	1	1	2	1	1	1	1	16	15
S.pauciflora	1	1	1	1	2	1	1	1	1	1	1	1	8	7
S.smithiana	1	1	1	1	2	1	1	1	1	1	1	1	6	5
Others: 3 species	1	1	1	1	1	1	1	1	1	1	1	1	3	2
(Richtia)														
S.gibbosa	3	1	1	2	1	1	1	1	1	1	1	4	8	7
Others: 2 species														
(Selangan Batu)														
S.laevis	1	1	1	3	1	1	1	1	1	1	1	1	2	5
Others: 4 species														
(Anthoshorea)														
S.agami														
Dipterocarpus candiferus														
D.exalatus		1	1	1	1	1	1	1	1	1	1	2	1	1
D.confertus		1	1	1	1	1	1	1	1	1	1	1	7	6
D.verrucosus		1	1	2	1	1	1	1	1	1	1	1	2	2
Parashorea malaanonan		1	1	1	1	1	1	1	1	1	1	1	9	7
P.smythiesii		1	2	2	1	1	1	1	1	1	1	1	1	1
P.tomentella		1	1	2	1	1	1	1	1	1	1	1	2	2
Dryobalanops keithii		1	1	1	1	1	1	1	1	1	1	1	7	6
Dr.Lanceolata	2	1	1	3	1	1	1	1	1	1	1	1	3	3
Other Dipterocarps	1	1	1	1	1	1	1	1	1	1	1	1	10	8
<u>Non-Dipterocarps</u>														
Eusideroxylon zwageri	4	3	5	2	2	1	2	1	1	1	1	1	19	12
Other Non-Dipterocarps	22	28	17	13	6	3	13	3	3	3	1	1	98	48
Totals	42	51	39	44	31	20	44	11	15	15	24	24	292	199
Per 10 acres/4Ha.	26	32	24	28	19	13	28	7	9	9	15	15	182	124

Appendix 2 - Table 12

Stand Table RP 271F Kalabakan F.R. (Luasong) 10 acres (4 Ha.)

Species	Number of Trees in Size Classes											Total	Total 61+	
	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+	Total			
<u>Dipterocarpaceae</u>														
<u>Shorea (Rubroshorea)</u>														
<i>S. leptoclados</i>	2	-	1	-	-	-	-	-	-	-	-	-	1	4
<i>S. oleosa</i>	5	3	-	-	2	-	-	-	-	-	-	-	2	13
<i>S. parvifolia</i>	2	-	-	1	1	-	-	-	-	-	-	-	-	5
<i>S. pauciflora</i>	1	1	-	-	1	-	-	-	-	-	-	-	2	6
<i>S. smithiana</i>	1	1	-	-	1	-	-	-	-	-	-	-	-	4
Others: 2 species (Ricketia)	2	-	-	-	-	-	-	-	-	-	-	-	-	3
2 species (Selangan Batu)	-	-	2	-	-	-	-	-	-	-	-	-	1	3
<i>S. seminis</i>	3	1	-	-	1	-	-	-	-	-	-	-	-	4
<i>S. superba</i>	-	1	1	3	-	-	-	-	-	-	-	-	-	4
Others: 2 species	1	1	3	3	-	-	-	-	-	-	-	-	-	2
<u>Dipterocarpus candiferus</u>	1	1	3	3	-	-	-	-	-	-	-	-	-	11
<u>Parashorea malaanonan</u>	1	1	-	2	1	1	2	1	1	1	1	1	-	14
<u>Dryobalanobalanops keithii</u>	1	1	10	4	7	3	4	1	1	1	1	1	1	32
<u>Dr. lanceolata</u>	3	3	3	2	1	3	2	1	1	1	1	1	-	13
<u>Hbpea nervosa</u>	5	7	-	1	-	-	1	-	-	-	-	-	-	13
Other Dipterocarps	1	2	-	2	-	-	1	-	-	-	-	-	1	7
<u>Non-Dipterocarps</u>														
<i>Ausideroxylon zwageri</i>	4	5	5	10	12	6	2	2	1	1	1	1	1	45
<i>Eugenia palawanensis</i>	7	3	-	-	-	-	-	-	-	-	-	-	-	10
<i>E. valdevenosa</i>	-	-	3	-	-	-	-	-	-	-	-	-	-	3
<i>Intsia palembanica</i>	1	1	-	2	-	-	1	1	1	1	1	1	1	5
<i>Dialium indum</i>	1	1	-	-	-	-	1	1	1	1	1	1	1	2
<i>Durio graveolens</i>	1	-	1	-	-	-	-	-	-	-	-	-	-	3
Other Non-Dipterocarps (47 species)	28	16	6	12	5	1	2	-	-	-	-	-	-	70
<b>Totals</b>	<b>81</b>	<b>53</b>	<b>36</b>	<b>42</b>	<b>32</b>	<b>12</b>	<b>18</b>	<b>4</b>	<b>2</b>	<b>9</b>	<b>289</b>	<b>155</b>		

Appendix 2 - Table 13

Stand Table RP 339 Tawam Hills F.R. 10 plots of 1 acre (4 Ha.)

Species	Number of Trees in Size Classes (Commercials only)											Total	Total 6'+				
	4.5 44	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+	12+ 126+						
<u>Dipterocarpaceae</u>																	
<u>Shorea (Rubroshorea)</u>																	
S. leptoclados	4	5	1	2	2	2	3	3	3	2	2	2	2	2	20	15	
S. smithiana	-	1	4	-	4	-	-	1	-	-	1	2	2	2	5	4	
Other: 6 species	3	3	-	2	-	2	-	2	-	1	-	-	-	-	11	5	
(Richtia)	-	-	1	1	1	-	-	-	-	-	-	-	-	-	5	5	
2 species	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
(Selangan Batu)	-	-	-	1	1	-	-	-	-	-	-	-	-	-	6	4	
2 species	4	2	-	-	1	-	1	1	-	-	2	-	-	-	3	2	
Dipterocarpus candiferus	-	1	1	1	-	-	-	-	-	-	-	-	-	-	4	3	
Dipterocarpus spp 2 species	-	1	3	-	-	-	-	-	-	-	-	-	-	-	4	3	
Parashorea malaanonan	2	9	-	6	5	7	6	2	4	4	5	5	5	46	35		
Dryobalanops lanceolata	-	-	-	1	-	2	1	1	1	1	2	2	2	8	8		
Other Dipterocarps - Hopea sp.	-	-	1	-	-	-	-	-	-	-	-	-	-	1	1		
<u>Non-Dipterocarps</u>																	
Eusideroxylon zwageri	-	1	1	-	1	-	-	-	-	-	-	-	-	-	3	2	
Other Non-Dipterocarps	-	1	2	1	-	1	-	-	-	-	-	-	-	-	5	4	
Totals	5	24	10	14	10	13	17	7	6	11	11	11	11	117	88		



## Stand Table RP 292/2 Sepilok F.R. 10 acres (4 Ha.)

Species	Girth (Ft.)		Number of Trees in Size Classes							Total	Total 6 1/4		
	Diam (Cm.)		4	5	6	7	8	9	87				
<u>Dipterocarpaceae</u>													
<u>Shorea</u> (Rubroshorea)													
<i>S. argentifolia</i>			1	-	-	-	-	-	-	-	1	-	4
<i>S. macroptera</i> (Richetia)			9	3	3	-	1	-	-	-	16	-	4
<i>S. multiflora</i> (Selangan Batu)			5	6	2	1	1	-	-	-	15	-	4
<i>S. glaucescens</i> (Anthoshorea)			-	-	1	-	-	-	-	-	1	-	1
<i>S. agami</i>			1	-	-	-	-	-	-	-	1	-	-
<i>Dipterocarpus acutangulus</i>			1	3	1	1	1	-	1	-	7	3	2
<i>D. grandiflorus</i>			3	-	1	1	-	-	-	-	5	2	-
Other Dipterocarps - 3 species			1	2	-	-	-	-	-	-	3	-	-
<u>Non-Dipterocarps</u>													
<i>Lithocarpus conocarpus</i>			23	15	4	-	-	-	-	-	42	4	4
<i>Lithocarpus</i> species - 2 species			3	2	-	-	-	-	-	-	5	-	-
<i>Castanopsis motleyana</i>			2	2	-	1	-	-	-	-	5	1	2
<i>Eugenia</i> species - 6 species			12	3	-	2	-	-	-	-	17	2	2
<i>Baccaurea parviflora</i>			14	11	2	-	-	-	-	-	27	2	2
<i>Parishia sericea</i>			5	1	1	1	-	-	-	-	8	2	2
<i>Dialium</i> sp. cf. <i>indum</i>			1	2	-	1	-	-	-	-	4	2	2
<i>Scaphium affine</i>			1	1	-	1	-	-	-	-	3	1	1
<i>Heritiera simplicifolia</i>			1	1	-	1	-	-	-	-	3	1	1
<i>Ganna sarawakensis</i>			1	1	-	1	-	-	-	-	3	1	1
Other Non-Dipterocarps - 25 species			42	22	3	-	-	-	1	-	67	3	3
Totals			126	75	20	10	4		2		237	36	36

## Stand Table RP 292/3 Sepilok F.R. - 10 acres (4 Ha.)

32

Girth (ft) Diam (cm)	Number of Trees in Size Classes											Total 6'+	
	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+	Total		
<u>Dipterocarpaceae</u>													
<u>Shorea (Rubroshorea)</u>													
S. argentifolia	3	2	1	-	-	-	-	-	-	-	-	6	1
S. macroptera	5	2	-	-	-	-	-	-	-	-	-	7	-
S. paniciflora	-	-	-	1	-	1	-	-	-	-	-	2	2
S. smithiana (Richea)	5	1	1	1	-	-	-	-	-	-	-	9	3
S. multiflora	19	6	4	3	1	-	-	-	-	-	-	33	8
(Selangan Batu)													
S. glaucescens	-	1	-	3	3	1	1	2	-	-	-	3	2
Diptero. acutangulus	3	5	1	3	-	2	3	1	1	-	-	25	17
D. confertus	-	3	1	-	-	1	-	-	-	-	-	1	1
D. grandiflorus	3	1	4	-	1	1	-	-	-	-	-	11	7
Diptero. sp indet	-	-	-	-	1	-	-	-	-	-	-	1	1
<u>Non-Dipterocarps</u>													
Lithocarpus conocarpus	18	13	5	1	-	-	-	-	-	-	-	37	6
L. mejeri	2	1	-	-	-	-	-	-	-	-	-	3	-
Castanopsis motleyana	1	1	-	-	-	-	-	-	-	-	-	2	-
Eugenia sp (3species)	10	3	-	1	-	-	-	-	-	-	-	14	1
Parishia sericea	3	1	4	-	-	-	-	-	-	-	-	8	4
Dialium sp. c.f. indum	1	-	1	1	1	-	-	-	-	-	-	5	4
Scaphium affine	-	1	-	-	-	1	1	-	-	-	-	2	1
Melanorrhoea sp. indet	4	4	2	-	-	-	-	-	-	-	-	11	3
Palaequium gutta	1	2	-	-	1	-	-	-	-	-	-	4	1
Other Non-Dipt. 34 species	68	15	6	2	2	-	-	-	-	-	-	95	12
<b>Totals</b>	<b>146</b>	<b>59</b>	<b>31</b>	<b>13</b>	<b>11</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>-</b>	<b>1</b>	<b>279</b>	<b>74</b>	





Appendix 3 - Table 1 (continued.....)

Species	Number of Trees in Size Classes													Totals	Totals 6'
	Girth (ft.) Diam (cm.)	1	2	3	4	5	6	7	8	9	10	11	12		
Homalium foetidum	12	6	1	2	-	1	1							23	2
Hydnocarpus spp	-	1	2											3	-
Koilocarpus longifolium	7	1												8	-
Lithocarpus spp	3	2	4	3	1	-	-	-	1					14	1
Laportea sp.indet.	9	1												10	-
Lauraceae (spp)	43	24	13	8	1	1	-	-	-	-	-	-	1	91	2
Meliaceae (spp)	38	11	2	3	1	-	1							56	1
Mastixia trichotoma	5	3	1											9	-
Microcos crassifolia	3													3	-
Nephelium mutabile	10	5	4	4	-	-	1							24	1
Meiogyne virgata	1	1	1	-	1	-								4	-
Paranephelium nitidum	3	-	1	-	-	-	-	-	-	1				4	-
Parinari oblongifolia	-	1	1	-	-	-	-	-	-					3	1
Planchonia valida	-	-	-	-	1	-	-	-	-					2	1
Ptychopyxis arborea	13	4	1	-	-	-								18	-
Sapotaceae (spp)	2	1	-	-	-	-								3	-
Sindora irpicina	1	1	1	-	1									4	-
Others (see below)	21	7	3	-	-	-	-	-	-	-	-	-	-	31	-
<b>Totals, all species</b>	<b>440</b>	<b>145</b>	<b>60</b>	<b>31</b>	<b>18</b>	<b>10</b>	<b>13</b>	<b>7</b>	<b>11</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>751</b>	<b>57</b>
<b>Per 10 acres/4 ha.</b>	<b>880</b>	<b>290</b>	<b>120</b>	<b>62</b>	<b>36</b>	<b>20</b>	<b>26</b>	<b>14</b>	<b>22</b>	<b>10</b>	<b>2</b>	<b>20</b>	<b>20</b>	<b>1502</b>	<b>114</b>

Others

- Aglaia sp.indet 2' x 1'
- Ardisea sp.indet 1x1', 1x2'
- Euphoria malaiense 2x2', 1x3'
- Glochidion sp.indet. 3x1'
- Heritiera sp.indet. 1x1'
- Kopsia sp.indet. 1x1'
- Leea aculeata 1x1'
- Lophopetalum sp.indet. 2x1'
- Mallotus miquelanus 2x1'
- Mallotus sp.indet. 1' x 1'
- Mangifera pajang 1x1'
- Neonauclea sp.indet. 2x1', 1x2'
- Myristicaceae indet. 1x1', 1x2'
- Pometia pinnata 1x2'
- Pternandra coerulescens 2x1'
- Pterospermum sp.indet. 2x3'
- Talauma sp.indet. 1x1'

(Note: 1' = one foot class; 2x1' = two trees of one foot)



Appendix 3 - Table 2 (continued.....)

Species	Number of trees in Size Classes												Totals	Totals 6'
	1	2	3	4	5	6	7	8	9	10	11	12		
Girth (ft.)	10	20	30	39	48	58	68	78	87	97	107	116		
Diam. (cm.)	10	20	30	39	48	58	68	78	87	97	107	116		
Hydnocarpus sp. indet.	1												1	
Ryparosa hulletii	3												3	
Eusideroxylon zwageri	5			2		1	2	1					12	5
Lauraceae misc. (10)	13	9	1										24	
Sindora wallichii	2												2	
Sympetalandra borneensis	2												4	
Meliaceae (9)	16												21	
Myristicaceae (3)	7												9	
Eugenia spp (4)	14												14	
Anthocephalus chinensis					2								3	
Sapindaceae (5)													11	
Sapotaceae (3)	5												3	
Sterculiaceae (2)	3												2	
Gonystylus keithii		2											7	
Microcos hirsuta	6	1											2	
Pentace laxiflora	6	5		1									14	
Teijsmanniodendron pteropodum	3	6											9	
Others (see below)	15	8	2	1		1							27	1
<b>Totals, all species</b>	<b>239</b>	<b>73</b>	<b>35</b>	<b>26</b>	<b>15</b>	<b>14</b>	<b>15</b>	<b>9</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>435</b>	<b>47</b>
<b>Per 10 acres/4 ha.</b>	<b>956</b>	<b>292</b>	<b>140</b>	<b>104</b>	<b>60</b>	<b>56</b>	<b>60</b>	<b>36</b>	<b>16</b>	<b>4</b>	<b>8</b>	<b>8</b>	<b>1740</b>	<b>188</b>

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Others:

- Ardisia colorata 2x1'
- Artocarpus sp. indet. 2x2'
- Barringtonia curanii 1x1', 1x3'
- B. lanceolata 2x1', 1x2'
- Buchanania sessilifolia 1x1'
- Cratoxylon sp. indet. 1x4'
- Elaeocarpus stipularis 1x6'
- Evodia punctata 1x2'
- Leguminosae indet. 1x1'
- Linociera pluriflora 1x1', 1x2'
- Lophopetalum javanicum 1x1', 1x3'
- Meliosma sumatrana 1x1'
- Mesua macrantha 1x1'
- Nauclea subdita 1x1'
- Neesia altissima 1x1', 2x2'
- Pleiocarpidia sandakanenica 1x1', 1x2'
- Tiliaceae indet. 1x1'

Appendix 3 - Table 3

Stand Table RP. 353, Kalabakan Forest Reserve (Luasong) Area 10 acres (4. ha.)

Species	Number of trees in Size Classes												Totals	Totals 6'
	10	20	30	39	48	58	68	78	87	97	107	116		
<i>Dipterocarpaceae</i>	131	53	44	31	14	20	15	13	5	3	-	2	331	58
<i>Dryobalanops keithii</i>	10	2	2	1	2	-	-	1	5	3	-	2	18	1
<i>Dr. lanceolata</i>	15	8	3	5	3	2	4	6	6	-	1	4	54	20
<i>Parashorea malaanonan</i>	17	7	3	3	-	1	3	1	3	-	-	4	39	9
<i>P. smythiesii</i>	6	1	1	1	-	-	-	1	-	-	-	-	9	1
<i>P. tomentella</i>	-	1	1	-	-	-	-	1	1	1	-	1	2	1
<i>Shorea leprosula (Ru)</i>	2	2	2	2	2	-	-	1	1	1	-	-	13	3
<i>S. leptoclados (Ru)</i>	22	10	6	1	-	3	-	-	-	-	-	-	42	3
<i>S. oleosa (Ru)</i>	-	2	4	-	1	-	-	-	-	-	-	-	2	-
<i>S. ovalis (Ru)</i>	2	2	1	-	1	-	-	-	-	-	-	-	9	1
<i>S. parvifolia (Ru)</i>	2	3	1	1	-	-	-	-	1	-	-	-	8	1
<i>S. pauciflora (Ru)</i>	1	1	-	-	1	-	1	-	-	-	-	-	4	1
<i>S. smithiana (Ru)</i>	5	2	-	-	1	-	1	-	-	-	-	-	7	1
<i>Cotylebomium malayanum</i>	5	3	-	1	-	-	-	-	-	-	-	-	9	1
<i>Vatica spp (3)</i>	1	1	-	1	-	-	-	-	-	-	-	-	2	-
<i>Shorea guiso (SB)</i>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<i>S. leptoderma (SB)</i>	4	1	-	1	-	-	-	-	-	-	-	-	3	-
<i>S. seminis (SB)</i>	-	3	-	-	-	-	-	-	-	-	-	-	3	-
<i>Shorea sp. indet. (SB)</i>	4	2	-	-	-	-	-	-	-	-	-	-	7	-
<i>Dipterocarpus acutangulus</i>	22	6	4	1	2	3	-	-	1	-	-	1	45	5
<i>D. caudiferus</i>	1	2	1	1	2	-	-	-	1	-	-	1	3	1
<i>D. exalatus</i>	5	2	1	3	1	-	-	-	-	-	-	-	15	2
<i>D. verrucosus</i>	2	3	-	1	1	-	-	-	-	-	-	-	7	-
<i>Hopea nervosa</i>	1	1	3	2	1	-	1	1	3	-	-	-	25	7
<i>H. sangal</i>	6	6	3	2	1	2	1	1	3	-	-	-	1	1
<i>Shorea sp. indet. (R1)</i>	1	1	1	2	1	2	1	1	3	-	-	-	15	1
<i>S. acuminatissima (R1)</i>	3	1	1	1	-	-	-	-	-	-	-	-	1	1
<i>S. gibbosa (R1)</i>	1	1	1	1	-	-	-	-	-	-	-	-	1	1
<i>S. multiflora (R1)</i>	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<i>S. agami (An)</i>	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Appendix 3 - Table 3 (continued.....)

Species	Number of trees in Size Classes												Totals	Totals 6'			
	Girth (ft.) 10	20	30	39	48	58	68	78	87	97	107	116					
Non-Dipterocarpaceae																	
<i>Anthocephalus chinensis</i>	1																1
<i>Aporosa sp. indet.</i>	2																2
<i>Aporosa grandistipulata</i>	1			1	2												2
<i>Artocarpus sp. indet.</i>	1		1														1
<i>Artocarpus anisophyllus</i>		1	1														1
<i>Baccaurea stipulata</i>	46	3	1	1													48
<i>B. lanceolata</i>	3			1													4
<i>B. puberula</i>	5	2	1														8
<i>Brownlowia peltata</i>	5		1														6
<i>Chaetocarpus castanocarpus</i>			1				1										2
<i>Cleistanthus sp. indet.</i>	1																1
<i>Cynometra elmeri</i>	7	2															9
<i>Dialium indum</i>				1													1
<i>Dillenia sp. indet.</i>	5	2															7
<i>Diospyros spp.</i>	14	5	2	3													24
<i>Eugenia spp.</i>	46	19	8	1	1												75
<i>Euphoria malaiensis</i>	3																3
<i>Eurycoma longifolia</i>	4	7		5	1	3											20
<i>Eusideroxylon zwageri</i>	1	1		1			1										5
Fagaceae	16	6		1													28
<i>Mallotus penangensis</i>	25	3	1	1													30
Lauraceae	82	26	9	8		2											127
<i>Ochanostachys amentacea</i>	6	4	3	1	2												16
<i>Indeterminata (1.5.1971)</i>	37	7	1	2			1										50
Others (see below)	98	20	11	2	5	1	1	3									141
<b>Totals</b>	<b>686</b>	<b>230</b>	<b>122</b>	<b>89</b>	<b>43</b>	<b>38</b>	<b>28</b>	<b>27</b>	<b>6</b>	<b>1</b>	<b>8</b>	<b>1298</b>	<b>128</b>				

35a

/ Others

Others:

Anacardiaceae	5x1', 1x2'	Gironniera nervosa	5x1', 2x3', 1x6'
Anonaceae	3x2x1', 7x2', 1x3'	Heritiera simplicifolia	1x3'
Burseraceae	8x1', 2x3'	Intsia palembanica	1x5', 2x8'
Duabanga moluccana	1x4'	Irvingia malayana	1x8'
Ficus sp.indet	2x1'	Mallotus sp.indet.	8x1', 1x3'
Fordia sp.indet	1x2'	Meiogyne virgata	1x5'
Garcinia sp.indet	4x1'	Meliaceae	8x1', 3x2', 2x5'
		Myristicaceae	15x1', 2x3'

Neonauclea sp.	1x1'
Parishia sp.	3x1', 1x2'
Sapotaceae	9x1', 3x2', 1x4'
Saraca sp.indet.	1x7'
Scaphium longipetiolatum	1x2', 1x5'
Sindora sp.	4x1, 1x2, 2x3'
Sympetalandra borneensis	2x1', 1x3'

Appendix 3 - Table 4

Stand Table RP.268 Mandalom Forest Reserve Area 6 acres (2.4 ha.)  
(Seven plots combined)

Species	Number of trees in Size Classes												Totals	Totals 6'			
	Girth (ft.) Diam. (cm.)	1	2	3	4	5	6	7	8	9	10	11			12		
<u>Dipterocarpaceae</u>																	
<i>Parashorea malaanonan</i>	17	6	4	-	-	-	-	1	1	10	10	11	12	28	1		
<i>Shorea macroptera</i> (Ru)	-	-	-	-	-	-	1	1	1	-	-	1	-	1	1		
<i>S. parvifolia</i> (Ru)	3	-	1	-	-	1	-	-	-	-	-	1	1	7	3		
<i>S. pauciflora</i> (Ru)	1	-	-	3	-	-	-	-	-	-	-	-	-	4	3		
<i>S. ovalis</i> (Ru)	-	2	2	2	-	-	-	-	1	1	1	-	-	10	-		
<i>S. smithiana</i> (Ru)	1	-	1	1	1	1	-	-	-	-	-	-	-	1	2		
<i>Dryobalanops lanceolata</i>	-	-	1	1	1	1	-	-	-	-	-	-	1	4	2		
<i>Shorea exelliptica</i> (SB)	2	-	-	3	2	-	1	-	-	1	1	1	3	18	11	36	
<i>S. laevis</i> (SB)	1	-	-	-	-	-	-	-	2	-	-	-	-	2	-		
<i>Dipterocarpus warbugii</i>	1	-	-	1	1	-	-	-	1	1	-	-	1	7	4		
<i>Shorea acuminatissima</i> (Ri)	1	-	-	-	1	-	-	-	-	-	-	-	-	2	-		
<i>S. faguetiana</i> (Ri)	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2		
<i>S. patoiensis</i> (Ri)	1	1	1	1	1	1	1	1	1	1	1	1	1	4	4		
<i>Hopea nervosa</i>	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2		
<i>Vatica sp. indet.</i>														1	1		
<i>Anisoptera laevis</i>														1	1		
<u>Non-Dipterocarpaceae</u>																	
<i>Adenanthera sp. indet.</i>	4	-	-	1	1	1	1	1	1	1	1	1	1	5	-		
<i>Alangium javanicum</i>	9	2	1	1	1	1	1	1	1	1	1	1	1	4	4		
<i>Alphitonia incana</i>	1	4	1	-	1	-	-	-	-	-	-	-	-	15	15		
<u>Anacardiaceae</u>	10	1	-	1	1	-	-	1	1	1	1	1	1	5	5	-2	
<i>Anonaceae</i>		14	4	1	1	1	1	1	1	1	1	1	1	30	3		
<i>Antiaris toxicaria</i>	5	1	1	1	1	1	1	1	1	1	1	1	1	3	3		
<u>Burseraceae</u>	3	1	2	3	1	1	2	2	1	1	2	1	1	15	3		
<i>Dillenia borneensis</i>	9	1	1	1	1	1	1	1	1	1	1	1	1	5	5		
<i>Diospyros spp.</i>		6	1	1	1	1	1	1	1	1	1	1	1	16	2		
<i>Dyera costulata</i>	-	-	-	-	-	-	-	-	1	-	-	-	1	2	2		
<i>Ervatamia macrocarpa</i>	31	20	15	6	5	2	2	2	1	-	-	-	1	81	4		
<i>Eugenia spp.</i>	9	3	-	-	3	1	1	1	1	1	1	1	1	17	2		

Species	Number of trees in Size Classes												Totals	Totals 6'	
	Girth (ft.)	1	2	3	4	5	6	7	8	9	10	11			12
Diam (cm.)	10	20	30	39	48	58	68	78	87	97	107	116	126		
Fagaceae	9	15	6	7	1	1	-	-	-	1	1	-	-	41	3
Glochidion sp. indet.	2	1	3	.	1	1	.	.	.	.	.	.	.	6	1
Heritiera sp. indet.	2	-	-	-	1	1	.	.	.	.	.	.	.	4	1
Lauraceae	12	4	3	-	2	-	-	-	1	-	-	-	-	22	1
Mallotus penangensis	1	2	1	-	-	-	-	-	-	-	-	-	-	4	-
Meliaceae	13	5	1	1	.	.	.	.	.	.	.	.	.	20	-
Myristicaceae	5	5	3	-	-	1	-	-	-	-	-	-	-	14	1
Pentace spp.	40	43	4	6	1	1	-	-	-	-	-	-	-	94	-
Sapotaceae	3	3	-	-	1	1	-	-	-	-	-	-	-	8	1
Talauma sp. indet.	1	-	2	1	.	.	.	.	.	.	.	.	.	4	-
Tristania sp. indet.	7	5	-	1	.	.	.	.	.	.	.	.	.	12	-
Vitex sp.	2	5	1	-	.	.	.	.	.	.	.	.	.	8	-
Indeterminate (1.5-71)	7	2	4	1	-	1	1	-	-	-	-	-	-	16	2
Others (see below)	33	21	8	7	1	3	-	1	1	-	-	-	-	75	5
Totals, all species	247	173	70	49	28	14	9	7	10	3	4	8	8	622	55
Per 10 acres/4 ha.	411	289	117	82	47	23	15	11	17	5	7	13	13	1037	91

Others:

Albizia sp. indet. 1x1', 1x3'	Evodia sp. indet. 1x1', 1x2'	Memecylon spp. 5x2'
Ardisia colorata 2x1'	Fordia sp. indet. 3x1'	Nephelium sp. indet. 2x1', 1x2'
Artocarpus spp 2x1', 2x4'	Garcinia sp. indet. 1x1', 1x2'	Parinari sp. indet. 2x3, 2x4'
Barringtonia spp 1x1', 1x2', 1x8'	Geunisia pentandra 1x3', 1x5'	Pternandra sp. indet. 2x1'
Canarium odontophyllum 2x1'	Koompassia malaccensis 1x4', 1x6'	Scaphium longipetiolatum 1x1, 2x2, 1x3'
Cynometra elmeri 1x1', 1x2'	Kopsia sp. indet. 2x1', 2x2'	Xanthophyllum sp. indet. 2x1' 1x2'
Euphorbia sp. indet. 2x1', 1x2', 1x4'	Lophopetalum sp. indet. 1x2', 1x4'	
One tree only	Six feet class	
Baccaurea sp.	Artocarpus anisophyllum	
Callophyllum sp	Sindora sp.	
Dehaasia incrassata		
Duabanga moluccana	Nine feet class	
Koilocarpus longifolium	Koompassia excelisa	
Neesia sp.		
Paranephelium nitidum		
Pterocymbium sp.		



Stand Table RP.17 Sepilok Forest Reserve Area 4.5 acres (1.8 ha.)

Species	Number of trees in Size Classes												Totals	Totals 6'+
	Girth (ft.) 1	2	3	4	5	6	7	8	9	10	11	12		
	Diam. (cm.) 10	20	30	39	48	58	68	78	87	97	107	116	Totals	Totals 6'+
<u>Dipterocarpaceae</u>														
Dipterocarpus acutangulus	16	9	8	2	3	1	3	5	5	5	1	2	60	22
D.confertus	3	-	1	1	-	2	-	2	1	2	1	-	7	3
D.grandiflorus	12	4	3	1	-	2	-	1	1	-	-	-	23	3
Hopea beccariana	13	16	6	3	1	1	-	-	-	-	-	-	38	-
H.semicuneata	-	-	1	-	1	-	-	-	-	-	-	1	5	1
Parashorea malaanonan	-	-	-	-	-	-	-	-	-	-	-	1	1	1
P.tomentella	-	-	-	-	-	-	1	1	-	-	-	-	1	1
Shorea argentifolia (Ru)	-	-	1	1	2	1	2	-	-	-	-	-	24	2
S.beccariana (Ru)	3	10	6	3	-	-	1	1	-	1	-	-	16	3
S.macroptera (Ru)	9	1	1	2	2	-	1	1	1	-	-	-	15	4
S.mecistopteryx (Ru)	4	2	3	1	1	1	2	1	-	-	-	-	4	1
S.parvifolia (Ru)	-	1	2	2	1	1	-	-	-	-	-	-	17	2
S.smithiana (Ru)	6	2	4	2	1	2	-	-	-	-	-	-	3	-
Vatica micrantha	1	1	1	-	-	-	-	-	-	-	-	-	4	-
V.oblongifolia	2	1	1	-	-	-	-	-	-	-	-	-	4	-
V.papwana	1	2	1	-	-	-	-	-	-	-	-	-	4	-
Shorea virescens (An)	-	-	1	-	-	-	-	-	-	1	1	1	1	-
S.faguetiana (Ri)	1	3	1	-	-	-	-	-	-	-	1	1	7	2
S.multiflora (Ri)	35	8	10	3	1	-	-	-	-	-	-	-	57	-
S.foxworthyi (SB)	1	-	-	-	1	-	-	-	1	-	-	-	2	1
S.glaucescens (SB)	2	-	2	-	-	-	-	-	1	-	-	-	5	-
<u>Non-Dipterocarpaceae</u>														
(in order of families)														
Alangium ebenaceum	5	3	-	-	-	-	-	-	-	-	-	-	8	-
Gluta renghas	17	9	4	-	-	-	-	-	-	-	-	-	30	-
Melanorrhoea wallichii	4	3	4	1	4	2	-	-	-	-	-	-	18	2
Anacardiaceae misc (8)	9	-	4	2	-	-	-	-	-	-	-	-	15	-
Anonaceae (4)	4	1	1	1	1	-	-	-	-	-	-	-	7	-
Dyera costulata	-	1	-	1	-	-	1	-	-	-	-	-	3	1

Appendix 3 - Table 5 (continued.....)

Species	Number of trees in Size Classes											Totals	Totals 6'	
	Girth (ft.) 1	2	3	4	5	6	7	8	9	10	11			12'
Diam. (cm.) 10	20	30	39	48	58	68	78	87	97	107	116	121		
Dacryodes laxa	7	1											8	
D.rugosa	2	3											5	
Burseraceae misc. (4)	5	1											6	
Lophopetalum beccarianum	27	7		2	1								41	
Dillenia excelsa	2	1	2										5	
Diospyros spp. (4)	10	2											12	
Elaeocarpus spp (2)	2	1											5	
Chaetocarpus castanocarpus	5	3		1									10	
Moultonianthus leembrugianus	14	5		1									21	
Tapoides villemillii	20	11		1									31	
Euphorbiaceae misc.(17)	30	10		1									41	
Euphorcarpus conocarpus	3	4		2									14	
Lithocarpus conocarpus	6	4		1					1				11	
Fagaceae misc.(5)	17	4		1					1				23	
Flacourtiaceae (6)	14	4											21	
Persea bancana	9	6		1									15	
Lauraceae misc.(9)	11	4		1									13	
Barringtonia sarcostachys	4	2		1									11	
B.scortechinii	9	3		1									13	
Pternandra verruculosa	9	1											10	
Meliaceae (9)	4	1											5	
Moraceae (4)	17	8		2									27	
Myrticaceae (9)	41	15		2									74	
Eugenia spp. (16)	14	2											16	
Colubrina anomala	13	9											22	
Acronychia laurifolia	32	10											51	
Ganua kingii	11	3											20	
Sapotaceae misc.(5)	7	5							1				12	
Microcos cinnamomifolia	4	1											4	
M.crassifolia	30	1											31	
Pentace borneensis	13	7											28	
Teijsmanniodendron glabrum		2											4	
T.simplificoides														

Appendix 3 - Table 5 (continued.....)

Species	Number of trees in Size Classes												Totals
	1	2	3	4	5	6	7	8	9	10	11	12	
Girth (ft.)	10	20	30	39	48	58	68	78	87	97	107	116	Totals
Diam. (cm.)	10	20	30	39	48	58	68	78	87	97	107	116	Totals
Others (see below)	94	23	8	4	4								133
Totals, all species	635	238	129	37	28	14	9	11	8	9	3	4	1125
per 10 acres/4 ha.	1411	529	287	83	62	31	20	24	18	20	7	8	2500

Others:

*Acioa heteropetala* 1x1', 1x2', 1x4'  
*Adenanthera pavonina* 1x3'  
*Angelisia spendens* 1x1', 1x3'  
*Aquilaria malaccensis* 1x1', 1x2', 1x3'  
*Bhesa paniculata* 1x1'  
*Crypteronia griffithii* 1x1', 2x2'  
*Dialium indum* 2x1'  
*Durio grandiflorus* 2x1', 1x2'  
*Euphoria* sp. indet. 1x1', 3x2', 1x3'  
*Garcinia benthamiana* 4x1', 1x2', 1x3'  
*G. moyleyana* 2x1', 1x3'  
*G. nervosa* 1x1', 1x3'  
*Gardenia tubifera* 2x1', 1x2'  
*Gironniera nervosa* 1x1'  
*G. parvifolia* 1x1', 1x3'  
*Gonystylus consanguineus* 2x1'  
*Helicopsis velutina* 1x1'  
*Heritiera javanica* 1x1'  
*H. simplicifolia* 2x1', 1x2'  
*Lophopetalum javanicum* 1x2'  
*Memecylon beccarianum* 3x1'  
*M. edule* 1x1'

*Mesua macrantha* 5x1', 4x2', 1x4', 2x5'  
*Nauclea* sp. indet. 3x1', 1x2', 1x4'  
*Nephelium beccarianum* 3x1', 1x2'  
*Nephelium* sp. indet. 1x1'  
*Ochanostachys amentacea* 1x5'  
*Pometia pinnata* 1x2'  
*Prunus grisea* 1x1'  
*Pternandra echinata* 3x1'  
*Rhodammia cinerea* 3x1'  
*Sarcotheca acuminata* 1x1'  
*S. glauca* 2x1'  
*Scaphium affine* 4x1', 1x2'  
*Scaphium* sp. indet. 1x5'  
*Sindora coriacea* 2x1', 1x2', 1x4'  
*Stemenuurus grandiflorus* 5x1'  
*S. secundiflorus* 3x1'  
*Symplocos* sp. indet. 17x1', 1x2'  
*Talauma gitingensis* 7x1'  
*Timonius compressicaulis* 1x2'  
*Timonius* sp. indet. 2x1'

Appendix 4

Completely Enumerated Plots

- Table 1      Silam 1967 Felling Area  
5 Plots, 3-4 acres (1.4 ha.)
- Table 2      Tangah Nipah, Lahud Datu  
4 Plots, 4 acres (1.6 ha.)
- Table 3      Silabukan F.R. RP 271 C and D  
2 acres (0.8 ha.)







Appendix 4 - Table 1 (continued.....)

Species	Girth (Ft.) Diam. (Cm.)	Number of Trees by Size Classes										Totals		
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87				
<i>Pterospermum elongatum</i>		2	-	-	-	1								3
<i>Ptychopyxis arborea</i>		1	2	-	-	-	-	-	-	-	-	-	-	3
<i>Saraca palembanica</i>		7	1	-	-	-	-	-	-	-	-	-	-	8
<i>Sagarea lanceolata</i>		-	1	-	-	-	-	-	-	-	-	-	-	1
<i>Semecarpus cuneiformis</i>		1	-	-	-	-	-	-	-	-	-	-	-	1
<i>Sindora irpicina</i>		1	1	-	-	-	-	-	-	-	-	-	-	2
<i>Spathiostemon javensis</i>		2	1	-	1	-	-	-	-	-	-	-	-	4
<i>Sterculia rubiginosa</i>		2	1	-	-	-	-	-	-	-	-	-	-	3
<i>Sympetalandra borneensis</i>		-	1	-	-	-	-	-	-	-	-	-	-	2
<i>Symplocos</i> sp.		1	-	-	-	-	-	-	-	-	-	-	-	2
<i>Talauma</i> sp.		-	-	-	-	1	-	-	-	-	-	-	-	2
<i>Teijsmanniodendron kolophyllum</i>		8	-	4	-	-	-	-	-	-	-	-	-	24
Unidentified		-	1	-	-	-	-	-	-	-	-	-	-	1
Totals		298	127	49	36	13	8	7	13	87	561			

Trees of over 8 feet girth are as follows:

Parashorea malaamonan: 9, 9, 10, 14, 13, 13, 13  
 Shorea leprosula: 12  
 Shorea leptoclados: 10  
 Shorea guiso: 9, 9  
 Dialium platysepalum: 10  
 Sympetalandra borneensis: 9



Appendix 4 - Table 2

Stand Table Tangah Nipah, Lahud Datu, 4 Plots of 0.4 Ha.  
 totalling 4 acres (1.6 Ha.) Summed Data.

Species	Girth (Ft.)		Number of Trees by Size Classes											Totals
	10	20	1	2	3	4	5	6	7	8	9 +			
Diam. (Cm.)	10	20	30	39	48	58	68	78	87	9 +	Totals			
Parashorea malsanonan	9	5	1	2	1	2	1	3	1	1	25			
Shorea argenteifolia Ru	4	2	-	1	-	-	2	-	-	-	9			
Shorea leptosula Ru	3	2	-	-	-	1	-	-	-	-	6			
Shorea leptoclados Ru	-	1	-	-	-	-	-	-	-	-	1			
Shorea parvifolia Ru	3	-	1	-	-	1	-	-	-	-	4			
Shorea pauciflora Ru	-	-	-	-	-	1	-	-	-	-	1			
Shorea isoptera SB	1	-	-	-	-	1	-	-	-	-	1			
Shorea guiso SB	1	-	-	-	-	1	-	-	-	-	2			
Shorea superba SB	-	-	-	-	-	-	-	1	-	-	1			
Shorea hopefolia Ri	-	1	-	-	-	-	-	-	-	-	1			
Shorea bracteolata An	3	-	-	-	-	1	-	-	-	-	4			
Vatica sp.	1	-	-	-	-	-	-	-	-	-	1			
Aglaia affinis	5	1	-	-	-	-	-	-	-	-	6			
Aglaia spp indet	10	1	2	-	-	-	-	-	-	-	15			
Alseodaphne fonkinensis	1	1	1	-	-	-	-	-	-	-	2			
Anonaceae indet	3	1	-	-	-	-	-	-	-	-	4			
Aglaia odoratissima	1	-	-	-	-	-	-	-	-	-	1			
Aporosa grandistipulata	1	-	1	-	-	-	-	-	-	-	2			
Ardisia elliptica	1	-	-	-	-	-	-	-	-	-	1			
Artocarpus kemande	1	-	-	-	-	-	-	-	-	-	1			
Artocarpus	-	-	-	-	-	-	-	-	-	-	1			
Baccaurea lanceolata	4	-	-	-	-	-	-	1	-	-	4			
Baccaurea stipulata	10	-	-	-	-	-	-	-	-	-	10			
Barringtonia sp	1	-	-	1	-	-	-	-	-	-	2			
Beilschmedia assamica	5	2	1	1	-	-	-	-	-	-	9			
Blumeodendron kurzii	3	1	1	-	-	-	-	-	-	-	5			
Brownlowia stipulata	5	3	2	-	-	-	-	-	-	-	10			
Buchanania insignis	-	1	1	-	-	-	-	-	-	-	2			
Buchanania lucida	-	1	1	-	-	-	-	-	-	-	1			
Buchanania sessilifolia	1	-	-	-	-	-	-	-	-	-	1			
Calophyllum sp	-	-	1	-	-	-	-	-	-	-	1			

Appendix 4 - Table 2 (continued.....)

Species	Girth (Ft.)		Number of Trees by Size Classes										Totals			
	Diam (Cm.)		1	2	3	4	5	6	7	8	9					
Canarium denticulatum					1											2
Canarium odontophyllum					1											1
Canarium decumanum					1											1
Canarium hirsutum																1
Canthium confertum																1
<del>Canthium confertum</del>																1
Cinnamomum iners								1								1
Cryptocarya crassinervia																1
Cynometra elmeri			5	1	1			2								1
Dacryodes macrocarpa			1											1		1
Dehaasia caesia																1
Dehaasia incrassata			1		1											1
Dialium platysepalum																1
Dialium sp								1								1
Dillenia excelsa			5	2												7
Diospyros cauliflora			1	1	1		2									5
Diospyros curranii			1		1											2
Diospyros diepenhorstii			1		1											2
Diospyros discocalyx			1		1											2
Diospyros elliptifolia			3	3	1											7
Diospyros elmeri			3	1	1											5
Diospyros hallierii			1	1	1		1									5
Diospyros macrophylla			1	1	1			1								5
Diospyros perfida			1	1	1											4
Diospyros sumatrana			1	1	1											4
Diospyros toposioides			4	3	1		1									9
Diospyros tuberculata			3	1	1											5
Diospyros spp (2)			5	1	1											7
Drypetes macrophylla			2		1											3
Drypetes prunifera					1											1
Dysoxylum alliaceum			1													1
Dysoxylon pachyrache			2													2
Dysoxylon sp																1



Appendix 4 - Table 2 (continued....)

Species	Girth (Ft.)		Number of Trees in Size Classes											Totals
	Diam. (Cm.)		1	10	20	2	3	4	5	6	7	8	9	
<i>Lophopetalum javanicum</i>					1									1
<i>Mangifera cf macrocarpa</i>														1
<i>Melogyne virgata</i>					4									4
Meliaceae indet					2									2
<i>Mesua macrantha</i>					1									1
<i>Microcos antidesmifolia</i>					8									8
<i>Microcos elmeri</i>					1									1
<i>Microcos stylocarpa</i>					3									3
Myristicaceae indet					1									1
<i>Nauclea</i> sp					1									1
<i>Neesia altissima</i>					1									1
<i>Nephellium mutabile</i>					1									1
<i>Nephellium</i> sp					1									1
<i>Neosortechinia sumatransis</i>					1									1
<i>Neouvaria acuminatissima</i>					6									6
<i>Neouvaria</i> sp					1									1
<i>Notaphoebe obovata</i>					1									1
<i>Orophea myriantha</i>					13									13
<i>Otophora glandulosa</i>					1									1
<i>Paranephellium mitidum</i>					8									8
<i>Payena obscura</i>					1									1
<i>Palagium sericeum</i>					1									1
<i>Parartocarpus venenosus</i>					1									1
<i>Polyalthia lateriflora</i>					8									8
<i>Polyalthia subcordata</i>					3									3
<i>Plandhonia valida</i>					1									1
<i>Pometia alnifolia</i>					2									2
<i>Pometia pinnata</i>					1									1
<i>Pseudo-uvaria panattonensis</i>					1									1
<i>Ptychopyxis arborea</i>					10									10
<i>Pyramidantha prismatica</i>					2									2
<i>Ryparosa cf acuminata</i>					4									4
<i>Sagarea lanceolata</i>					3									3

Appendix 4 - Table 2 (continued.....)

Species	Girth (Ft.)		Number of Trees in Size Classes											Totals		
	Diam. (Cm.)		1	2	3	4	5	6	7	8	9	10				
<i>Sagarea myriantha</i>			2	-	-	-	-	-	-	-	-	-	-	-	-	2
<i>Sandoricum maingayi</i>			1	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Saraca palembanica</i>			9	1	-	-	-	-	-	-	-	-	-	-	-	10
<i>Sindora</i> sp			1	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Sympetalandra borneensis</i>			1	1	-	-	1	-	-	-	-	-	-	-	-	4
<i>Stemonœuros scorpiodes</i>			-	1	-	-	-	-	-	-	-	-	-	-	-	1
<i>Symplocos celastriifolia</i>			2	-	-	-	-	-	-	-	-	-	-	-	-	2
<i>Symplocos fasciculata</i>			-	1	-	-	-	-	-	-	-	-	-	-	-	1
<i>Symplocos laurina</i>			2	-	-	-	-	-	-	-	-	-	-	-	-	2
<i>Talauma</i> sp			1	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Terminalia</i> sp			-	-	1	-	-	-	-	-	-	-	-	-	-	1
<i>Viburnum aplificatum</i>			1	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Xanthophyllum affine</i>			1	4	-	-	-	-	-	-	-	-	-	-	-	5
<i>Xanthophyllum tenue</i>			-	1	-	-	-	-	-	-	-	-	-	-	-	1
<i>Xanthophyllum</i> sp			-	1	-	-	-	-	-	-	-	-	-	-	-	1
Unidentified (6)			16	3	1	-	-	-	-	-	-	-	-	-	1	21
Totals			322	113	54	18	13	13	6	10	6	58	68	78	87	555

Trees of over 8 feet girth are as follows:

*Parashorea malaanonan* - 13'  
*Mangifera cf macrocarpa* - 11'  
*Diospyros discocalyx* - 10'  
 Unidentified - 9'  
*Dialium platysepalum* - 9'  
*Ficus benjamina* - 18'



Species	Number of Trees in Size Classes										Totals
	10	20	30	30	4	5	6	7	8	9	
Flacourtiaceae indet	1										1
Fordia sp	1										1
Litsea sp	6	1	1		2		1				11
Mangifera sp		2					1				1
Meiogyne virgata	7										9
Memecylon costatum	1										1
Memecylon sp	1										1
Mischocarpus sundaicus			1								1
Myristicaceae			1								1
Orophea mynantha	32	3			1						35
Orophea sp	1	1									2
Otophora sp										1	1
Parkia sp											1
Payena sp	1	1									2
Planchonia valida	2	1	1		1						5
Polyalthia costigera					1						1
Polyalthia sp	9	1	1		1						12
Pterospermum sp										2	2
Semecarpus sp	1										1
Tristiropsis					1						1
Vitex pubescens											1
Walsura sp		2									2
Xanthophyllum sp	1	1									2
Unknown	2									3	5
Totals	148	68	30	19	12	6	3	5	8	299	

Trees larger than 9 feet are: Parkia sp. 12'; Cynometra elmeri 12' ;  
 Eugenia sp 12'; Unknown at 10 and 11'

Appendix 5

Species Coincidence Tables

- Table 1 RP 228 Segaluid-lokan F.R.  
Distribution in Sub-Plots.
- Table 2 RP 228 Segaluid-lokan F.R.  
Numbers of Trees in Sub-Plots
- Table 3 Number of Plots Species Coincident  
Segaluid-lokan F.R.
- Table 4 Number of Plots Species Coincident  
Kuamut F.R.
- Table 5 Coincidence of species RP 350  
Kuamut F.R.
- Table 6 Coincidence of species RP 307A  
Kalabakan F.R.
- Table 7 Coincidence of species RP 303  
Kalabakan F.R.
- Table 8 Distribution Major Species  
Segaluid-lokan F.R.
- Table 9 Distribution Major species  
Kuamut F.R.
- Table 10 Booking Plots with Tree Numbers  
Segaluid-lokan F.R.
- Table 11 Booking Plots with Tree Numbers  
Kuamut F.R.



Appendix 5 - Table 1

RP. 228 Segaliud-Ilokan F.R. Distribution of Common Species in 1 Hectare Sub-plots

Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Total			
Parashorea tomentella	10	4	5	5	8	6	5	8	10	6	5	1	10	7	4	7	3	6	4	12	1	1	6	7	7	7	3	8	5	6	4	2	10	8	6	8	4	5	5	7	1	5	4	5	3	5	3	4	4	2	5	274		
Parashorea malaanonan	1	1	-	-	1	1	-	-	-	-	-	1	1	-	1	-	1	-	4	12	-	-	2	7	7	1	3	8	5	6	4	2	10	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	15					
Shorea																																																						
(Rubroshorea)																																																						
S. almon	-	-	-	-	-	1	1	-	-	-	-	2	-	-	-	-	1	-	1	-	-	-	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	
S. argenteifolia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
S. leproslia	-	-	-	-	-	-	-	-	-	-	-	-	1	10	1	4	1	1	9	8	5	5	6	1	3	4	2	4	3	5	5	3	3	4	5	3	3	4	5	3	3	2	2	2	2	2	2	2	2	2	2	2	53	
S. leptocladus	11	3	2	11	5	3	6	8	8	7	4	2	5	10	1	4	1	1	9	8	5	6	1	7	4	2	4	3	5	5	3	4	5	3	4	5	3	4	5	3	2	2	2	2	2	2	2	2	2	2	2	90		
S. mecostopteryx	2	-	2	4	1	2	5	1	6	3	2	5	3	1	2	4	-	4	1	-	4	-	1	-	-	1	2	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3		
S. parvifolia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3			
S. pauciflora	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3			
S. smlthiana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11			
S. waltonii	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24			
(Richea)																																																						
S. acuminatissima	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3		
S. gibbosa	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17			
S. hopelifolia (Selangan Batu)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22			
S. lasoptera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29			
S. superba (Anthoshorea)	-	-	1	-	-	1	-	-	-	1	-	-	1	-	-	-	10	-	1	-	1	-	12	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3		
S. agami	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170			
Dryobalanops lanceolata	2	10	6	4	4	4	6	8	4	2	3	1	5	3	3	7	6	2	3	2	2	1	3	5	2	1	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	105		
Dipterocarpus caudiferus	1	1	8	2	4	1	4	4	3	2	3	1	1	4	1	7	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Dipterocarpus gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Anthoptera costata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
Hopea beccariana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
Hopea nervosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
Hopea sangal	2	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5			
Non Dipterocarpaceae																																																						
Eusideroxylon zwageri	1	-	1	-	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	49
Pterospermum elongatum	-	-	-	-	-	-	-	-	-	2	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32
Pentace polyantha	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
Stympetalandra borneensis	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11		
Samanea lanceolata	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11			
Planchonia valida	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9		
Pometia pinnata	-	-	-	2	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9		
Dialium indum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9		
Nephelium mutabile	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9		
Koordersiodendron pinnatum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8		
Howellium foetidum	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8		
Total trees in sub-plot	35	26	36	32	31	34	51	34	32	26	25	27	38	30	14	30	26	32	30	30	26	34	27	29	26	29	25	35	32	19	27	34	32	30	28	24	28	28	25	27	21	26	31	29	39	30	26	25	36	25	28	Total		

Appendix 5 - Table 1

In addition to the species given in Table 17 of the text, the following 91 species had individuals of 5 feet girth or over in RP.228. They may, therefore, at some stage, be considered as of some silvicultural interest as potential timber producers. However, many are probably species which very rarely reach large size.

(a) More than 5 individual stems (Numbers in brackets)

<i>Amoora malaccensis</i> (6)	<i>Nephelium mutabile</i> (9)
<i>Dialium indum</i> (9)	<i>Pentace polyantha</i> (12)
<i>Diospyros curranii</i> (7)	<i>Planchonia valida</i> (9)
<i>D. macrophylla</i> (9)	<i>Pometia pinnata</i> (9)
<i>Homalium foetidum</i> (9)	<i>Saraca lanceolata</i> (10)
<i>Intsia palembanica</i> (8)	<i>Sympetalandra borneensis</i> (11)
<i>Koordersiodendron pinnatum</i> (8)	<i>Terminalia citrina</i> (6)

(b) Two to five individual stems

<i>Alangium ebenaceum</i>	<i>Hydnocarpus pinguis</i>
@ <i>Anthocephalus chinensis</i>	<i>H. sumatrana</i>
<i>Antiaris toxicarius</i>	<i>Koompassia excelsa</i>
<i>Artocarpus anisophylleus</i>	<i>Lithocarpus gracilis</i>
<i>A. tamaran</i>	<i>L. meijeri</i>
<i>Canarium odontophyllum</i>	<i>Litsea firma</i>
<i>Carallia borneensis</i>	<i>Lophopetalum javanicum</i>
<i>Diploknema sebifera</i>	@ <i>Macaranga pruinosa</i>
<i>Dracontomelon puberulum</i>	<i>Meliosma lanceolata</i>
<i>Durio testudinarium</i>	<i>Parinari corymbosa</i>
<i>Elmerillia mollis</i>	<i>Persea sp. indet.</i>
@ <i>Endospermum peltatum</i>	@ <i>Pterocymbium tubulatum</i>
<i>Eugenia barringtonioides</i>	<i>Sandoricum maingayi</i>
<i>E. nitida</i>	<i>Scaphium longipetiolatum</i>
@ <i>Geunsia pentandra</i>	<i>Sindora irpicina</i>
@ <i>Glochidion rubrum</i>	<i>Terminalia foetidissima</i>
<i>Guettarda sp. indet.</i>	<i>T. phellocarpa</i>
<i>Heritiera javanica</i>	

(c) One individual only

<i>Abarema borneensis</i>	<i>Horsfieldia reticulata</i>
<i>Albizia pedicellata</i>	<i>Hydnocarpus anomala</i>
<i>Alseodaphne oblanceolata</i>	<i>H. woodii</i>
<i>Anonaceae indet.</i>	<i>Koompassia malaccensis</i>
<i>Alstonia angustiloba</i>	<i>Knema cinerea</i>
<i>Aquilaria sp. indet.</i>	<i>K. laurina</i>
<i>Baccaurea sp. indet.</i>	<i>Linociera pluriflora</i>
<i>Canarium sp. cf. asperum</i>	<i>Lithocarpus cantleyanus</i>
<i>C. denticulatum</i>	<i>L. woodii</i>
<i>C. kostermansii</i>	<i>Madhuca malaccensis</i>
<i>Cleistanthus sp. indet.</i>	<i>Myristica malaccensis</i>
<i>Diospyros bantamensis</i>	<i>Neoscortechinia forbesii</i>
<i>D. confertiflora</i>	<i>Nephelium maingayi</i>
<i>D. discocalyx</i>	@ <i>Octomeles sumatrana</i>
<i>Durio graveolens</i>	<i>Pentace laxiflora</i>
<i>Drypetes macrophylla</i>	<i>Polyalthia xanthopetala</i>
<i>Eleutherandra sp. indet.</i>	<i>Prunus javanica</i>
<i>Eugenia kihamense</i>	<i>Quercus treubiana</i>
<i>Ficus depressa</i>	<i>Terminalia subspathulata</i>
<i>Ficus sp. indet.</i>	<i>Walsura robusta</i>
<i>Heritiera elata</i>	<i>Xanthophyllum sp. indet.</i>

@ Colonising species of gaps and river banks.

## Appendix 5 - Table 2

RP 228 Segaliud-lokan F.R. Number of Trees in Hectare  
sub-plots by Size Classes.

Plot no.	Size Class (feet).																Total
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	7	5	2	2	3	1	6	4	4	1	0						35
2	5	3	3	3	7	1	2	1	0	0	0				1		26
3	10	9	4	1	3	4	2	1	1	1	0						36
4	5	3	3	6	6	3	1	1	2	1	0	1					32
5	11	5	2	4	4	1	1	3	0	0	0		1				31
6	4	12	2	2	7	3	2	2	0	0	0						34
7	8	2	5	4	5	4	1	2	0	0	0						31
8	12	5	2	4	3	2	2	1	2	1	0						34
9	10	5	3	4	6	2	1	0	0	0	1						32
10	4	5	3	3	3	1	1	1	2	1	2						26
11	5	3	4	3	1	2	4	1	0	0	0	2					25
12	3	3	5	4	5	2	3	1	1	0	0		2				27
13	8	6	7	8	3	1	0	1	0	2	0	1				1	38
14	8	3	5	5	3	1	2	1	2	0	0						30
15	3	1	3	2	0	2	2	0	0	0	1						14
16	7	7	6	1	4	0	4	1	0	0	0						30
17	3	4	3	9	2	0	1	2	1	1	0						26
18	7	2	5	5	0	2	4	2	3	0	1					1	32
19	6	2	4	4	3	3	2	1	3	0	1	1					30
20	7	3	4	5	4	2	0	1	1	2	0	1					30
21	4	8	2	5	5	0	2	0	0	0	0						26
22	11	3	4	6	3	3	2	0	0	0	0		1	1			34
23	7	5	5	4	1	1	1	0	2	0	1						27
24	12	2	3	7	1	1	1	0	1	0	1						29
25	5	5	1	4	4	4	2	1	0	0	0						26
26	8	10	2	4	1	2	1	1	0	0							29
27	5	8	2	2	2	1	2	1	0	0		1				1	25
28	6	9	5	3	4	2	0	2	1					1			33
29	4	6	4	5	4	4	0	2	2					1			32
30	6	4	4	1	1	0	0	2	1								19
31	9	6	4	3	2	1	0	1	0	1							27
32	5	8	5	3	5	0	2	4	1	0		1					34
33	11	4	6	2	3	1	1	2	0				2				32
34	6	6	6	4	1	2	2	1	2								30
35	10	3	3	8	0	3	1	0	0								28
36	7	5	3	1	3	1	1	1	1		1						24
37	4	7	3	4	1	1	1	2	3	1						1	28
38	4	3	1	4	4	3	3	2	1	0							25
39	6	3	4	3	4	5	1	1	0								27
40	8	3	3	1	1	3	2	0	0								21
41	5	9	3	7	1	0	0	0	1								26
42	7	6	2	4	6	3	0	0	1	1				1			31
43	9	4	0	2	5	4	1	2	2								29
44	7	7	6	5	2	5	1	5	1								39
45	9	4	4	5	6	2											30
46	10	1	3	3	1	1	1	3	1	1	1						26
47	6	5	3	2			1	2	1	3	1	1					25
48	12	5	8	1	2	1	1	1	3	2							36
49	8	4	2	3	3	1		3			1						25
50	2	6	5	6	9												28
Totals	346	247	181	191	157	92	71	66	47	19	12	9	3	4	1	4	1450

	By Itself	<i>Parashorea tomentella</i>	<i>Shorea leptoclados</i>	<i>Dryobalanops lanceolata</i>	<i>Dipterocarpus caudiferus</i>	<i>Eusideroxylon zwageri</i>	<i>Shorea leprosula</i>	<i>Shorea parvifolia</i>	<i>Shorea superba</i>	<i>Shorea gibbosa</i>	<i>Shorea waltonii</i>	<i>Shorea smithiana</i>	<i>Diospyros spp.</i>	<i>Parashorea malaanonan</i>	<i>Sympetalandra borneensis</i>	<i>Koordersiodendron pinnatum</i>
<i>Parashorea tomentella</i>	21	X	43	26	18	18	15	7	7	3	6	2	10	5	2	3
<i>Shorea leptoclados</i>	15	43	X	15	17	7	10	14	4	3	8	2	3	6	2	3
<i>Dryobalanops lanceolata</i>	8	26	15	X	15	11	1	5	1	3	6	1	4	11	4	2
<i>Dipterocarpus caudiferus</i>	8	18	17	15	X	9	4	10	5	1	5	3	5	3	2	3
<i>Eusideroxylon zwageri</i>	2	18	7	11	9	X	4	3	2	1	3	1	5	2	1	3
<i>Shorea leprosula</i>	10	15	10	1	4	4	X	3	0	0	2	0	2	2	2	1
<i>Shorea parvifolia</i>	3	7	14	5	10	3	3	X	1	3	3	1	2	0	3	2
<i>Shorea superba</i>	4	7	4	1	5	2	0	1	X	0	2	0	1	1	2	0
<i>Shorea gibbosa</i>	3	3	3	3	1	1	0	3	0	X	2	0	1	1	1	0
<i>Shorea waltonii</i>	2	6	8	6	5	3	2	3	2	2	X	0	2	1	1	0
<i>Shorea smithiana</i>	0	2	2	1	3	1	0	1	0	0	0	X	1	0	0	0
<i>Diospyros spp.</i>	0	10	3	4	5	5	2	2	1	1	2	1	X	2	2	1
<i>Parashorea malaanonan</i>	3	5	6	11	3	2	2	0	1	1	1	0	0	X	0	1
<i>Sympetalandra borneensis</i>	3	2	2	4	2	1	2	3	2	1	1	0	2	0	X	2
<i>Koordersiodendron pinnatum</i>	0	3	3	2	3	3	1	2	0	0	0	0	1	1	2	X

## Appendix 5

Table 4

Kuamut F.R.

Numbers of Plots Where

Major Species found Coincident

	<i>Shorea leptoclados</i>	<i>Parashorea tomentella</i>	<i>Dryobalanops lanceolata</i>	<i>Shorea leprosula</i>	<i>Dipterocarpus caudiferus</i>	<i>Shorea gysbertsiana</i>	<i>Shorea parvifolia</i>	<i>Shorea atrinervosa</i>	<i>Parashorea malaanonan</i>	<i>Eusideroxylon zwageri</i>	<i>Shorea smithiana</i>	<i>Shorea gibbosa</i>	<i>Shorea oleosa</i>	<i>Shorea hopeifolia</i>	<i>Shorea superba</i>	<i>Sympetalandra borneensis</i>	<i>Shorea pauciflora</i>	<i>Shorea foxworthii</i>	<i>Shorea beccariana</i>	<i>Shorea isoptera</i>	<i>Saraca lanceolata</i>	<i>Dipterocarpus humeratus</i>	<i>Shorea macroptera</i>	By itself
<i>Shorea leptoclados</i>	X	41	24	29	30	17	14	5	9	6	5	4	6	3	4	4	2	0	1	1	0	2	1	25
<i>Parashorea tomentella</i>	41	X	20	17	13	13	12	1	7	3	3	3	6	3	6	4	1	1	2	1	0	3	2	19
<i>Dryobalanops lanceolata</i>	24	20	X	12	13	5	6	2	4	7	4	8	0	2	3	1	0	2	0	0	2	2	0	8
<i>Shorea leprosula</i>	29	17	12	X	12	12	10	3	5	1	3	4	3	3	1	2	0	0	1	0	0	0	1	8
<i>Dipterocarpus caudiferus</i>	30	13	11	12	X	11	13	2	4	2	3	3	0	2	2	2	4	0	1	3	0	2	0	10
<i>Shorea gysbertsiana</i>	17	13	5	12	11	X	8	2	10	5	4	1	2	1	1	0	3	0	1	2	2	1	2	2
<i>Shorea parvifolia</i>	14	12	6	10	13	8	X	1	2	1	1	0	0	0	1	2	1	0	0	0	0	4	0	3
<i>Shorea atrinervosa</i>	5	1	2	3	2	2	1	X	0	0	1	3	0	2	0	0	0	0	0	0	1	0	0	7
<i>Parashorea malaanonan</i>	9	7	4	5	4	10	2	0	X	5	1	1	1	1	1	0	1	1	2	0	0	0	0	2
<i>Eusideroxylon zwageri</i>	6	3	7	1	2	5	1	0	5	X	4	0	0	0	0	0	0	0	0	0	0	1	0	0
<i>Shorea smithiana</i>	5	3	4	3	3	4	1	1	1	4	X	3	0	0	0	3	0	0	0	0	0	0	0	2
<i>Shorea gibbosa</i>	4	3	8	4	3	1	0	3	1	0	3	X	0	0	0	0	0	1	0	0	0	0	0	0
<i>Shorea oleosa</i>	6	6	0	3	0	2	0	0	1	0	0	0	X	0	0	0	0	0	0	0	0	0	0	1
<i>Shorea hopeifolia</i>	3	3	2	3	2	1	0	2	1	0	0	0	0	X	0	1	0	1	0	0	1	0	0	2
<i>Shorea superba</i>	4	6	3	1	2	1	1	0	1	0	0	0	0	0	X	1	0	0	0	1	0	2	0	0
<i>Sympetalandra borneensis</i>	4	4	1	2	2	0	2	0	0	0	3	0	0	1	1	X	0	1	0	0	0	1	0	0
<i>Shorea pauciflora</i>	2	1	0	0	4	3	1	0	1	0	0	0	0	0	0	0	X	0	0	0	0	0	0	2
<i>Shorea foxworthii</i>	0	1	2	0	0	0	0	1	1	0	0	1	0	1	0	0	0	X	0	1	0	0	0	0
<i>Shorea beccariana</i>	1	2	0	1	1	1	0	0	2	0	0	0	0	0	1	1	0	0	X	0	0	0	1	2
<i>Shorea isoptera</i>	1	1	0	0	3	2	0	0	0	0	0	0	0	0	1	0	0	1	0	X	0	0	0	1
<i>Saraca lanceolata</i>	0	0	2	0	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	X	0	0	1
<i>Dipterocarpus humeratus</i>	2	3	2	0	2	1	4	0	0	1	0	0	0	0	2	0	0	0	0	0	0	X	0	0
<i>Shorea macroptera</i>	1	2	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	X	1	

Coincidence of Species in RP 350 Kuamut F.R. (17 plots)

Shorea almon	6	0	2	2	0	3	0	0	0	0	4	3	1	5	1	1	5	1	3	4	3	1	2	
Shorea argenteifolia	1	1	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shorea leprosula	2	1	6	1	0	3	2	1	0	2	3	0	2	3	0	2	3	0	2	3	0	2	3	1
S. leptoclados	2	0	1	6	0	5	1	2	1	4	2	0	5	0	5	0	2	0	5	0	2	0	5	0
S. macroptera	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
P. tomentella	3	0	3	5	1	12	2	3	1	7	6	1	8	1	8	1	4	3	2	4	3	2	4	10
P. malaanonan	0	0	2	1	0	2	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
S. acuminatissima	0	0	1	2	1	3	1	4	2	3	0	0	2	1	1	1	1	1	1	1	2	4	2	4
S. gibbosa	0	0	0	1	1	1	0	2	2	2	0	0	1	0	0	0	0	0	1	0	1	1	2	2
Dr. lanceolata	4	0	2	4	1	7	0	3	2	10	5	1	8	0	1	8	0	1	2	2	3	8	3	8
S. superba	3	1	3	2	0	6	0	0	0	0	5	8	1	5	1	5	1	2	3	2	2	7	2	7
S. seminis	1	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	1	0	1	0	0	0	1	1
D. caudiferus	5	0	2	5	0	8	0	2	1	8	5	1	11	0	3	3	2	3	8	3	8	3	8	8
H. nervosa	1	0	2	0	0	1	0	1	1	0	0	0	1	0	2	1	0	0	0	0	0	0	0	1
F. zwageri	1	0	1	2	0	4	0	1	1	0	1	2	1	3	4	2	1	3	1	3	1	3	3	3
B. lanceolata	0	1	1	2	0	3	0	1	0	2	3	0	3	0	2	4	1	2	4	1	2	4	4	4
F. subspathulata	0	0	0	1	0	2	0	1	0	2	1	2	2	0	2	0	2	0	1	1	3	1	3	3
S. parvifolia	0	0	1	1	1	4	0	2	4	0	1	3	2	0	3	0	1	2	4	1	2	3	3	12
S. pauciflora	2	1	3	3	1	10	1	4	2	4	2	8	7	1	8	1	4	3	4	3	3	3	3	12

Appendix 5 - Table 6

Coincidence of Species in RP 307A Kalabakan F.R. (63 plots)

E. zwageri	51	39	27	21	13	18	15	17	16	5	8	3	3	9	5	5	5	5	5
Di. borneensis (45 plots)	41	33	22	16	16	14	15	16	11	5	9	2	2	4	2	7	7	7	8
Castanopsis sp. (33 plots)	25	28	15	11	9	10	11	9	10	3	6	0	0	3	4	3	3	3	3
Eugenia sp. (25 plots)	24	19	14	6	7	8	8	8	9	2	4	1	1	2	2	2	2	2	4
S. parvifolia	39	49	29	16	18	18	12	14	18	3	10	2	5	5	4	5	5	5	5
Dr. lanceolata	27	29	32	11	8	14	7	7	12	2	6	0	3	2	1	1	1	1	2
S. leptoclados	21	16	11	23	5	9	9	10	5	3	2	3	0	3	2	2	2	2	2
S. smithiana	13	16	8	5	22	4	7	8	6	0	7	2	4	3	3	3	3	3	3
Parashorea tomentella*	18	14	10	4	21	4	4	5	8	3	5	3	3	4	0	0	0	0	1
D. caudiferus	15	15	11	19	5	6	7	5	6	2	3	0	0	3	1	1	1	1	2
S. leprosula	17	14	7	10	19	5	5	19	5	3	3	3	3	4	0	0	0	0	2
S. pauciflora	16	18	12	5	8	8	6	3	18	2	2	3	3	2	2	2	2	2	2
S. guiso	8	10	9	2	7	5	3	3	2	0	13	1	3	1	3	3	3	3	3
S. laevis	3	2	0	3	2	0	2	3	0	1	1	4	0	1	1	1	1	1	2
S. superba	3	5	3	0	4	0	0	4	0	0	1	0	0	3	0	0	0	0	0
H. nervosa	9	8	5	5	4	3	0	0	4	0	3	2	2	2	2	2	2	2	2
S. parvifolia																			
Dr. lanceolata																			
S. leptoclados																			
S. smithiana																			
Parashorea tomentella*																			
D. caudiferus																			
S. leprosula																			
S. pauciflora																			
S. guiso																			
S. laevis																			
S. superba																			
H. nervosa																			
S. parvifolia																			
Dr. lanceolata																			
S. leptoclados																			
S. smithiana																			
Parashorea tomentella*																			
D. caudiferus																			
S. leprosula																			
S. pauciflora																			
S. guiso																			
S. laevis																			
S. superba																			
H. nervosa																			
S. parvifolia																			
Dr. lanceolata																			
S. leptoclados																			
S. smithiana																			
Parashorea tomentella*																			
D. caudiferus																			
S. leprosula																			
S. pauciflora																			
S. guiso																			
S. laevis																			
S. superba																			
H. nervosa																			
S. parvifolia																			
Dr. lanceolata																			
S. leptoclados																			
S. smithiana																			
Parashorea tomentella*																			
D. caudiferus																			
S. leprosula																			
S. pauciflora																			
S. guiso																			
S. laevis																			
S. superba																			
H. nervosa																			

\* ... of P malaanonan in plot 4 included.

Coincidence of Species in RP 303 Kalabakan F.R. (16 plots)

Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
E. zwageri	11	7	6	3	3	4	3	3	5	5	5	3	5	5	5	8
S. oleosa	7	11	5	7	3	1	3	3	3	3	2	3	3	2	3	2
S. mecistopteryx	6	5	8	4	2	4	0	2	3	4	0	2	4	2	7	1
S. parvifolia	3	7	4	3	8	3	0	2	2	1	2	1	3	1	1	0
S. leprosula	4	3	2	3	5	2	2	2	2	1	2	1	1	1	2	0
S. smithiana	3	1	0	2	0	1	3	1	2	1	1	0	1	1	0	1
P. tomentella	4	3	3	1	2	2	1	5	4	0	3	1	0	2	3	1
P. malaanonan	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0	1
Dr. lanceolata	6	3	4	2	2	4	7	0	3	2	0	2	2	1	1	1
S. argentifolia	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0
D. caudiferus	4	2	2	1	2	2	3	3	0	4	0	0	1	3	0	0
S. ovalis	5	3	4	2	1	1	0	2	1	0	5	0	2	0	1	0
S. leptoclados	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0
S. pauciflora	3	3	2	1	3	1	2	1	2	0	2	0	5	1	0	0
S. gibbosa	3	2	1	1	2	1	2	3	2	0	3	0	1	0	0	0
Dr. keithii	1	2	1	1	0	1	0	1	0	1	0	0	0	0	0	0
S. superba	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Dipterocarpus spindet	1	2	2	3	2	0	0	0	0	0	0	0	0	0	0	0
Scaphium longipetiolatum	3	0	2	1	1	1	2	1	0	1	1	0	1	1	0	1
Hentiera simplicifolia	1	2	1	2	0	0	0	0	0	0	1	0	1	0	0	0
Sindora irpicina	1	3	1	3	1	0	0	0	0	0	1	0	1	0	0	0
Diospyros spindet	1	1	0	1	1	1	1	1	1	0	0	0	1	0	0	0
Canarium spindet	6	2	2	5	3	2	3	2	1	2	0	4	2	0	2	1
Canarium odontophyllum	2	2	2	2	1	0	0	0	0	0	2	0	1	0	0	0
Campnosperma	4	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Sapotaceae indet	3	2	1	2	2	2	2	3	1	0	1	0	2	1	1	1
Buchanania lucida	1	2	1	2	2	1	2	1	0	1	0	1	0	0	0	1
Lauraceae indet	3	2	2	2	2	2	2	2	2	0	2	0	0	2	0	1
Richetia indet	4	5	4	4	2	1	2	1	2	0	3	1	3	0	0	1
Irvingia malayana	2	3	1	2	1	1	2	1	0	2	1	0	0	1	1	1
Castanopsis sp.	3	3	3	3	1	1	1	1	1	1	0	1	0	1	1	0
Koompassia excelisa	3	2	1	2	1	1	2	1	1	0	2	1	2	1	0	0
Koompassia malaccensis	3	2	1	2	1	1	2	1	1	0	2	1	2	1	0	0
Chaetocarpus castanocarpus	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Dialium indum	3	2	4	2	1	0	1	0	1	0	0	0	0	0	0	0



## Appendix 5 Table 8

Segaliud-lokan F.R. Distribution of Major Species 5ft. Plus

Species	Plots containing trees 1-4+					Total	% of All Plots
	1	2	3	4	4+		
1 Parashorea tomentella	101	32	3	0	0	136	34.5
2 Shorea leptoclados	87	19	4	0	0	110	27.8
3 Dryobalanops lanceolata	61	15	1	0	1	78	19.8
4 Dipterocarpus caudiferus	65	9	1	0	0	75	19.0
5 Eusideroxylon zwageri	42	5	1	0	0	48	12.2
6 Shorea leprosula	37	4	0	0	0	41	10.4
7 Shorea parvifolia	31	3	0	0	0	34	8.6
8 Parashorea malaanonan	29	2	0	0	0	31	7.9
9 Shorea waltonii	21	0	1	0	0	22	5.6
10 Shorea superba	19	1	0	0	0	20	5.1
11 Diospyros spp.	19	1	0	0	0	20	5.1
12 Sympetalandra borneensis	16	0	0	0	0	16	4.1
13 Shorea gibbosa	13	1	0	0	0	14	3.6
14 Pterospermum spp.	12	0	1	0	0	13	3.3
15 Koordersiodendron pinnatum	9	0	0	0	0	9	2.3
16 Dipterocarpus grandiflorus	7	1	0	0	0	8	2.0
17 Dipterocarpus acutangulus	5	1	1	0	0	7	1.8
18 Shorea smithiana	6	1	0	0	0	7	1.8
19 Dryobalanops keithii	1	2	0	0	0	3	0.8
20 Shorea mecistopteryx	2	1	0	0	0	3	0.8

Kuamut F.R. Distribution of Major Species 5ft. Plus

Species	Plots containing trees 1-4+					Total	% of all Plots
	1	2	3	4	4+		
1 <i>Shorea leptoclados</i>	108	26	12	1	1	148	30.8
2 <i>Parashorea tomentella</i>	87	11	6	0	0	104	21.6
3 <i>Dryobalanops lanceolata</i>	59	10	2	1	1	73	15.2
4 <i>Shorea leprosula</i>	56	13	2	0	0	71	14.8
5 <i>Dipterocarpus caudiferus</i>	62	5	2	0	0	69	14.4
6 <i>Shorea gysbertsiana</i>	38	16	1	0	0	55	11.5
7 <i>Shorea parvifolia</i>	35	4	0	1	0	40	8.3
8 <i>Shorea atrinervosa</i>	20	7	1	0	0	28	5.8
9 <i>Parashorea malaanonan</i>	25	1	0	0	0	26	5.4
10 <i>Eusideroxylon zwageri</i>	20	0	0	0	0	20	4.2
11 <i>Shorea smithiana</i>	19	0	0	0	0	19	4.0
12 <i>Shorea gibbosa</i>	15	0	0	0	0	15	3.1
13 <i>Shorea oleosa</i>	12	0	0	0	0	12	2.5
14 <i>Shorea hopeifolia</i>	8	3	0	0	0	11	2.3
15 <i>Shorea superba</i>	9	2	0	0	0	11	2.3
16 <i>Sympetalandra borneensis</i>	9	2	0	0	0	11	2.3
17 <i>Shorea pauciflora</i>	10	0	0	0	0	10	2.1
18 <i>Shorea foxworthii</i>	9	0	0	0	0	9	1.9
19 <i>Shorea beccariana</i>	7	0	1	0	0	8	1.7
20 <i>Shorea isoptera</i>	6	1	0	0	0	7	1.5
21 <i>Saraca lanceolata</i>	5	0	0	1		6	1.2
22 <i>Dipterocarpus humeratus</i>	3	1	0	0	0	4	0.8
23 <i>Shorea macroptera</i>	4	0	0	0	0	4	0.8

## A : All Trees Over Five Feet Girth

Girth	No. of trees in 0.2 acre booking plots											Total
	0	1	2	3	4	5	6	7	8	9	10	
Over 5 ft.	29	80	93	95	56	29	7	4	0	0	1	394
Over 7 ft.	77	158	98	47	8	5	1	0	0	0	0	394
Over 9 ft.	176	151	61	5	1	0	0	0	0	0	0	394
Over 11 ft.	261	121	11	1	0	0	0	0	0	0	0	394

## B : Dipterocarps Over Five Feet Girth

Girth	No. of trees in 0.2 acre booking plots											Total
	0	1	2	3	4	5	6	7	8	9	10	
Over 5 ft.	52	115	102	78	33	12	1	0	1	0	0	394
Over 7 ft.	90	176	85	35	6	1	1	0	0	0	0	394
Over 9 ft.	182	160	48	4	0	0	0	0	0	0	0	394
Over 11 ft.	267	118	8	1	0	0	0	0	0	0	0	394

N.B. Table entries refer to numbers of 0.2 acre plots out of the total of 394.

## Appendix 5

Table 11 Booking Plots with different  
Numbers of Trees Kuamut F.R.

A : All Trees over 5 feet girth

Girth	Nos. of trees in 0.2 acre plots												Total
	0	1	2	3	4	5	6	7	8	9	10	11	
Over 5 feet	68	89	119	92	48	36	18	5	2	1	0	1	479
Over 7 feet	145	129	117	54	20	10	4	0	0	0	0	0	479
Over 9 feet	230	145	80	20	4	0	0	0	0	0	0	0	479
Over 11 feet	333	109	35	2	0	0	0	0	0	0	0	0	479

B. Dipterocarps over 5 feet girth

Girth	0	1	2	3	4	5	6	7	10	Total
Over 5 feet	95	119	123	71	38	18	10	4	1	479
Over 7 feet	159	140	108	46	16	8	2	0	0	479
Over 9 feet	242	145	74	15	3	0	0	0	0	479
Over 11 feet	340	108	30	1	0	0	0	0	0	479

N.B. Table entries refer to numbers of 0.2 acre plots out of the total of 479.

Appendix 6

Summary of Results RP 278

- Table 1    Marked Trees by Species and Sizes
- Table 2    Damage by Categories
- Table 3    Bark and Crown Damage by  
            Girth Classes
- Table 4    Stand Tables Sub Block (i)
- Table 5    Damage Assessment Sub Block (i)
- Table 6    Stand Tables Sub Block (1)
- Table 7    Damage Assessment Sub Block (1)
- Table 8    Types of Damage by Girth Classes

## Appendix 6 Table 1

F.R. Segaliud-Lokan

Plot No. RP 278

83.1 acres.

## MARKED TREES BY SPECIES AND SIZES.

(COMMERCIALS ONLY.)

GIRTH CLASS (FEET)

Group	Species	1	2	3	4	5	Total	Percentage.
White	<i>Parashorea tomentella</i>	100	56	31	25	19	231	16.93
Serayas	<i>Parashorea malaanonan</i>	19	13	2	2	2	38	2.78
Majau	<i>Shorea leptoclados</i>	61	48	35	26	15	185	13.58
Red	<i>Shorea parvifolia</i>	38	17	7	2	3	67	4.91
Serayas	<i>Shorea leprosula</i>	30	25	13	12	6	86	6.30
	<i>Shorea waltonii</i>	34	15	4	3	-	56	4.10
	<i>Shorea smithiana</i>	13	13	3	2	3	34	2.49
	<i>Shorea almon</i>	3	2	-	-	1	6	0.43
	<i>Shorea mecistopteryx</i>	4	2	-	2	-	8	0.58
	<i>Shorea pauciflora</i>	-	-	1	1	1	3	0.21
	<i>Shorea macroptera</i>	-	1	1	-	-	2	0.14
	<i>Shorea ovalis</i>	1	-	1	-	-	2	0.14
	<i>Shorea macrophylla</i>	-	-	1	-	-	1	0.07
Kapur	<i>Dryobalanops lanceolata</i>	110	46	22	18	13	209	15.32
	<i>Dryobalanops keithii</i>	2	-	-	-	-	2	0.14
Keruing	<i>Dipterocarpus caudiferus</i>	57	29	14	11	15	126	9.23
	<i>Dipterocarpus exalatus</i>	3	2	1	-	-	6	0.43
	<i>Dipterocarpus grandiflorus</i>	-	-	-	-	1	1	0.07
Yellow	<i>Shorea gibbosa</i>	12	13	6	2	1	34	2.49
serayas	<i>Shorea acuminatissima</i>	12	7	2	2	1	24	1.75
	<i>Shorea hopeaefolia</i> (?)	9	2	2	-	-	13	0.95
	<i>Shorea xanthophylla</i>	1	-	-	-	-	1	0.07
Selangan	<i>Shorea superba</i>	13	4	2	3	2	24	1.75
batu	Indet	3	1	3	1	1	8	0.58
	<i>Shorea seminis</i>	4	3	1	1	-	9	0.65
	<i>Shorea obscura</i>	-	3	1	-	1	5	0.36
Melapi	<i>Shorea gratissima</i>	5	2	-	-	1	8	0.58
	<i>Shorea symingtonii</i>	3	-	1	-	-	4	0.29
	<i>Shorea agami</i>	1	-	3	-	-	4	0.29
Gagil	<i>Hopea sangal</i>	1	-	2	2	-	5	0.36
Resak	<i>Vatica</i> sp	2	1	1	-	-	4	0.29
Belian	<i>Eusideroxylon zwageri</i>	23	56	34	11	13	137	10.04
Nyatch	Sapotaceae	10	7	-	-	-	17	1.24
Sepetir	<i>Sindora</i> sp	3	-	-	-	-	3	0.21
	Totals	577	368	194	126	99	1364	100

DAMAGE BY CATEGORIES.  
COMMERCIAL SPECIES ONLY

	12-23	24-35	36-47	48-59	60-71"	Totals	Percentages
Co s0	98	70	46	27	20	261	19.13
Co s1	2	7	2	5	5	21	1.53
Co s2	5	4	6	3	5	23	1.68
Co s3	0	1	1	0	2	4	0.29
Co s4	0	0	0	0	1	1	0.07
C1 s0	53	33	30	15	13	144	10.55
C1 s1	10	6	2	2	4	24	1.75
C1 s2	5	5	5	4	2	21	1.53
C1 s3	1	0	2	1	1	5	0.36
C1 s4	0	0	0	1	0	1	0.07
C2 s0	13	14	8	5	6	46	3.37
C2 s1	0	4	0	1	0	5	0.36
C2 s2	2	4	2	4	6	18	1.31
C2 s3	1	0	0	0	0	1	0.07
C2 s4	0	0	0	0	2	2	0.14
C2 s5	0	0	0	1	0	1	0.07
C3 s0	8	7	7	4	2	28	2.05
C3 s1	1	2	3	2	2	10	0.73
C3 s2	2	0	0	2	0	4	0.29
C3 s3	1	1	0	1	2	5	0.36
C4 s0	10	10	3	5	2	30	2.19
C4 s1	3	2	2	1	0	8	0.58
C4 s2	6	3	1	3	1	14	1.02
C4 s3	1	2	2	0	1	6	0.43
C4 s4	1	0	1	0	0	2	0.14
C4 s5	0	1	0	0	0	1	0.07
Fallen by tractor	72	50	14	13	3	152	11.14
Near tractor path but not found	147	63	14	4	4	232	17.0
Broken off	57	41	21	18	12	149	10.92
Under fallen trees not found	41	20	11	2	1	75	5.49
Fallen by trees	37	18	10	2	2	69	5.09
Died naturally	0	0	1	0	0	1	0.07
	577	368	194	126	99	1364	100

Appendix 6 Table 3  
Bark Damage by Girth Classes

Category	Girth					Total	%
	1	2	3	4	5		
1. Less than 1 ft.	16	21	9	11	11	68	4.9
2. 1-5 ft.	20	16	14	16	14	80	5.9
3. 5-10 ft.	4	4	5	2	6	21	1.5
4. 1-20 ft.	1	0	1	1	3	6	0.4
5. Over 20 ft.*	0	1	0	1	0	2	0.1
Total	41	42	29	31	34	177	12.9
Percentage	7.1	11.4	14.9	24.6	34.3		

\* Excluding fallen or broken off.

Crown Damage by Girth Classes

Category	Girth					Total	%
	1	2	3	4	5		
1. 1-25% broken	69	44	39	23	20	195	14.3
2. 25-50% broken	16	22	10	11	14	73	5.4
3. 50-75% broken	22	10	19	9	6	47	3.4
4. 75-99% broken	21	18	9	9	4	61	4.5
Total	118	94	68	52	44	376	27.6
Percentage	20.4	25.5	35.1	41.3	44.4		



## Appendix 6 Table 4

Stand Table Before and  
After Logging Sub-Block i

Species	Girth Class					Total Before	Total After	Survival %
	1	2	3	4	5			
	B A	B A	B A	B A	B A			
<i>Shorea leptoclados</i>	5 1	8 3	3 1	2 2		18	7	39
<i>Shorea leprosula</i>	5 2	6	1	1		13	2	15
<i>Shorea waltonii</i>	3	2 1				5	1	20
<i>Parashorea tomentella</i>	4	1	2 1	2 1	1 1	10	3	30
<i>Parashorea malaanonan</i>	1	1 1				2	1	50
<i>Shorea superba</i>	2	1 1		1 1		4	2	50
<i>Shorea ? seminis/ hopeifolia</i>	4 2	2				6	2	33
Selangan batu	1					1	0	0
<i>Dryobalanops lanceolata</i>	6 2	1				7	1	14
<i>Shorea acuminatissima</i>	2					2	0	0
<i>Dipterocarpus caudiferus</i>	5 1	2	1			8	1	12.5
<i>Dipterocarpus grandiflorus</i>					1 1	1	1	100
<i>Shorea gratissima</i>	2					2	0	0
Sapotaceae	1 1	1				2	1	50
<i>Eusideroxylon zwageri</i>	1	2	4 1			7	1	14
Totals Before	43	26	11	6	2	88	-	
After	9	6	3	4	2	-	24	
Survival %	21	23	27	67	100		27.2	

## Appendix 6 Table 5

## Damage Assessment After Logging

## Sub Block i

Category of Damage	Size Classes (Feet, Girth)					Total	%
	1	2	3	4	5		
C0 S0	4	3				7	7.9
C0 S1	0	1			1	2	2.3
C0 S2	1	0				1	1.1
C1 S2	1	0	0	2		3	3.4
C2 S0	1	1	1			3	3.4
C3 S0	0	0		2		2	2.3
<b>Total standing trees with survival value</b>	<b>9</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>24</b>	<b>27.2</b>
C4 S0		1				1	
C4 S1	1					1	
C4 S2		1				1	
C4 S3		1				1	
C4 S4				1		1	
Fallen by tractor	7	1	1	1		10	11.4
Near tractor path, not found	14	7	2			23	26.2
Broken off	2	5	1			8	9.1
Under fallen trees not found	5	3	4			12	13.6
Fallen by trees	5	1				6	6.8
<b>Totals</b>	<b>43</b>	<b>26</b>	<b>11</b>	<b>6</b>	<b>2</b>	<b>88</b>	<b>100</b>

Appendix 6 Table 6

Stand Table Before and

After Logging Sub-Block 1

Species	Girth Class					Total Before	Total After	Survival %
	1	2	3	4	5			
	B A	B A	B A	B A	B A			
Shorea leprosula	4 2	2	3 1		1 1	10	4	50
Shorea leptoclados	2	3 2	1	2		8	2	25
Shorea macroptera			1			1		0
Shorea almon	1 1		1 1			2	2	100
Shorea smithiana	1	2				3		0
SMBU	1					1		0
Parashorea tomentella	4 3	2 1	1 1	1		8	5	63
Parashorea malaanonan	2 1	3				5	1	20
Shorea superba		1			1 1	2	1	50
Selangan batu	1		2 1	1		4	1	25
Shorea mecistopteryx	1 1	1 1	1 1			3	3	100
Dryobalanops lanceolata	1	1	1		3 3	6	3	50
Shorea acuminatissima	1 1			2	1	4	1	25
Shorea (Ritchetia)	3					3		0
Dipterocarpus caudiferus	3	1				4		0
Hopea sangal			1		1 1	2	1	50
Sapotaceae	3 2					3	2	67
Eusideroxylon zwageri		6 2	3	1 1	2 2	12	5	41
Totals Before	30	22	15	7	9	83		
After	11	6	5	1	8		31	
Survival %	37	27	33	14	88	37.4		

## Appendix 6 Table 7

Damage Assessment After Logging  
Sub Block 1

Category of Damage	Size Classes ft. Girth					Total	%
	1	2	3	4	5		
C0 S0	3	2	3	0	1	9	10.8
C0 S1	1				1	2	2.4
C1 S0	2	3	1	0	2	8	9.6
C1 S1	1					1	1.2
C2 S0	2			1	1	4	4.8
C2 S2	1	1	1		1	4	4.8
C3 S0	1				1	2	2.4
C3 S1					1	1	1.2
<b>Total standing trees with survival value</b>	<b>11</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>8</b>	<b>31</b>	<b>37.4</b>
C4 S0		1				1	1.2
C4 S1			1	1		2	2.4
C4 S5		1				1	1.2
<b>Fallen by tractor</b>	<b>6</b>	<b>7</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>20</b>	<b>24.1</b>
<b>Near tractor path, not found</b>	<b>6</b>	<b>2</b>				<b>8</b>	<b>9.6</b>
<b>Broken off</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>2</b>		<b>14</b>	<b>16.8</b>
<b>Fallen by trees</b>	<b>3</b>	<b>2</b>	<b>1</b>			<b>6</b>	<b>7.2</b>
<b>Totals</b>	<b>30</b>	<b>22</b>	<b>15</b>	<b>7</b>	<b>9</b>	<b>83</b>	<b>100</b>

## Appendix 6 Table 8

Types of Damage by Girth Classes

Class of Damage	Girth Class (Feet)						Total Per 100 acres	Per- centage
	1	2	3	4	5	Total		
1. No damage	98	70	46	27	20	261	314	19
2. Bark damage, no crown damage	7	12	9	8	13	49	59	4
3. Crown damage, no bark damage	84	64	48	29	23	248	298	18
4. Both bark & crown damage	34	30	20	23	21	128	154	10
5. Fallen or broken off	354	192	71	39	22	678	816	49
Totals	577	368	194	126	99	1364	1641	100



Appendix 7 - Table 1

Non-Commercial Species Remaining after Logging RP 223C Ulu Segama F.R.  
(15 Plots of 0.4 ha. summed)

Botanical Status	Number of Trees in Size Classes											Total
	6 5	9 7	12 9	15 11	18 14	24 19	30 24	36 < 54 28	54 < 72 43	72 + 58 +	Total	
Lauraceae	66	45	33	22	20	19	10	20	1	1	237	
Anonaceae	47	44	25	25	26	10	12	16	3	-	208	
Diospyros spp	36	37	20	17	18	16	12	29	12	9	206	
Eugenia spp	29	28	18	9	17	7	2	2	1	-	113	
Burseraceae	10	14	11	6	6	4	2	7	6	2	68	
Aglaia spp	17	13	10	3	7	-	3	-	-	-	53	
Dillenia spp	3	7	7	8	12	6	4	5	-	-	52	
Leea aculeata	34	8	4	-	-	-	-	-	-	-	46	
Baccaurea spp	19	14	12	3	1	-	-	-	-	-	49	
Microcos sp	10	15	4	6	5	2	-	1	-	-	43	
Paranaphellium nitidum	11	12	6	1	5	3	-	-	-	-	38	
Koilocarpus sp	9	5	3	-	6	2	3	3	1	-	32	
Pentace sp	6	10	1	1	3	1	1	1	-	-	24	
Fordia sp	7	6	2	4	1	-	-	-	-	-	20	
Lophopetalum sp	3	1	2	1	4	2	-	1	1	-	15	
Koordersiodendron pinnatum	1	-	-	-	1	1	1	1	-	4	9	
Fagaceae	1	-	1	1	1	1	1	2	-	-	8	
Others	8	11	4	1	3	3	4	4	-	1	39	
<b>Total</b>	<b>317</b>	<b>270</b>	<b>163</b>	<b>108</b>	<b>136</b>	<b>77</b>	<b>55</b>	<b>92</b>	<b>25</b>	<b>17</b>	<b>1260</b>	
<b>Per 10 acres/4 ha.</b>	<b>211</b>	<b>180</b>	<b>109</b>	<b>72</b>	<b>91</b>	<b>51</b>	<b>37</b>	<b>61</b>	<b>17</b>	<b>11</b>	<b>840</b>	

Appendix 7 - Table 2

Non-Commercial Species Remaining after Logging in 7 Forest Reserves

Mean Per Acre (averages of 15 plots at each)

Location	Girth (ins) Diam. (cm)	Number of Trees in Size Classes										Totals
		6 5	9 7	12 9	15 11	18 14	24 19	30 24	36 < 54 28	54 < 72 43	72+ 58+	
Tenegang FR RP. 223A		16.0	21.5	13.7	8.5	9.3	7.6	0.5	3.7	1.1	0.9	85.1
Ulu Segama FR RP. 223C		21.1	18.0	10.9	7.2	9.1	5.1	3.7	6.1	1.7	1.1	84.0
Deramakot FR RP. 223D		9.4	9.5	5.2	3.2	5.7	2.9	1.7	2.7	1.2	0.3	41.3
Silabukan FR RP. 223E		14.6	13.5	8.1	7.0	7.2	5.5	2.3	3.3	1.3	1.1	63.5
Kretam FR RP. 223G		2.3	3.5	3.7	4.4	5.5	2.6	2.5	0.9	0.5	0.7	26.8
Kalabakan FR RP. 223H		14.5	13.2	10.3	5.1	6.9	4.4	3.4	4.7	2.3	2.1	67.1
Lumeran FR RP. 223J		1.1	5.1	3.7	4.7	2.3	1.5	0.2	0.1	0.1	0.4	19.2



Trees Remaining after Logging on 30 acres ( 12 ha.)  
RP 233 Ulu Segama F.R (Silem)

Botanical Status	Girth (ft.) Diam (cm.)	2	3	4	5	6+ 58+	Total
<u>Dipterocarpaceae</u>							
Parashorea malaanonan		5	3	4	5	2	19
Shorea leptosula		-	1	4	2	-	7
Shorea leptocladus		15	8	8	13	14	58
Other dipterocarps (4 species)		1	5	4	-	1	11
<u>Non-Dipterocarpaceae (Families)</u>							
Ebenaceae		13	39	20	5	5	82
Lauraceae		22	24	5	5	5	61
Sapindaceae		9	19	23	1	3	55
Anacardiaceae		5	3	11	2	7	28
Burseraceae		6	8	6	1	3	24
Euphorbiaceae		6	11	4	2	-	23
Meliaceae		12	9	1	-	1	23
Fagaceae		2	8	5	2	2	19
Dilleniaceae		10	6	1	1	-	18
Rubiaceae		-	3	7	2	4	16
Others		15	34	19	12	4	84
<b>Total</b>		<b>121</b>	<b>181</b>	<b>122</b>	<b>53</b>	<b>51</b>	<b>528</b>
<b>Per 10 acres/4 ha.</b>		<b>40</b>	<b>60</b>	<b>41</b>	<b>18</b>	<b>17</b>	<b>176</b>

(More detail in Fox 1969 c )

Appendix 8

Seedling Stocking Following Felling - 1966-70

Overall results of LSM - Linear Sampling of milli acres.

Forest Reserve (Locality)	Year	Stocking	Percentage Stocking		Individual Species of Rubroshorea most abundant		
			Parashorea	Rubroshorea			
Kalabakan	(Brantian)	1966	215	28	64	S. parvifolia, S. leptoclados	
		1967	486	25	38	S. smithiana, S. parvifolia	
		1968	182	28	53	S. parvifolia, S. leprosula	
		1969	200	13	65	S. parvifolia, S. oleosa	
		1970	175	23	45	S. parvifolia, S. oleosa	
	(Umas Umas)	1968	224	13	49	S. parvifolia, S. smithiana ♂	
		1969	291	9	63	S. parvifolia, S. smithiana	
		1970	256	18	53	S. parvifolia, S. leprosula	
	(Luasong)	1968	321	18	32	S. parvifolia, S. oleosa	
		1969	498	26	46	S. parvifolia, S. oleosa	
	Gunong Rara Kretan	(Sg. Binuang)	1970	617	27	47	S. parvifolia, S. oleosa
			1966	354	17	51	S. leptoclados, S. mecistopteryx
			1967	687	9	53	S. leptoclados, S. leprosula
			1968	415	17	53	S. leptoclados, S. mecistopteryx
			1969	319	18	44	S. leptoclados, S. mecistopteryx
(Sg. Rotan)		1970	301	28	34	S. leptoclados, S. oleosa	
		1968	494	65	19	S. leptoclados, S. leprosula	
		(Sg.) Batu	1966	180	17	68	S. leptoclados, S. parvifolia
			1967	329	18	59	S. leptoclados, S. leprosula
		1968	187	40	48	S. leptoclados, S. parvifolia	
(Sg. Kimambu)		1966	283	21	52	S. leptoclados, S. leprosula	
		1967	370	13	64	S. leptoclados, S. parvifolia	
		1968	311	21	51	S. leptoclados, S. parvifolia.	

/continued.....

Appendix 8 continued.....

Forest Reserve (Locality)	Year	Stocking	Percentage Stocking		Individual Species of Rubroshorea most abundant
			Parashorea	Rubroshorea	
Deramakot (Balat)	1966	259	64	13	S. leptoclados, S. smithiana
	1967	146	27	41	S. leptoclados, S. mecistopteryx
	1968	264	60	28	S. leptoclados, S. parvifolia
	1969	236	62	18	S. smithiana S. leptoclados
	1970	194	47	27	S. smithiana S. mecistopteryx
(Arawon)	1966	177	37	33	S. leptoclados S. smithiana
					9
(Karis Karis)	1966	244	76	14	S. leptoclados S. parvifolia
	1967	294	51	19	S. macroptera S. leptoclados
	1968	185	47	24	S. smithiana S. leptoclados
	1969	246	36	39	S. leptoclados S. macroptera
	1970	332	42	32	S. macroptera S. mecistopteryx
Kuamut (Tangkong)	1966	421	4	67	S. leptoclados S. mecistopteryx
	1967A	280	23	45	S. leptoclados S. smithiana
	1967B	217	13	74	S. leptoclados S. smithiana
	1968	267	11	53	S. leptoclados S. mecistopteryx

Appendix 9 - Table 1

Numbers of Increments by C.A.I and Girth Classes

RP.53 Segalind-Lokan F.R.

Size Class	Inches Girth < 20	20-39.9	40-59.9	60+	Total
Increment Class (Inches CAI)					
0 - 0.49	24	22	10	7	63
0.5 - 0.99	6	11	6	4	27
1.0 - 1.49	-	4	2	2	8
1.5 - 1.99	-	4	1	-	5
2.0+	-	-	1	1	2
<p>(a) Prior to felling 1959 - 1962</p> <p>(b) After felling 1963 - 70</p>					
0 - 0.49	7	6	3	1	17
0.5 - 0.99	2	10	10	7	29
1.0 - 1.49	3	21	7	7	38
1.5 - 1.99	-	5	8	2	15
2.0+	-	4	-	2	6

## RP. 273 C Silabukan F.R.

Size Class (Inches Girth)	< 10	10-19.9	20-29.9	30-39.9	40+	Total
Increment Class (Inches CAI)	(one year following treatment)					
	(a) Control Plots 1 and 4					
0 - 0.9	29	37	5	1	4	76
1 - 1.9	8	42	13	1	5	69
2 - 2.9	1	12	13	2	1	29
3 +	1	4	6	-	3	14
	(b) Treatment Plot 3					
0 - 0.9	9	9	1	-	1	20
1 - 1.9	16	25	-	1	1	43
2 - 2.9	4	13	6	1	-	24
3 +	1	3	1	-	2	7

Appendix 9 - Table 3

Percentage of Average C.A.I's of 2.00 inches or more over  
the 2 years following treatment

RP.273A Segalind-lokan F.R.

Girth Class (Inches)	< 10	10-19.9	20-29.9	30-39.9	40+	Totals
Control	0	14	44	33	11	22
T 2	45	73	53	50	-	52
T 3	25	33	63	25	44	40

Summary of IS  $\frac{1}{4}$  Surveys at Kalabakan F.R. (to show Climber Infestation)

Area	Felled	Girdled	Age from F	Category	Mean Stocking Per Acre (0.4 ha.)		
					All sizes 5ft+ ht (over 1.5m ht)	1-2ft g (10-20 cmd)	Over 2ft g (over 20 cmd)
1	1953-54	1955-57	9	All Stems	91.5	11.1	3.6
				Free of Climbers	34.0	1.6	1.2
				All	87.2	13.9	4.7
				Free of Climbers	25.5	1.5	1.3
2	1957-58	1958	5-6	All Stems	110.9	11.0	3.4
				Free of Climbers	69.6	5.9	2.3
				All	104	16.1	5.8
				Free of Climbers	36.8	6.3	2.6
3	1953-55	1958	10	All Stems	106.8	7.8	6.2
				Free of Climbers	78.1	5.0	5.5
				All	122.4	16.4	7.5
				Free of Climbers	46.3	3.4	3.0
4	1955	1958	8	All Stems	91.8	8.7	4.7
				Free of Climbers	73.1	6.6	3.9
				All	98.4	7.8	4.8
				Free of Climbers	57.2	1.9	1.2

(Maximum 160)

Appendix 11

Line Summary IS $\frac{1}{2}$  Survey Silabukan F.R. Felled 1955, Samples March 1971

Line Chainage P.O.	Maximum Plots	Acreage	Stocking size class										Total Stocking Climbers	Plots with Impeders	Reliefs (Comm.)
			<10ft.	10ft.- 6ins.g.	6-12ins.g.	1-2ft.g.	2-3ft.g.	3-4ft.g.	4-5ft.g.	5ft.+	5ft.+	5ft.+			
40	80	2.0	13	5	15	6	15	1	-	-	1	56	49	51	2
40	80	2.0	10	23	20	10	3	-	-	-	1	67	61	61	3
30	60	1.5	5	8	19	15	-	-	1	-	2	50	23	27	1
30	60	1.5	8	6	12	2	1	1	-	-	-	30	18	28	3
26	52	1.3	5	19	9	-	-	-	-	-	-	33	33	33	-
30	60	1.5	-	5	9	10	3	-	3	-	4	31	25	31	3
35	70	1.75	23	8	4	6	-	1	1	1	2	45	29	36	1
40	80	2.0	4	10	15	6	3	-	-	-	1	39	32	33	1
40	80	2.0	2	10	7	8	3	1	-	-	5	36	5	16	1
Totals 311	622	15.55	70	94	110	63	25	4	5	16	387	275	316	15	
per Acre -	40	-	4.5	6.05	7.07	4.05	1.61	0.25	0.32	1.06	24.91	17.7	20.3	0.24	



Appendix 12 - Table 1

Size Class Distribution of Chosen Trees RP 273

Size Distribution Chosen Trees (consistently present) RP 273C 4 Ha. (10 acres) 14.8 years from Felling

Species	Numbers of Trees in Girth Classes (Inches)						Totals	
	<10	10-14.9	15-19.9	20-24.9	25-29.9	30-39.9		40+
Parashorea malaanonan	98	88	48	24	8	6	19	291
Shorea leprosula (Ru)	4	10	11	11	4	1	1	42
S. parvifolia (Ru)	-	1	-	-	1	-	-	2
S. leptoclados (Ru)	1	-	1	-	-	-	-	2
H. Sangal	2	-	-	-	-	-	-	2
Totals	105	99	60	35	13	7	20	339
Percent in Size Class	31	29	18	10	4	2	6	100

Size Class Distribution of Chosen Trees RP 273

Size Distribution Chosen Trees (At Start) RP 273 B 4 HA (10 acres) 12.7 years from Felling

Species	Number of Trees in Girth Classes (Inches)										Total
	< 10	10-14.9	15-19.9	20-24.9	25-29.9	30-39.9	40-49.9	50+			
<i>Shorea parvifolia</i> (Ru)	28	32	23	33	30	19	5	-			170
<i>S. leprosula</i> (Ru)	21	11	9	15	8	6	1	-			71
<i>S. smithiana</i> (Ru)	16	13	4	5	-	1	-	-			39
<i>S. ovalis</i> (Ru)	9	2	2	1	1	1	-	3			19
<i>S. leptoclados</i> (Ru)	1	6	2	1	-	2	-	-			12
<i>S. oleosa</i> (Ru)	2	1	3	5	-	1	-	-			12
<i>Parashorea tomentella</i>	9	4	3	-	-	-	-	-			16
<i>Dryobalanops lanceolata</i>	9	1	-	1	-	-	-	1			12
Others: 11 species	30	3	7	4	1	-	3	1			49
Totals	125	73	53	65	40	30	9	5			400
Percent in Size Class	31	18	14	16	10	7	2	1			100

## Appendix 12 - Table 3

## Size Class Distribution of Chosen Trees RP 273

Size Distribution Chosen Trees (At Start) RP 273 A 4 HA (10 acres) 11.2 years from Felling

Species	Number of Trees in Girth Classes (Inches)								Totals
	< 10	10-14.9	15-19.9	20-24.9	25-29.9	30-39.9	40-49.9	50+	
Shorea leptoclados (Ru)	13	21	48	48	13	6	1	-	150
S. leprosula (Ru)	5	14	21	16	6	-	-	3	65
S. smithiana (Ru)	7	2	-	2	1	1	-	1	14
S. Agami (An)	1	-	1	-	-	-	-	-	2
S. parvifolia (Ru)	-	-	2	2	1	1	-	-	6
Parashorea tomentella	22	22	11	7	3	5	7	9	86
P. Malaanonan	-	-	-	-	1	-	-	-	1
Dryobalanops lanceolata	20	3	2	4	1	4	-	3	37
Dipterocarpus candiferus	18	-	4	-	-	1	-	2	25
Totals	86	62	89	79	26	18	8	18	386
Percent in Size Class	22	16	23	20	7	5	2	5	100

Miscellaneous Tables RP 273

Table 1 - Average CAI for all Chosen Trees and Best 50 Increments in RP 273 B  
Kilabakan F.R. by Year from Treatment

Treatment	Average C/A I (Inches)					
	1st Year		2nd Year		Average	
	100	50	100	50	100	50
Control	0.96	1.40	1.32	1.91	1.14	1.65
T 2	1.70	2.35	2.61	3.24	2.15	2.81
T 3	1.03	1.40	1.49	2.06	1.25	1.73
Mean, all plots	1.10	1.63	1.70	2.27	1.40	1.95

Table 2 - Average CAI for all Chosen Trees and Best 50 Increments in RP 273 A  
Segalind Loka F.R. by Year from Treatment

Treatment	Average C/A I (Inches)					
	1st Year		2nd Year		Average	
	100	50	100	50	100	50
Control	1.20	1.54	1.35	1.73	1.27	1.63
T 2	1.85	2.30	2.31	2.67	2.08	2.46
T 3	1.58	2.10	1.64	2.02	1.61	2.06
Mean, all plots	1.40	1.86	1.65	2.03	1.52	1.94

Appendix 13

Miscellaneous Tables RP 273

Table 3 - Average Crown Scores by Increments RP 273 B Kalabakan F.R.

Treatment	All Chosen Trees 25 best increments C.A.I 2.5"+ C.A.I. 3"+			
Control. Mean crown position	3.4	3.8	4.2	4.5
Mean crown shape	2.8	3.4	3.7	3.8
T 2 Mean crown position	3.2	3.4	3.5	3.6
Mean crown shape	2.2	2.5	2.7	2.5
T 3 Mean crown position	3.6	4.0	4.5	4.5
Mean crown shape	2.5	3.1	4.1	4.3

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Table 4 - Average Heights of Chosen Trees (Feet) in RP 273 B Kalabakan F. R.

Treatment	Time from F		Number per plot	
	100	12.7	100	14.2
Control	38.6	47.9	41.0	51.6
T 2	33.6	42.5	34.9	43.0
T 3	35.7	48.2	38.9	51.2
Mean, all plots	36.6	46.6	39.0	49.3
		50	50	25
		25		25

Appendix 14Management Volumes RP.273

Volume tables of limited applicability have been prepared for regenerating stands, but no generally applicable tables have been assembled.

The table used for assessment of standing timber left in felling areas (Conservator's Circular No. 3/1962) taken from the natural forest tables of Howroyd and Alabazo (1961) has been adapted to estimate volume increment coincident with bole increase by graphical smoothing to give:-

Girth Class (ins.)	<u>15</u>	<u>15-19.9</u>	<u>20-24.9</u>	<u>25-34.9</u>	<u>35-44.9</u>	<u>45-54.9</u>
Volume increment (in hoppus cu.ft) per inch of girth increment	-	0.5	0.75	1.0	1.5	2.0
Girth Class	<u>55-64.9</u>	<u>65+</u>				
Vol.increment	2.75	3.0				

The convention used here is that a tree of less than 10 inches girth has no volume and the difference in volume between classes is spread over the class. For example the 1962 table is :

<u>Class</u>	<u>Volume</u>	<u>Median Girth</u>
1 ft	4	18 inches
2 ft	13	30 inches

giving a volume difference of 9 for an average girth change of 12 inches, equivalent to an average increase of 0.75 cu.ft/inch.

Management volumes corresponding to bole sizes are as follows:

<u>Girth</u>	<u>Volume</u>	<u>Girth</u>	<u>Volume</u>	<u>Girth</u>	<u>Volume</u>
10 inches	0	30-34.9	6	55-59.9	60
10-14.9	1.5	35-39.9	23	60-64.9	75
15-19.9	4	40-44.9	30	65-69.9	90
20-24.9	7.5	45-49.9	39	70-74.9	105
25-29.9	11	50-54.9	48		

Appendix 14 - (continued....)

Application of these volumes to the plots of RP.273 B  
gives:

Table 1Hoppus Volumes Per Plot (2.5 acres) RP.273B

<u>Category</u>	<u>Years from F</u>	<u>Control</u>	<u>T2</u>	<u>T3</u>	<u>Mean</u>
All chosen trees	12.7	743	458	570	628
	14.7	880	721	723	801
Average C.A.I.		68	131	76	86
Consistent trees	12.7	707	423	551	597
	14.7	851	667	705	768
Average C.A.I		72	122	77	85
Average C.A.I. (calculated separately)		90	103	79	90
Best 50 increments	12.7	512	350	470	461
	14.7	641	547	600	607
Average C.A.I.		65	98	65	73
Average C.A.I. (calculated separately)		78	91	72	80
Largest 25 trees					
Average C.A.I. (calculated separately)		57	66	51	58

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Note: Main table entries obtained by multiplying stand table distributions (cf Appendix 12) by management volume sizes as shown above. Where C.A.I is entered as "calculated separately" this means that volume increments were obtained directly from girth increments. The entry "consistent trees" refers to chosen trees present at each measurement, and therefore, excludes new selections.

Appendix 14 - (continued.....)

Similar calculations with respect to the plots  
of RP.273A gives :

Table 2Hoppus Volumes Per Plot (2.5 acres) RP.273A

<u>Category</u>	<u>Years from F</u>	<u>Control</u>	<u>T2</u>	<u>T3</u>	<u>Mean</u>
All chosen trees	11.2	742	765	974	806
	13.2	864	973	1181	970
Average C.A.I		61	104	103	82
Consistent trees	11.2	613	716	888	707
	13.2	798	971	1099	916
Average C.A.I		92	127	105	104
Average C.A.I.(calculated separately)		82	119	103	98
Best 50 increments	11.2	416	326	459	404
	13.2	554	492	629	560
Average C.A.I		69	83	85	78
Average C.A.I.(calculated separately)		68	78	79	73
Largest 25 trees					
Average C.A.I (calculated separately)		47	46	56	49

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Equivalence for yield plot summaries is:

Girth Class	< 12	12+	24+	36+	48+	60+	72+
Vol.i/inch	0	0.5	1.0	1.5	2.0	2.75	3



Appendix 15

Sampling Errors Associated with series of Yield Plots at First Measurement

Yield Plot Series (Plots in brackets)	Statistic	Total Basal Area (sq.ft)		Measurement Parameter (Per Plot Values)		Mean Girth Overall of Crop Trees
		Mean SE%	Total trees 12" g+	Stocking (Max.100)	Stocking 12" g+	
Segalind-Lokan 1957(10)	Mean SE%	161 3.6	584 6.1	95.9 1.3	60.1 5.3	14.2 3.0
Segalind-Lokan 1959 (10)	Mean SE%	132 6.4	479 6.0	91.4 2.3	50.8 8.5	13.2 4.0
Kalabakan 1953 (5)	Mean SE%	185 18.1	495 9.4	89.6 6.8	43.2 23.6	11.9 15
Kalabakan 1955 (7)	Mean SE%	226 8.3	552 7.1	84.9 8.2	43.3 7.7	13.0 8.9
Silabukan 1954-57 (10)	Mean SE%	153 8.6	527 10.6	95.0 1.7	64.8 10.2	14.7 8.1
Kalumpang 1957-59 (10)	Mean SE%	159 11.6	439 7.3	93.5 2.1	38 14.2	10.7 9.3
Kretam 1953-54 (5)	Mean SE%	264 7.6	503 5.0	94.2 3.8	30.4 14.8	9.2 7.8
Garinono 1928 (5)	Mean SE%	275 5.2	446 2.1	82.4 4.4	46.6 5.5	13.9 5.6

APPENDIX 16

Stand Tables of Chosen Trees (Yield Plots).

Table 1	Silabukan F.R.	F 1954-57
Table 2	Silabukan F.R.	F 1961
Table 3	Kalumpang F.R.	F 1957-59
Table 4	Segaliud-lokan F.R.	F 1957
Table 5	Segaliud-lokan F.R.	F 1959
Table 6	Kretam F.R.	F 1952-54
Table 7	Garinono F.R.	F 1928
Table 8	Kalabakan F.R.	F 1953
Table 9	Kalabakan F.R.	F 1955
Table 10	Kalabakan F.R.	F 1959
Table 11	Kalabakan F.R.	F 1961

## Stand Table Chosen Trees by Size Classes Silabukan F.R. F 1954-57 Y.P.'s 1-10

## (a) First measurement.

Girth Class (ins.)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30-35.9	36-41.9	42+	Total
Plot									
Y.P.1	4	23	32	16	4	1	1	15	96
Y.P.2	11	17	28	8	6	3	3	14	90
Y.P.3	3	8	23	29	15	3	3	8	92
Y.P.4	15	12	25	15	5	7	4	16	99
Y.P.5	13	30	26	10	2	-	2	9	92
Y.P.6	2	10	34	37	7	2	1	7	100
Y.P.7	11	19	25	14	8	6	2	11	96
Y.P.8	4	8	49	23	10	-	1	5	100
Y.P.9	5	40	24	1	-	1	2	27	100
Y.P.10	42	25	10	1	1	-	1	5	85
Mean per acre	4.4	7.7	11.0	6.2	2.3	0.9	0.8	4.7	38

## (b) Second measurement.

Y.P.1	4	19	28	19	6	1	-	16	93
Y.P.2	10	19	21	10	5	5	4	15	89
Y.P.3	3	4	9	17	25	10	7	9	84
Y.P.4	11	12	24	7	9	5	4	16	88
Y.P.5	5	17	27	9	1	2	-	10	71
Y.P.6	3	6	22	38	18	5	1	7	100
Y.P.7	13	17	19	18	8	7	5	13	100
Y.P.8	5	4	34	32	16	2	-	7	100
Y.P.9	3	24	37	5	-	1	1	28	99
Y.P.10	31	28	13	3	-	-	-	3	78
Mean per acre	3.5	6.0	9.4	6.3	3.5	1.5	0.9	5.0	36

See Appendix 17 - Table 1 for times from felling

Appendix 16 - Table 2

Stand Table Chosen Trees by Size Classes Silabukan F.R. F 1961 Y.P.'s 1-5

	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	9	35	26	7	3	-	80
Y.P.2	8	32	14	15	1	1	71
Y.P.3	26	23	24	13	3	-	89
Y.P.4	50	26	12	3	2	2	95
Y.P.5	49	34	9	2	2	4	100
Mean per acre	11.3	12.0	6.8	3.2	0.9	0.6	34.8

(9.2 years from felling)

First measurement.

Stand Table Chosen Trees by Size Classes Kalumpang F.R. F 1957-59 Y.P.'s 1-10

(a) First measurement.

Girth Class (ins.)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	18	41	22	9	-	5	95
Y.P.2	53	36	3	1	-	3	96
Y.P.3	18	19	27	17	5	3	89
Y.P.4	18	22	37	9	-	7	93
Y.P.5	22	15	10	25	14	5	91
Y.P.6	14	22	21	14	2	6	79
Y.P.7	32	35	16	2	4	11	100
Y.P.8	58	17	2	9	4	9	99
Y.P.9	39	39	12	3	1	4	98
Y.P.10	19	18	28	13	7	10	95
Mean per acre	11.6	10.6	7.1	4.1	1.5	2.5	37.4

(b) Second measurement.

	30-35.9	36-41.9	42+	Total
Y.P.1	1	1	1	93
Y.P.2	-	-	3	93
Y.P.3	2	2	3	89
Y.P.4	-	2	5	92
Y.P.5	10	3	5	89
Y.P.6	2	-	5	67
Y.P.7	2	-	10	93
Y.P.8	2	-	9	93
Y.P.9	-	-	4	94
Y.P.10	5	1	9	91
Mean per acre	1.0	0.4	2.2	35.8

See Appendix 17 - Table 2 for times from felling.

## Appendix 16 - Table 4

## Stand Table Chosen Trees by Size Classes Segaliud-lokan F.R. F 1957 Y.P.'sl-10

## (a) First measurement.

Girth Class (ins)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	6	19	39	21	6	9	100
Y.P.2	8	29	28	14	5	11	95
Y.P.3	9	30	34	7	4	8	92
Y.P.4	10	15	40	22	4	8	99
Y.P.5	14	27	34	13	1	8	97
Y.P.6	15	27	27	13	3	7	92
Y.P.7	7	17	35	28	2	11	100
Y.P.8	17	35	30	6	3	6	97
Y.P.9	11	22	16	10	7	22	88
Y.P.10	18	22	32	14	5	8	99
Mean per acre	4.6	9.7	12.6	5.9	1.6	3.9	38.3

9.3 years from felling

## (b) Second measurement.

						30-35.9	36-41.9	42+	Total
Y.P.1	4	17	19	33	13	5	1	5	97
Y.P.2	5	13	33	18	11	5	2	5	92
Y.P.3	9	25	22	21	4	2	1	6	90
Y.P.4	9	12	30	31	8	2	3	4	99
Y.P.5	10	17	29	23	6	2	1	6	94
Y.P.6	15	22	23	18	7	-	-	7	92
Y.P.7	5	16	25	31	10	2	1	9	99
Y.P.8	15	29	21	19	4	3	2	3	96
Y.P.9	6	15	21	11	10	-	4	19	86
Y.P.10	11	20	26	21	8	2	2	4	94
Mean per acre	3.6	7.4	10.0	9.0	3.2	0.9	0.7	2.7	37.5

10.9 years from felling

## (c) Third measurement.

Y.P.1	3	11	12	21	26	9	3	6	91
Y.P.2	3	9	27	24	12	9	3	7	94
Y.P.3	6	22	17	18	15	4	1	8	91
Y.P.4	4	11	12	32	21	5	4	6	95
Y.P.5	2	13	16	27	15	4	2	7	86
Y.P.6	12	14	18	21	11	4	-	7	87
Y.P.7	2	12	15	22	22	11	2	9	95
Y.P.8	5	20	22	15	8	6	-	5	81
Y.P.9	5	9	11	10	13	5	2	21	76
Y.P.10	4	16	15	24	14	4	2	6	85
Mean per acre	1.8	5.5	6.6	8.7	6.3	2.4	0.7	3.3	35.3

13.7 years from felling

## Appendix 16 - Table 5

Stand Table Chosen Trees by Size Classes Segaliud-lokan F.R. F 1959 Y.P.'s 1-10

## (a) First measurement.

Girth Class (ins)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	19	27	34	15	-	5	100
Y.P.2	23	27	13	8	3	9	83
Y.P.3	23	29	20	7	4	15	98
Y.P.4	14	25	24	9	3	5	80
Y.P.5	9	28	31	16	4	10	98
Y.P.6	11	29	29	11	5	9	94
Y.P.7	12	23	28	12	4	13	92
Y.P.8	7	10	36	21	10	8	92
Y.P.9	26	23	25	8	1	14	97
Y.P.10	16	25	27	-	2	10	80
Mean per acre	6.4	9.8	10.7	4.3	1.4	3.9	36.6

7.4 years from felling

## (b) Second measurement.

						30-35.9	36-41.9	42+	Total
Y.P.1	15	25	26	20	6	1	1	3	97
Y.P.2	18	31	12	7	5	2	4	5	84
Y.P.3	22	30	11	9	9	2	2	13	98
Y.P.4	14	18	23	12	5	2	-	5	79
Y.P.5	9	20	23	25	8	3	3	4	95
Y.P.6	12	26	31	11	5	4	1	4	94
Y.P.7	13	11	29	16	8	3	3	7	90
Y.P.8	4	12	27	23	14	7	-	6	93
Y.P.9	22	21	25	11	2	3	1	9	94
Y.P.10	15	24	21	9	1	3	3	3	79
Mean per acre	5.8	8.7	9.1	5.7	2.5	1.2	0.7	2.4	36.1

8.9 years from felling

## (c) Third measurement.

Y.P.1	12	21	11	26	16	2	2	4	94
Y.P.2	16	29	9	9	8	1	4	5	81
Y.P.3	17	34	12	9	7	2	2	12	95
Y.P.4	9	15	22	15	9	2	1	5	78
Y.P.5	8	15	20	16	20	8	4	6	97
Y.P.6	13	15	25	23	10	3	2	4	95
Y.P.7	10	8	22	17	10	8	4	8	87
Y.P.8	4	6	24	23	17	9	1	6	90
Y.P.9	20	22	16	15	6	3	2	10	94
Y.P.10	9	18	19	13	4	1	3	5	72
Mean per acre	4.7	7.3	7.2	6.6	4.3	1.6	1.0	2.6	35.3

11.9 years from felling

## Stand Table Chosen Trees by Size Classes Kretam F.R. F. 1952-54 Y.P.'s 1-6 (no. 4)

82

## (a) First measurement.

Girth Class (ins.)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	52	12	4	-	1	12	81
Y.P.2	57	9	8	4	4	11	93
Y.P.3	28	27	13	7	5	20	100
Y.P.5	39	26	15	6	2	9	97
Y.P.6	53	16	7	6	4	14	100
Mean per acre	18.3	7.2	3.8	1.8	1.3	5.3	37.7

## (b) Second measurement.

	30-35.9	36-41.9	42+	Total					
Y.P.1	50	14	2	1	8	80			
Y.P.2	54	8	5	5	7	89			
Y.P.3	22	26	16	6	7	14	99		
Y.P.5	34	19	18	7	5	3	89		
Y.P.6	42	20	8	6	4	2	11	95	
Mean per acre	16.2	7.0	3.9	2.0	1.7	1.3	0.7	3.4	36.2



Stand Tables Chosen Trees by Size Classes Garinono F 1928 Y.P.'s 1-5.

First measurement. (a) All trees by species.

Girth Class (feet)	1	1	2	3	4	5	6	7	8	Total
Parashorea tomentella	47	59	12	7	1	3	1	1	-	131
Parashorea malaanonan	6	3	-	1	-	-	-	-	1	11
Shorea leptoclados	14	2	2	3	5	6	2	2	1	37
Shorea leprosula	9	8	11	6	3	-	-	-	-	37
Shorea parvifolia	14	7	7	3	3	1	-	-	-	35
Shorea smithiana	2	2	4	-	3	1	-	-	-	12
Shorea waltonii	1	3	-	-	-	-	-	1	-	5
Hopea saugal	2	1	-	1	-	-	-	-	-	4
Dipterocarpus caudiferus	57	16	4	1	-	-	1	-	-	79
Dryobalanops lanceolata	9	18	4	1	-	-	-	2	1	35
Other species	12	9	1	-	-	-	-	-	-	22
Totals	173	128	45	23	15	11	4	6	3	408
Mean per acre	13.9	10.3	3.6	1.8	1.2	0.9	0.3	0.5	0.2	32.7

(b) By plots.

Y.P.1	38	21	12	4	5	2	2	2	1	87
Y.P.2	41	23	11	1	1	2	-	-	-	79
Y.P.3	37	35	3	7	3	3	1	1	1	91
Y.P.4	23	21	10	8	6	1	-	2	-	71
Y.P.5	34	28	9	3	-	3	-	2	1	80

## Appendix 16 - Table 8

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1953 Y.P.'s 1-5

## (a) First measurement.

Girth Class (ins)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	23	26	13	1	2	3	68
Y.P.2	25	25	17	4	5	15	91
Y.P.3	9	41	31	11	1	1	94
Y.P.4	6	22	23	12	14	23	100
Y.P.5	34	21	20	7	2	11	95
Mean per acre	7.8	10.8	8.3	2.8	1.9	4.2	35.8

13.5 years from felling

## (b) Second measurement.

						30-35.9	36-41.9	42+	Total
Y.P.1	18	26	13	1	2	-	1	4	65
Y.P.2	25	24	17	5	2	4	4	10	91
Y.P.3	9	40	27	10	3	-	-	2	91
Y.P.4	6	22	20	12	9	12	1	18	100
Y.P.5	28	29	20	8	1	1	4	7	98
Mean per acre	6.9	11.2	7.8	2.9	1.3	1.4	0.8	3.3	35.6

14.7 years from felling

## (c) Third measurement.

Y.P.1	29	21	15	4	1	-	-	3	73
Y.P.2	26	20	17	9	3	4	5	10	94
Y.P.3	12	32	31	10	1	2	-	2	90
Y.P.4	2	19	17	12	10	10	7	19	96
Y.P.5	12	27	19	9	3	2	3	8	83
Mean per acre	6.5	9.5	7.9	3.6	1.4	1.4	1.2	3.4	34.9

17.4 years from felling

Appendix 16 - Table 9

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1955 Y.P.'s 1-7

First measurement.

Girth Class (ins.)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	28	18	21	11	2	9	89
Y.P.2	46	13	9	11	-	10	89
Y.P.3	32	15	11	7	5	29	99
Y.P.4	26	23	18	15	6	10	98
Y.P.5	7	7	15	11	3	3	46
Y.P.6	26	17	16	7	6	19	94
Y.P.7	17	13	5	6	7	31	79
Mean per acre	10.6	6.1	5.4	3.9	1.7	6.3	34.0

11.7 years from felling

Appendix 16 - Table 10

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1959 Y.P.'s 1-10

First measurement.

Girth Class (ins.)	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Plot							
Y.P.1	17	25	18	25	11	4	100
Y.P.2	30	38	9	7	4	2	90
Y.P.3	21	21	22	17	7	8	96
Y.P.4	11	30	27	16	7	8	92
Y.P.5	43	26	9	5	2	5	88
Y.P.6	19	21	24	10	13	9	96
Y.P.7	35	36	13	9	2	3	98
Y.P.8	25	24	24	15	6	6	100
Y.P.9	26	24	18	11	9	8	96
Y.P.10	29	31	16	12	6	3	97
Mean per acre	10.2	11.0	7.2	5.1	2.7	1.9	38.1

Appendix 16 - Table 11

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1961 Y.P.'s 1-5

First measurement.

Plot	1-5.9	6-11.9	12-17.9	18-23.9	24-29.9	30+	Total
Y.P.1	11	25	11	14	5	4	70
Y.P.2	17	14	5	2	-	7	45
Y.P.3	21	26	21	16	1	5	90
Y.P.4	17	28	18	14	6	-	83
Y.P.5	10	16	11	10	10	7	64
Mean per acre	6.1	8.7	5.3	4.5	1.8	1.8	28.2

9.1 years from felling

APPENDIX 17

Mean Girths of Abundant Chosen Tree Species

All measurements in inches. (Yield Plots)

Table 1	Silabukan F.R. F 1954-57
Table 2	Kalunpang F.R. F 1957-59
Table 3	Segaliud-lokan F.R. F 1957
Table 4	Segaliud-lokan F.R. F 1959
Table 5	Kretam F.R. F 1952-54
Table 6	Kalabakan F.R. F 1953
Table 7	Kalabakan F.R. F 1955
Table 8	Kalabakan F.R. F 1959
Table 9	Kalabakan F.R. F 1961

Appendix 17 - Table 1

Mean Girths of Most Abundant Chosen Tree Species Silabukan F 1954-1957

(a) First measurement ( 48 ins. g). (All measurements in inches girth)

Species	Y.P.	1	2	3	4	5	6	7	8	9	10
Parashorea malaanonan	14.3	14.4	22.0	16.5	10.1	18.0	15.4	15.8	13.3	5.5	
Shorea leprosula	20.3	15.7	20.0	-	18.7	17.4	18.9	17.1	12.5	10.5	
Dryobalanops lanceolata	-	10.7	-	14.8	-	20.0	-	-	-	-	
Shorea parvifolia	21.9	21.6	18.7	25.0	-	-	-	-	-	-	
Shorea leptoclados	-	16.5	18.3	-	-	-	-	-	-	-	
Overall plot mean	15.6	14.8	19.8	15.8	11.7	17.7	16.2	16.2	13.2	6.1	
Time from felling (years)	12.8	10.9	10.9	13.0	12.9	12.1	12.0	13.0	13.0	14.0	

(b) Second measurement.

Parashorea malaanonan	15.1	17.0	23.0	20.0	12.2	18.9	17.0	18.5	15.1	6.8	
Shorea leprosula	23.7	15.9	25.7	-	22.0	20.9	20.9	20.5	16.9	11.2	
Dryobalanops lanceolata	-	11.5	-	14.0	-	21.5	-	-	-	-	
Shorea parvifolia	20.7	25.5	24.1	27.7	-	-	-	-	-	-	
Shorea leptoclados	-	17.9	23.9	-	-	-	-	-	-	-	
Overall plot mean	16.7	16.8	24.2	17.2	14.4	20.0	17.9	18.9	15.0	7.2	
Time from felling (years)	15.6	13.6	13.6	15.7	15.7	14.7	14.7	15.5	15.7	16.7	

Appendix 17 - Table 2

Mean Girths of Most Abundant Chosen Tree Species Kalumpang F.R. F 1957-59

(a) First measurement ( 48 ins. g) (All measurements in inches girth)

Species.	Y.P.	1	2	3	4	5	6	7	8	9	10
Parashorea malaanonan		7.8	4.8	12.4	6.5	10.4	7.5	8.1	7.2	3.3	12.1
Shorea leprosula		15.2	9.2	16.5	14.2	20.1	14.3	10.9	4.1	9.6	11.1
Shorea parvifolia		12.2	15.6	11.2	12.2	23.5	10.3	7.7	5.4	6.0	13.4
Shorea leptoclados		12.8	-	-	-	-	-	-	-	9.2	15.6
Overall plot mean		10.8	5.4	13.2	11.7	14.9	12.0	9.8	6.9	8.1	14.5
Time from felling (years)		9.6	9.7	8.7	8.8	7.8	7.8	7.8	7.8	9.6	9.6

(b) Second measurement.

Parashorea malaanonan	9.7	6.3	14.8	7.2	12.2	9.8	8.0	7.4	3.7	13.2
Shorea leprosula	19.1	13.7	21.0	17.0	26.0	19.9	12.5	5.3	9.9	14.3
Shorea parvifolia	15.3	28.1	15.9	16.3	28.7	16.6	10.1	7.4	7.6	14.8
Shorea leptoclados	16.1								12.6	23.3
Overall plot mean	13.5	7.0	16.9	13.9	18.5	15.9	11.1	8.2	8.9	17.0
Time from felling (years)	12.8	12.8	11.9	11.9	10.9	10.9	10.9	10.9	12.8	12.8



Appendix 17 - Table 3

Mean Girths of Most Abundant Chosen Tree Species Segaljud-Jokan F.R. F1957

(a) First measurement ( 48 ins. g) (All measurements in inches girth)

Species.	Y.P. 1	2	3	4	5	6	7	8	9	10
Parashorea tomentella	12.8	12.0	12.2	14.8	9.7	9.1	16.2	11.3	15.2	10.6
Shorea leptoclados	16.3	14.7	14.4	15.5	15.1	-	18.9	-	15.3	14.2
Shorea leprosula	14.4	16.0	17.0	14.2	15.5	16.1	14.9	15.4	13.4	15.6
Dipterocarpus caudiferus	16.7	16.5	7.3	-	21.6	7.5	-	7.9	12.7	19.3
Dryobalanops lanceolata	-	12.0	-	10.6	5.6	18.3	14.5	10.5	17.9	10.9
Overall plot mean	15.0	14.5	13.9	15.1	13.9	12.6	15.7	11.7	15.8	13.9
	9.3 years from felling									

(b) Second measurement.

Parashorea tomentella	15.1	14.8	13.2	16.3	11.7	10.4	16.3	14.0	16.6	13.4
Shorea leptoclados	21.0	18.8	17.3	18.5	19.5	-	23.1	-	18.7	16.8
Shorea leprosula	19.5	18.9	19.3	17.9	18.3	19.9	18.1	19.4	16.3	18.8
Dipterocarpus caudiferus	17.7	18.0	7.6	15.3	27.2	8.2	9.3	8.4	11.7	16.6
Dryobalanops lanceolata	-	-	-	12.4	6.9	18.3	-	9.5	22.6	12.5
Overall plot mean	18.4	17.8	15.6	17.2	17.0	14.1	17.9	14.0	18.3	16.1
	10.9 years from felling									

(c) Third measurement.

Parashorea tomentella	17.2	16.4	16.1	19.1	15.3	16.3	20.4	16.0	17.9	16.8
Shorea leptoclados	25.3	23.7	20.3	23.7	24.5	28.4	28.4	30.2	24.3	20.1
Shorea leprosula	20.9	22.2	23.7	19.5	21.9	20.8	20.8	21.9	21.2	22.4
Dipterocarpus caudiferus	24.1	19.3	8.3	16.3	25.9	-	-	8.3	21.3	19.9
Dryobalanops lanceolata	12.7	-	17.7	17.4	13.6	20.1	20.1	15.2	28.5	14.6
Overall plot mean	21.8	19.9	18.1	20.9	20.5	16.3	21.6	16.9	21.7	19.4
	13.7 years from felling									

## Mean Girths of Most Abundant Chosen Tree Species Segaliud-lokan F.R. F 1952

(a) First measurement ( 48 ins. g) (All measurements in inches girth)

Species.	Y.P.	1	2	3	4	5	6	7	8	9	10	
Parashorea tomentella		9.1	13.6	13.6	10.7	18.2	10.4	13.2	13.0	10.7	14.1	
Shorea leptoclados		14.2	13.1	16.9	16.3	14.0	14.1	12.4	18.5	11.2	-	
Shorea leprosula		14.8	-	-	12.8	-	14.0	16.3	13.9	15.2	15.6	
Dipterocarpus caudiferus		-	14.1	12.0	6.6	11.8	14.1	-	8.7	15.4	7.5	
Dryobalanops lanceolata		8.1	6.9	7.2	10.0	19.5	13.7	8.1	-	3.1	12.6	
Overall plot mean		11.4	11.7	12.2	12.3	15.1	13.6	14.7	16.5	11.7	12.3	
		7.4 years from felling										

(b) Second measurement.

Parashorea tomentella		11.3	14.6	14.3	12.4	18.6	10.4	14.2	17.7	11.7	15.5	
Shorea leptoclados		18.5	16.7	19.0	19.1	17.6	16.9	15.8	21.6	14.1	-	
Shorea leprosula		16.7	21.7	-	16.4	-	16.5	17.9	17.3	16.9	17.4	
Dipterocarpus caudiferus		17.2	13.7	14.2	7.2	10.6	14.9	24.3	9.3	11.3	8.9	
Dryobalanops lanceolata		12.3	8.3	9.0	13.1	20.8	13.4	8.4	9.7	6.5	11.3	
Overall plot mean		14.7	12.9	13.7	14.6	17.4	14.6	15.8	18.7	12.5	13.2	
		8.9 years from felling										

(c) Third measurement.

Parashorea tomentella		12.0	17.8	14.8	14.5	19.0	12.0	16.4	19.4	13.7	15.1	
Shorea leptoclados		23.9	21.5	22.3	22.8	22.4	20.8	19.5	22.8	-	21.3	
Shorea leprosula		19.4	17.7	15.4	18.0	-	19.8	21.7	18.4	20.3	21.3	
Dipterocarpus caudiferus		-	14.5	12.7	8.3	14.9	19.7	23.3	10.8	15.3	10.5	
Dryobalanops lanceolata		13.3	8.6	11.5	9.5	22.1	13.8	11.9	12.4	4.2	12.7	
Overall plot mean		17.7	13.9	14.4	16.3	19.9	16.8	18.9	20.2	14.2	15.9	
		11.9 years from felling										

Appendix 17 - Table 5

Mean Girths of Most Abundant Chosen Tree Species Kretam F.R. F 1952-54

(a) First measurement ( 48 ins. g) (All measurements in inches girth)

Species.	Y.P.	1	2	3	5	6
Parashorea tomentella	36.5		2.7	10.4	6.0	2.1
Eurideroxylon zwageri	6.4	7.4				
Shorea parvifolia	1.0	2.5	10.9			
Dryobalanops lanceolata			7.8	8.0	9.9	
Dipterocarpus caudiferus			11.4	8.5	16.3	
Shorea leptoclados			29.2		3.5	
Overall plot mean	7.2	8.5	11.6	9.5	9.2	
Time from felling (years)	14.4	14.4	12.5	13.5	13.5	

(b) Second measurement.

Parashorea tomentella	35.7		3.6	11.7	7.5	
Eurideroxylon zwageri	6.9	8.4		6.7	3.2	
Shorea parvifolia		4.5	15.8			
Dryobalanops lanceolata			9.1	8.6	7.7	
Dipterocarpus caudiferus			12.3	10.6	15.5	
Shorea leptoclados			29.4		7.2	
Overall plot mean	7.8	9.0	13.5	11.0	10.1	
Time from felling (years)	17.9	17.9	15.9	16.9	16.9	

Appendix 17 - Table 6

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F 1952

(a) First measurement ( 48 ins. g) (All measurements in inches girth)

Species.	Y.P.	1	2	3	4	5
Parashorea tomentella		8.1	5.5	10.1	13.7	6.7
Shorea parvifolia		10.5	10.4	11.4	17.6	14.0
Shorea leptoclados		-	15.0	13.4	-	-
Dryobalanops lanceolata		-	12.9	4.6	19.6	-
Shorea leprosula		-	-	12.0	-	9.6
Overall plot mean		7.8	12.2	11.3	17.1	11.1
Time from felling (years)		13.5				

(b) Second measurement.

Parashorea tomentella	8.8	6.0	9.4	14.1	7.9
Shorea parvifolia	10.7	11.2		18.8	12.5
Shorea leptoclados		16.1	13.9	19.8	
Dryobalanops lanceolata		11.7	4.6		
Shorea leprosula		12.6	12.6		10.0
Overall plot mean	9.9	12.8	11.5	18.1	11.5
Time from felling (years)	14.7				

(c) Third measurement.

Parashorea tomentella	7.8		11.1	16.1	9.3
Shorea parvifolia	12.1	12.7	13.7	21.1	15.4
Shorea leptoclados		18.4	15.6		19.0
Dryobalanops lanceolata		10.3	4.7	21.1	
Shorea leprosula			14.3		
Overall plot mean	8.2	12.6	11.9	20.3	14.2
Time from felling (years)	17.4				

Appendix 17 - Table 7

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F.R. F 1955

First measurement ( 48 ins.g) (All measurements inches girth)

Species	Y.P.	1	2	3	4	5	6	7
Parashorea mahaanonan		8.9	6.9	9.0	12.1	4.2	10.3	14.9
Parashorea tomentella		10.5	9.2	8.3	-	-	9.2	16.5
Shorea leprosula		13.8	13.2	-	10.0	15.7	-	44.0
Shorea parvifolia		17.4	11.4	-	14.4	17.2	12.0	20.4
Eusideroxylon zwageri		7.9	11.7	22.2	3.9	-	13.7	19.7
Overall plot mean		11.1	8.9	14.3	11.6	14.3	12.5	18.5
Time from felling (years)		11.1	12.1	12.1	12.1	12.1	11.1	11.1

Appendix 17 - Table 8

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F.R. F 1959

Species	First measurement ( 48 ins g)									
	Y.P. 1	2	3	4	5	6	7	8	9	10
<i>Shorea parvifolia</i>	19.5	10.3	15.0	15.9	7.4	19.9	9.9	15.7	13.4	15.0
<i>Shorea leptoclados</i>	15.3	10.9	15.8	-	-	17.9	13.4	-	21.2	-
<i>Dryobalanops lanceolata</i>	-	7.8	6.1	5.9	5.2	5.3	8.7	10.9	11.3	8.3
<i>Shorea leprosula</i>	-	-	-	16.3	11.5	-	-	12.9	16.2	15.3
<i>Parashorea tomentella</i>	-	8.6	8.2	7.6	10.7	-	5.3	-	-	6.1
<i>Shorea oleosa</i>	11.3	9.2	22.0	-	-	18.0	-	15.4	-	-
Overall plot mean	14.5	9.2	14.4	13.5	8.5	15.4	8.9	13.2	13.6	10.5
	10.9 years from felling									

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- Table 9

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F.R. F 1961

Species	First measurement ( 48 ins. g)				
	Y.P. 1	2	3	4	5
<i>Shorea parvifolia</i>	14.7	-	14.2	11.9	17.3
<i>Shorea leptoclados</i>	17.0	-	-	12.7	18.9
<i>Shorea leprosula</i>	22.0	-	15.6	-	-
<i>Dryobalanops lanceolata</i>	-	13.1	-	-	21.4
<i>Parashorea tomentella</i>	-	10.6	-	-	13.3
Overall plot mean	13.8	13.2	12.4	11.7	16.1
	9.1 years from felling				

APPENDIX 18

Average Current Annual Increments (Yield Plots)

Table 1	Silabukan F 1954-57
Table 2	Silabukan RP 45
Table 3	Kalumpang F 1957-59
Table 4	Segaliud-lokan F 1957
Table 5	Segaliud-lokan F 1959
Table 6	Kretam F 1952-54
Table 7	Garinono F 1928
Table 8	Kalabakan F 1953

Appendix 18 - Table 1.

Average Current Annual Increments of Girth Silabukan F.R. F. 1954-57 Y.P.'s 1-10

Over the Period 1968-1971

(a) All Chosen Trees (nos. in brackets).

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
<i>ashorea malaanonan</i>	0.16(52)	0.54(91)	0.76(152)	1.00(60)	1.26(30)	1.47(14)	1.59(12)	1.48(12)	1.50(23)	2.07(12)	1.70(24)	0.89(483)
<i>area leprosula</i>	0.28(3)	0.75(5)	0.75(34)	1.23(70)	1.74(47)	2.34(14)	2.73(4)	2.46(2)	2.59(2)	1.18(2)	0.95(5)	1.38(188)
<i>area parvifolia</i>	-	0.18(2)	0.83(5)	1.38(4)	1.67(7)	2.29(3)	2.70(2)	1.62(1)	-	1.27(2)	2.05(3)	1.53(29)
<i>area leptoclados</i>	0.29(1)	-	0.65(5)	1.07(2)	2.09(2)	-	3.43(1)	-	2.33(2)	3.64(1)	2.27(5)	1.63(18)
<i>obalanops lanceolata</i>	0.37(13)	0.28(8)	0.38(10)	0.58(4)	-	0.11(1)	1.09(1)	-	0.62(1)	2.32(1)	1.32(4)	0.58(45)
<i>terocarpus caudiferus</i>	0.03(2)	0.11(1)	0.65(5)	1.01(1)	-	0.72(2)	1.59(1)	-	-	0.87(2)	1.65(3)	0.74(15)
chosen tree species	0.20(72)	0.52(112)	0.73(218)	1.11(45)	1.56(87)	1.80(35)	1.97(21)	1.62(15)	1.61(28)	1.89(21)	1.68(44)	1.04(799)

(b) 2 Leading Dominants per Chain Square.

<i>ashorea malaanonan</i>	0.14(13)	0.77(26)	0.76(59)	1.06(38)	1.29(25)	1.52(12)						
<i>area leprosula</i>	-	0.78(1)	0.70(8)	1.21(45)	1.68(38)	2.34(14)						
<i>area parvifolia</i>	-	-	0.51(3)	1.95(1)	1.54(3)	2.29(3)						
<i>area leptoclados</i>	-	-	0.77(3)	0.25(1)	-	-						
<i>obalanops lanceolata</i>	0.18(2)	0.11(2)	0.48(7)	0.76(2)	-	0.11(1)						
<i>terocarpus caudiferus</i>	0.00(1)	0.00(1)	0.32(2)	1.01(1)	-	0.80(1)						
species	0.12(17)	0.73(32)	0.70(86)	1.03(90)	1.56(67)	1.87(32)						
									Remainder as (a)			



Appendix 18 - Table 2

Average Current Annual Increments of Girth Silabukan F.R. RP 45 1966-71.

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	Overall
Shorea leprosula	-	0.04(1)	0.69(1)	0.90(20)	1.15(16)	1.98(18)	2.60(3)	3.04(1)	1.40(60)
Parashorea malaanonan	0.29(3)	0.50(16)	0.65(21)	0.94(16)	1.23(13)	1.74(4)	-	2.50(3)	0.90(76)
All species	0.25(4)	0.26(25)	0.65(29)	0.91(42)	1.08(38)	1.89(27)	2.65(4)	2.52(5)	1.05(174)

- Table 3

Average C.A.I. of Girth Kalumpang F.R. F 1957-59 Y.P.'s 1-10  
Over period 1967-70

(a) All Chosen Trees.

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72*	Overall
Parashorea malaanonan	0.22(105)	0.47(62)	0.96(32)	0.79(16)	1.33(15)	2.04(8)	2.38(6)	2.63(3)	1.90(7)	1.40(5)	1.65(11)	0.71(270)
Shorea leprosula	0.20(17)	0.46(35)	0.92(50)	1.45(59)	1.91(30)	2.17(8)	2.27(1)	1.89(2)	0.44(1)	-	-	1.15(203)
Shorea parvifolia	0.32(31)	0.67(47)	1.11(53)	1.48(30)	1.71(6)	1.99(3)	-	0.39(2)	0.87(1)	1.71(1)	-	1.46(174)
Shorea leptodados	0.14(7)	0.50(6)	1.02(8)	1.62(17)	1.92(8)	2.33(3)	1.82(1)	-	2.03(2)	-	-	1.31(52)
All chosen tree species	0.25(97)	0.50(77)	0.99(149)	1.34(32)	1.71(61)	2.03(24)	2.25(9)	1.14(13)	1.69(11)	1.27(12)	1.62(12)	0.89(797)

(b) 2 Leading Dominants per Chain Square.

Parashorea malaanonan	0.32(22)	0.58(30)	0.98(19)	0.79(16)	1.26(14)	2.04(8)	Remainder as (a)					
Shorea leprosula	0.12(5)	0.36(14)	1.06(30)	1.50(46)	1.95(26)	2.17(8)						
Shorea parvifolia	0.37(10)	0.67(22)	1.16(35)	1.55(22)	1.60(5)	1.99(3)						
Shorea leptodados	-	-	0.64(3)	1.68(13)	1.92(8)	2.33(3)						
All species	0.31(45)	0.53(84)	1.06(89)	1.37(66)	1.70(55)	2.03(24)						

Appendix 18 - Table 4

Average Current Annual Increments of Girth Segalind-lokan F.R. 1957, Y.P.'s 1-10

Over the Period 1968-71.

(a) All chosen trees (nos. in brackets).

Species.	Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
Parashorea tomentella	0.07(7)	0.41(51)	0.74(66)	1.22(48)	1.52(14)	1.82(10)	1.13(4)	0.94(5)	2.43(6)	0.36(1)	0.50(1)	0.91(215)	
Shorea leptoclados	-	0.66(6)	0.75(22)	1.32(52)	1.73(77)	2.12(23)	2.57(3)	3.11(1)	-	1.52(1)	-	1.52(186)	
Shorea leprosula	-	0.23(2)	0.75(18)	1.19(48)	1.49(27)	2.25(9)	2.25(1)	-	1.53(3)	1.52(1)	-	1.28(109)	
Shorea parvifolia		0.47(3)	0.98(5)	1.35(13)	1.62(8)	2.10(5)	-	-	-	-	-	1.39(34)	
Shorea waltonii		0.03(1)	0.74(4)	0.94(8)	1.63(4)	-	1.29(3)	-	-	-	-	3.58(1)	1.16(21)
Dipterocarpus caudiferus	0.13(9)	0.22(11)	0.17(5)	0.46(8)	0.59(5)	2.79(2)	-	0.81(3)	1.07(3)	0.96(3)	0.81(3)	0.53(52)	
Dryobalanops lanceolata	0.94(4)	0.60(15)	0.43(9)	0.67(7)	1.03(12)	1.23(2)	1.20(4)	0.63(4)	0.63(4)	1.15(6)	0.99(3)	0.80(68)	
Shorea acuminatissima	-	0.76(1)	0.61(1)	1.21(3)	-	-	-	2.26(1)	-	-	-	1.52(1)	1.25(7)
All chosen tree species	0.28(22)	0.41(95)	0.63(132)	1.19(196)	1.56(150)	1.96(58)	1.53(16)	1.08(16)	1.66(18)	1.24(13)	1.18(9)	1.12(729)	

(b) 2 Leading Dominants per Chain Square.

Parashorea tomentella	-	0.46(8)	0.71(27)	1.18(30)	1.65(13)							
Shorea leptoclados	-	0.65(2)	0.86(6)	1.39(29)	1.72(59)							
Shorea leprosula	-	-	1.23(5)	1.32(27)	1.44(21)							
Shorea parvifolia	-	0.93(1)	1.04(1)	1.60(7)	1.62(8)			Remainder as (a)				
Shorea waltonii	-	0.03(1)	1.00(1)	1.06(4)	1.63(4)							
Dipterocarpus caudiferus	-	0.54(2)	0.20(1)	0.67(5)	0.72(4)							
Dryobalanops lanceolata	-	1.46(3)	-	0.62(5)	1.06(11)							
All species	2.30(1)	0.57(17)	0.78(42)	1.25(115)	1.55(123)							



Appendix 18 - Table 6

Average Current Annual Increments of Girth Kretam F.R. F 1952-54. 5 Yield Plots

Over the Period 1966-1970

All chosen trees (nos. in brackets).

Species.	Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
Parashorea tomentella	0.16(15)	0.83(3)	0.50(4)	-	1.36(3)	-	1.05(1)	-	0.51(2)	-	1.28(2)	0.52(30)	
Eusideroxylon zwageri	0.15(89)	0.36(20)	0.38(2)	-	0.41(4)	0.00(1)	0.30(3)	0.26(2)	0.49(1)	0.69(1)	0.21(123)	0.89(16)	0.21(123)
Shorea parvifolia	0.42(2)	1.46(1)	1.54(4)	1.04(3)	-	-	-	-	-	-	-	-	0.89(16)
Shorea leptoclados	0.30(8)	0.26(2)	0.46(1)	-	0.26(2)	0.57(3)	1.37(3)	1.78(1)	0.29(1)	0.85(3)	0.72(1)	0.60(25)	0.60(25)
Dryobalanops lanceolata	0.28(25)	0.35(31)	0.44(13)	0.60(5)	-	-	-	-	-	-	-	-	0.42(76)
Dipterocarpus caudiferus	0.21(8)	0.26(15)	0.35(6)	0.61(6)	0.38(3)	-	-	-	-	-	-	-	0.36(41)
Shorea acuminatissima	0.24(4)	0.36(3)	0.80(5)	1.06(2)	1.08(3)	0.97(1)	-	-	-	-	-	-	0.71(19)
All chosen tree species	0.19(81)	0.37(82)	0.65(45)	1.04(24)	0.90(18)	0.80(13)	1.04(8)	0.83(9)	1.14(11)	1.64(7)	0.72(9)	0.47(407)	0.47(407)

Appendix 18 - Table 7

Average Current Annual Increments of Girth Garinono F.R. F 1928. 5 Y.P.'s

Over the Period 1968-1969

(a) All Chosen Trees (nos in brackets).

Species. Girth Class (ins)	1	6	12	18	24	30	36	48	60	72+	Overall
Parashorea tomentella	0.32(18)	0.64(21)	0.65(30)	0.65(20)	1.39(8)	0.67(4)	1.51(6)	0.60(1)	1.95(2)	3.70(1)	0.75(111)
Shorea leptoclados	0.43(13)	-	2.40(1)	0.67(1)	1.29(1)	3.20(1)	2.63(2)	0.94(2)	0.68(5)	1.29(3)	0.95(29)
Shorea leprosula	0.37(5)	1.03(4)	0.48(3)	0.99(5)	1.02(8)	1.27(3)	1.24(6)	1.89(3)	-	-	1.04(37)
Shorea parvifolia	0.52(9)	1.19(4)	1.31(4)	1.31(2)	0.93(4)	1.33(2)	1.62(3)	0.99(3)	0.79(1)	-	1.01(32)
Dryobalanops lanceolata	0.24(2)	0.31(7)	0.73(12)	0.29(3)	0.40(2)	1.18(2)	1.40(1)	-	-	-	0.58(29)
Dipterocarpus caudiferus	0.29(22)	0.47(25)	0.37(13)	0.35(2)	0.59(2)	0.21(1)	-	-	-	-	0.38(65)
All chosen tree species	0.40(80)	0.60(68)	0.64(72)	0.77(40)	0.98(28)	1.12(14)	1.48(20)	1.38(12)	0.92(9)	1.89(4)	0.74(347)

(b) 2 Leading Dominants per Chain Square.

Parashorea tomentella	0.14(5)	0.64(9)	0.62(17)	0.72(16)	1.61(6)	0.67(4)	1.69(5)	0.60(1)	1.95(2)	3.70(1)	0.85(66)
Shorea leptoclados	0.72(4)	-	2.40(1)	0.67(1)	1.29(1)	3.20(1)	2.63(2)	0.94(2)	0.68(5)	1.29(3)	1.24(20)
Shorea leprosula	-	-	0.48(3)	0.99(5)	1.01(7)	1.27(3)	1.21(5)	1.89(3)	-	-	1.13(26)
Shorea parvifolia	0.77(2)	1.29(3)	1.32(3)	2.12(1)	0.93(4)	2.06(1)	1.62(3)	0.99(3)	0.79(1)	-	1.22(20)
Dryobalanops lanceolata	0.10(1)	0.00(1)	0.83(10)	0.29(3)	0.70(1)	1.18(2)	-	-	-	-	0.72(19)
Dipterocarpus caudiferus	0.45(2)	0.48(10)	0.31(9)	0.35(2)	0.59(2)	0.21(1)	-	-	-	-	0.41(26)
All species	0.50(17)	0.67(28)	0.67(51)	0.83(35)	0.99(24)	1.16(13)	1.55(17)	1.38(12)	0.92(9)	1.89(4)	0.88(210)

Appendix 18 - Table 8

Average Current Annual Increments of Girth Kalabakan F.R. F 1953. 5 Y.P.'s

Over the Period 1968-1970

All Chosen Trees (nos. in brackets)

Species.	Girth Class (ins)	1	6	12	18	24	30	36	48	60	72+	Overall
<i>Shorea parvifolia</i>		0.28(4)	0.60(25)	0.80(35)	1.27(18)	1.16(10)	1.42(6)	1.30(4)	0.99(3)	-	-	0.91(105)
<i>Parashorea tomentella</i>		0.30(15)	0.39(30)	0.62(14)	0.49(3)	0.74(2)	1.31(2)	1.12(1)	-	-	0.97(2)	0.49(69)
<i>Dryobalanops lanceolata</i>		0.13(3)	0.64(7)	0.25(3)	0.37(3)	-	1.86(1)	0.75(3)	1.12(2)	1.49(1)	1.63(4)	0.79(27)
<i>Shorea leprosula</i>		0.37(1)	0.41(7)	0.92(9)	1.63(6)	-	1.68(2)	0.86(1)	-	-	-	1.01(26)
<i>Shorea leptoclados</i>		-	1.06(3)	0.61(8)	1.00(6)	1.12(3)	1.13(1)	2.26(1)	-	0.75(1)	0.95(2)	0.94(25)
All chosen tree species		0.27(33)	0.52(89)	0.70(86)	1.08(40)	1.03(16)	1.33(16)	0.92(18)	1.41(9)	1.12(2)	1.64(10)	0.77(319)

Appendix 19

Stocking Tables. Sungei Betotan IS $\frac{1}{2}$  Survey 1970

Dipterocarpaceae and other Chosen Trees

- A Nomadic Species
- B Large Trees of Natural Forests
- C Small Trees, mainly Understorey Species

Appendix 20

Size Class Tables RP 315 Garimono

- Table 1 Stand Table Before Logging
- Table 2 Trees felled and Cross-cut
- Table 3 Volume cut by Species and Sizes
- Table 4 Production by Sub-Block

## APPENDIX 19

SG. BETOTAN LS<sub>1</sub> SURVEY 1970 18 AcresAll Trees in Half Foot Classes

A. DIPTEROCARPACEAE & OTHER CHOSEN TREES	GIRTH CLASS															Total
	0 > 6"	6 > 12	12 > 18	18 > 24	24 > 30	30 > 36	36 > 42	42 > 48	48 > 54	54 > 60	60 > 66	66 > 72	72 > 78	78 > 84	84"+	
<i>Parashorea tomentella</i>	90	34	34	18	11	9	6	2	2	4	4	-	2	1	3	220
<i>Parashorea malaanonan</i>	5	3	7	7	2	1	-	-	-	-	1	-	-	-	1	27
<i>Shorea leptoclados</i>	33	6	15	10	3	6	5	8	10	8	4	3	2	-	5	118
<i>Shorea leprosula</i>	18	5	15	8	5	3	4	3	3	-	4	3	-	1	1	73
<i>Shorea parvifolia</i>	8	1	3	-	3	-	1	3	-	1	-	1	-	1	-	22
<i>Shorea smithiana</i>	2	1	2	4	5	1	1	1	-	-	1	1	-	-	-	19
<i>Shorea pauciflora</i>	1	-	1	-	-	1	-	-	-	-	-	-	-	-	2	5
<i>Shorea waltonii</i>	5	-	1	-	-	1	-	-	1	-	-	-	-	-	1	9
<i>Shorea acuminatissima</i>	1	3	4	5	2	2	1	-	-	1	-	-	-	1	-	20
<i>Shorea gibbosa</i>	-	1	5	4	-	-	1	1	-	1	-	-	-	1	2	16
<i>Shorea xanthophylla</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Shorea symingtonii</i>	1	1	1	-	5	2	-	1	-	-	-	1	-	-	-	12
<i>Shorea superba</i>	-	1	2	-	-	1	-	-	-	-	-	-	-	-	1	5
<i>Shorea agami</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Shorea leptoderma</i>	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	2
<i>Shorea sp. (SB)</i>	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2
<i>Dryobalanops lanceolata</i>	15	18	22	6	-	3	-	-	1	-	2	-	-	1	-	68
<i>Dipterocarpus eaudiferus</i>	73	28	19	5	1	1	1	4	2	3	1	1	-	4	5	148
<i>Dipterocarpus exalatus</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
<i>Hopea nervosa</i>	-	-	11	6	4	3	2	-	-	-	-	-	1	-	-	27
<i>Hopea sangal</i>	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	2
<b>Total Dipterocarpaceae</b>	<b>252</b>	<b>102</b>	<b>146</b>	<b>74</b>	<b>41</b>	<b>34</b>	<b>22</b>	<b>23</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>10</b>	<b>5</b>	<b>10</b>	<b>22</b>	<b>798</b>
<i>Musideroxylon zwagerii</i>	-	1	4	5	6	7	1	3	2	-	-	2	-	1	1	33
<b>B. ALL OTHER SPECIES RECORDED</b>	<b>0</b>	<b>0</b>	<b>543</b>	<b>373</b>	<b>202</b>	<b>121</b>	<b>84</b>	<b>44</b>	<b>49</b>	<b>31</b>	<b>20</b>	<b>17</b>	<b>8</b>	<b>9</b>	<b>11</b>	<b>1512</b>
<b>TOTAL ALL TREES</b>	<b>252</b>	<b>103</b>	<b>693</b>	<b>452</b>	<b>249</b>	<b>162</b>	<b>007</b>	<b>70</b>	<b>70</b>	<b>50</b>	<b>39</b>	<b>29</b>	<b>13</b>	<b>20</b>	<b>34</b>	<b>2343</b>



SG. BETOTAN LS<sub>2</sub> SURVEY 1970 18 Acres  
SPECIES/GIRTH CLASS FREQUENCY FOR OTHER TREES  
*(i.e. not chosen tree)* By one Foot Girth Class

A. <u>NOMADIC SPECIES</u>			1' < 2'	2' < 3'	3' < 4'	4' < 5'	5' < 6'	6' < 7'	7'+	TOTALS
<i>Anthocephalus chinensis</i>	Laran	Rubiaceae	-	3	6	12	11	5	-	37
<i>Nauclea sp.</i>	Bangkal	Rubiaceae	22	12	3	2	-	-	-	39
<i>Duabanga moluccana</i>	Magas	Sonneratiaceae	1	1	-	0	2	1	-	5
<i>Dillenia excelsa</i>	Simpor	Dilleniaceae	6	2	1	-	-	-	-	9
<i>Endospermum malaccense</i>	Sindok2	Euphorbiaceae	2	-	-	-	-	-	-	2
<i>Evadia sp.</i>	Pauh	Rutaceae	1	1	1	-	-	-	-	3
<i>Glochidion spp.</i>	Oba nasi	Euphorbiaceae	23	46	17	7	-	-	-	93
<i>Leea aculeata</i>	Mali2	Vitaceae	16	-	-	-	-	-	-	16
<i>Macaranga hypoleuca</i>	Sedaman	Euphorbiaceae	1	1	1	1	-	-	-	4
<i>Mallotus sp.</i>	-	Euphorbiaceae	17	4	-	-	-	-	-	21
<i>Octomeles sumatrana</i>	Binuang	Datisceae	-	-	-	1	-	-	-	1
<i>Pternandra caerulescens</i>	Sireh2	Melastomaceae	9	1	-	-	-	-	-	10
<i>Pterocymbium tinctorum</i>	Teluto	Sterculiaceae	2	2	1	3	-	-	-	8
<i>Pterospermum sp.</i>	Bayor	Sterculiaceae	19	20	29	23	14	4	1	110
<i>Scolopia sp.</i>	Rukam	Flacourtiaceae	1	1	-	-	-	-	-	2
<i>Symplocos sp.</i>	Loboh	Symplocaceae	16	8	1	-	-	-	-	25
<i>Memecylon</i>	Telinga basing	Melastomaceae	-	-	1	-	-	-	-	1
TOTAL A			136	102	61	49	27	10	1	386

B. LARGE TREES OF NATURAL FORESTS			1' < 2'	2' < 3'	3' < 4'	4' < 5'	5' < 6'	6' < 7'	7'+	TOTALS
Artocarpus sp.	Terap	Moraceae	2	-	1	-	-	-	-	3
Barringtonia spp.	Tampalang	Lecythidaceae	5	5	3	2	1	1	-	17
Canarium sp.	Kedondong	Burseraceae	30	4	1	1	-	-	1	37
Calophyllum sp.	Bintangor	Guttiferae	13	2	1	-	-	-	-	16
Canarium decumanum	Pamatadon	Burseraceae	-	-	-	-	-	1	-	1
Cratoxylon formosum	Geronggang	Hypericaceae	1	-	-	-	-	-	-	1
Cynometra inaequifolia	Katong2	Leguminosae	1	-	-	1	-	-	-	2
Dialium indum	Keranji	Leguminosae	-	-	-	2	-	-	-	2
Dracontomelum edule	Sengkuang	Anacardiaceae	-	-	-	-	2	-	1	3
Castanopsis molleyana	Berangan	Fagaceae	2	3	3	1	-	-	-	9
Elaeocarpus stipularis	Kungkurad	Flacocarpaceae	1	-	-	-	-	-	-	1
Heriteria sp.	Mengkulang	Sterculiaceae	-	1	-	-	-	-	-	1
Homalium foetidum	Takaliu	Flacourtiaceae	4	3	1	-	1	-	-	9
Hydnocarpus sp.	-	Flacourtiaceae	12	-	2	1	1	-	-	16
Intsia palembanica	Merbau	Leguminosae	1	-	-	-	-	-	-	1
Koodersiodendron pinnatum	Ranggu	Anacardiaceae	2	2	1	-	-	-	-	5
Lithocarpus sp.	Mempening	Fagaceae	4	2	1	-	-	-	-	7
Lophopetalum javanicum	Perupok	Celastraceae	2	-	2	1	-	-	-	5
Mangifera sp.	Mangga Hutan	Anacardiaceae	1	-	-	-	-	-	-	1
Microcos sp.	Damak2	Tiliaceae	3	2	-	-	-	-	-	5
(Meliaceae)	Lantupak	Meliaceae	105	30	5	3	1	1	-	145
Neesia altissima	Durian Munyiit	Bombacaceae	2	1	-	-	-	-	-	3
Nephelium lappaceum	Rambutan	Sapindaceae	2	1	-	-	-	-	-	3
Nephelium mutabile	Meritam	Sapindaceae	13	6	1	3	1	1	-	25
Parinari	Membatu	Rosaceae	-	-	1	2	-	-	-	3
Pentace sp.	Tekalis	Tiliaceae	26	16	-	1	-	-	-	43
Planchonia valida	Putat Paya	Lecythidaceae	-	-	-	-	-	1	2	3
(Sapotaceae)	Nyatoh	Sapotaceae	7	3	-	-	-	-	-	10
Saraca palembanica	Gapis	Leguminosae	7	4	2	-	-	-	-	13
Scorodocarpus borneensis	Bawang Hutan	Olacaceae	-	1	-	-	-	-	-	1
Sympetalandra borneensis	Merbau lalat	Leguminosae	2	-	3	1	-	-	-	6
Terminalia subspathulata	Talisai	Combretaceae	1	-	-	-	-	-	2	3
Podocarpus sp.	Kayu china	Goniferae	1	-	-	-	-	-	-	1
Sindora spp.	Sepetir	Caesalpinaceae	1	-	-	-	-	-	-	1
TOTAL B			251	86	28	19	7	5	6	402

G. SMALL TREES : MAINLY UNDERSTOREY SPECIES			1' < 2'	2' < 3'	3' < 4'	4' < 5'	5' < 6'	6' < 7'	7'+	TOTAL
<i>Aglaiia</i> sp.	Langsat2	Meliaceae	28	6	-	-	-	-	-	34
(Anonaceae)	Pisang2; Karai	Annonaceae	84	9	3	1	-	-	-	97
<i>Alangium</i> sp.	Satu Inche	Alangiaceae	3	3	-	1	-	-	-	7
<i>Baccourea bracteata</i>	Tampoi	Euphorbiaceae	26	3	-	-	-	-	-	29
<i>Baccourea stipulata</i>	Kunau2	Euphorbiaceae	9	-	-	-	-	-	-	9
<i>Buchanania sessilifolia</i>	Kepala Tundang	Anacardiaceae	1	-	-	-	-	-	-	1
<i>Carallia</i> sp.	Meransi	Rhizophoraceae	-	1	-	-	-	-	-	1
<i>Citrus</i> sp.	Limau2	Rutaceae	6	10	2	-	-	-	-	18
<i>Goeledepas brevipes</i>	Kilas	Euphorbiaceae	57	9	2	1	-	-	-	69
<i>Diospyros</i> spp.	Kayu malam	Ebenaceae	74	15	3	1	1	2	2	98
<i>Drypetes</i> spp.	Mentulang	Euphorbiaceae	4	-	-	-	-	-	-	4
<i>Eugenia</i> spp.	Obah	Myrtaceae	69	33	17	2	-	-	1	122
(Lauraceae)	Medang	Lauraceae	110	21	9	5	1	-	1	147
<i>Mallotus penangensis</i>	Kemenyen2	Euphorbiaceae	1	-	-	-	-	-	-	1
<i>Melanorrhoea</i> sp.	Rengas	Anacardiaceae	5	1	-	-	-	-	-	6
<i>Murraya paniculata</i>	Kemuning	Rutaceae	5	-	-	-	-	-	-	5
(Myristicaceae)	Darah2	Myristicaceae	10	-	-	-	1	-	-	11
<i>Paranephelium nitidum</i>	Membuakat	Sapindaceae	24	15	3	-	-	-	-	42
<i>Urophyllum</i> sp.	Kopi2	Rubiaceae	5	-	-	-	-	-	-	5
<i>Xanthophyllum</i> sp.	Minyak berok	Polygalaceae	7	2	1	-	-	-	-	10
<i>Mallotus miquellanus</i>	Ulas	Euphorbiaceae	2	-	-	-	-	-	-	2
<i>Crudia reticulata</i>	Agar2	Euphorbiaceae	2	-	-	-	-	-	-	2
<i>Microcos crassifolia</i>	Kerodong	Tiliaceae	1	1	-	-	-	-	-	2
<i>Mnisophyllea disticha</i>	Sikib2	Sapindaceae	1	1	-	-	-	-	-	2
<i>Antidesma ghaesembilla</i>	Tandurupis	Euphorbiaceae	3	-	-	-	-	-	-	3
<i>Hydnocarpus borneensis</i>	Tulang sai	Flacourtiaceae	2	-	-	-	-	-	-	2
TOTAL C			534	130	40	11	3	2	4	724
TOTAL A, B, C,			921	318	129	79	37	17	11	1512

## Stand Table Before Logging

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Species	Girth Classes										Grand Total No. of Trees			
	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'		14'	16'	25'
<i>Shorea leptoclados</i>	35	31	21	14	6	7	2	1	4	-	-	-	-	121
<i>Parashorea tomentella</i>	20	15	7	8	6	10	6	4	1	-	-	-	-	80
<i>Parashorea malaanonan</i>	1	-	-	1	1	-	-	-	-	-	-	-	-	3
<i>Shorea leprosula</i>	4	6	10	3	6	2	1	-	-	-	-	-	-	28
<i>Dryobalanops lanceolata</i>	9	10	10	10	9	2	1	-	-	-	-	-	-	52
<i>Hopea sangal</i>	-	-	1	-	3	1	1	1	-	-	-	-	-	5
<i>Shorea parvifolia</i>	6	7	2	4	1	3	1	1	1	-	-	-	-	26
<i>Dipterocarpus caudiferus</i>	10	7	13	16	7	9	4	1	1	-	-	1	-	68
<i>Shorea gibbosa</i>	3	-	2	-	2	2	2	1	1	-	-	-	-	12
<i>Shorea faguetiana</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	2
<i>Shorea waltonii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	6
<i>Eusideroxylon zwagerii</i>	11	6	5	3	6	-	2	1	-	-	-	-	-	33
<i>Shorea smithiana</i>	11	4	5	1	2	-	1	-	-	-	-	-	-	21
<i>Shorea seminis</i>	2	1	2	1	1	-	1	-	-	-	-	-	-	7
<i>Shorea superba</i>	1	-	1	1	2	-	2	-	-	-	-	-	-	5
<i>Shorea symingtonii</i>	1	-	2	-	-	-	-	-	-	-	-	-	-	3
<i>Shorea leptoderma</i>	-	-	1	-	1	-	1	-	-	-	-	-	-	2
<i>Shorea foxworthyi</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	1
<i>Shorea agami</i>	-	-	-	-	-	2	-	-	-	-	-	-	-	3
<i>Shorea pauciflora</i>	1	-	-	-	-	-	-	-	1	-	-	-	-	1
<i>Shorea ochracea</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Anisoptera grossivenia</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Grand Total	115	88	78	61	54	39	22	9	9	2	2	1	1	481

Appendix 20 Table 2 Trees Felled and Cross-cut

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Stand Table of Trees Felled & Cross Cut

Species	Girth Classes											Total			
	4	5	6	7	8	9	10	11	12	13	14		16	25	
<i>Shorea leptoclados</i>		4	11	12	6	6	2	1	4						46
<i>Parashorea tomentella</i>		1	3	5	5	10	6	4	1						36
<i>Dipterocarpus caudiferus</i>			3	12	4	7	3	1				1			31
<i>Dryobalanops lanceolata</i>			3	5	6	2	1	1							17
<i>Shorea leprosula</i>			2	3	6	2	1								14
<i>Shorea parvifolia</i>		2	1	4	1	3	1	1	1						14
<i>Hopea sangal</i>			1		3										4
<i>Shorea gibbosa</i>					1	1						1			3
<i>Shorea faguetiana</i>															2
<i>Shorea waltonii</i>					2		1				1				4
<i>Shorea seminis</i>					1		1								2
<i>Shorea agami</i>								2							3
<i>Shorea smithiana</i>			2												3
<i>Shorea superba</i>				1											1
<i>Parashorea malaanonan</i>					1										1
<i>Anisoptera grossivenia</i>													1		1
<i>Shorea ochracea</i>									1						1
Totals	-	7	26	42	37	34	16	8	8	1	2	1	1	183	

Hoppus Volumes Cut by Species and Size Classes *Table 3*

Species	Volume by Girth Breast Height Size Classes											Total	%
	<6'	6-6'11"	7'-7'11"	8-8'11"	9-9'11"	10-10'11"	11-11'11"	12'+					
Parashorea tomentella } White Parashorea malaanonan } seraya	-	365	670	956	2,819	1,896	1,352	1,058	9,117	22.5			
Shorea leptoclados	252	1,247	1,744	968	1,506	796	307	2,039	8,859	21.9			
Shorea leprosula	-	308	538	1,260	359	365	-	-	2,831	7.0			
Shorea parvifolia	88	210	457	189	762	198	407	434	2,745	6.8			
Shorea smithiana	-	242	127	-	-	-	-	-	370	0.9			
Shorea waltonii	-	-	-	409	-	357	-	278	1,045	2.6			
Total Red Serayas	340	2,006	2,867	2,827	2,627	1,725	714	2,751	15,849	39.2			
Shorea faguetiana } Yellow Shorea gibbosa } seraya	-	-	-	-	267	-	-	453	719	1.8			
Dipterocarpus caudiferus Keruing	-	279	1,784	940	1,628	1,047	414	772	6,864	17.0			
Dryobalanops lanceolata Kapur	-	420	872	1,189	537	-	253	-	3,270	8.1			
Shorea agami Melapi	-	-	-	-	614	305	-	591	1,510	2.3			
Anisoptera costata Pengiran	-	-	-	-	-	-	-	785	785	3.4			
Hopea sangal Gagil	-	88	-	801	-	-	-	-	889	2.2			
Shorea seminis } Selangan Shorea superba } batu	-	-	-	156	-	253	-	-	409	1.0			
	-	-	-	197	-	-	-	-	197	0.5			

## Appendix 20 Table 4

Production By Sub-Block

R.P.315

Sub-Block No.	No. of Trees Cut	No. of Logs Cut	No. of Commercial 4'+ on Block not Cut + = Belian		Hoppus Volume Per Acre
1	16	34	11		1,867.2
2	13	23	12	+3	1,191.0
3	9	18	14	+3	991.1
4	10	13	19		809.9
5	7	14	12	+2	524.5
6	6	8	12		468.6
7	13	25	10	+2	842.0
8	9	16	7	+2	572.4
9	11	22	12	+6	896.9
10	12	26	12	+4	1,072.2
11	7	14	16	+1	668.0
12	7	14	8	+1	774.3
13	2	3	17		207.3
14	4	8	10		282.6
15	6	15	13	+1	556.7
16	19	37	12	+4	1,824.7
17	5	10	22	+3	450.7
18	8	17	23		754.2
19	6	10	19		406.9
20	13	23	4	+1	1,339.1
Totals	183	350	265	+33	16,500.3
Mean	9.15	17.5	13.25	1.65	808.99

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