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**KEY TO THE MOST IMPORTANT NATIVE  
TREES OF IRIAN BARAT (INDONESIA)  
BASED ON FIELD CHARACTERS**

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## I. INTRODUCTION

In 1958 the present author constructed a key for the identification of the most important native trees of Irian Barat (Indonesia), based on field characters. The mimeographed key was written in Dutch for internal use of the Department of Forestry only.

Irian Barat still belongs to the most unknown areas of the world. There was an urgent need to identify the most important trees during the explorations. It was found impossible, however, to do this quickly, due to the lack of a flora. Moreover, consultation of the herbarium and wood samples would have taken too much time. Ir. J. F. U. Zieck, at that time Chief of the Subdivision of Forest Planning in Irian Barat, instructed the author to make a simple identification key, which could be used by everybody. This table proved to be useful and it was decided to prepare a new edition in a more widely accessible language. This new edition has been modified but was kept as simple as possible. Twenty-eight species have been added, bringing the total number of species described up to 108. A glossary of the terms used is taken from "Suggested definitions of field characters" by J. WYATT-SMITH, published in *Malayan Forest Record* No 17, and for each species a standardized description of the field characters is given at the end of the key. The general english trade names are in accordance with W. BOERHAVE-BEEKMAN, *Wood Dictionary I* (1964).

The species concerned are found in the Northern part of Irian Barat, but this does not mean that this key cannot be used in other parts of New Guinea and in surrounding areas where the same groups of species occur. It is most strongly emphasized that the key can be used only when fresh bark of trees with a diameter of at least 40 cm at breast height is available. For trees of smaller dia-

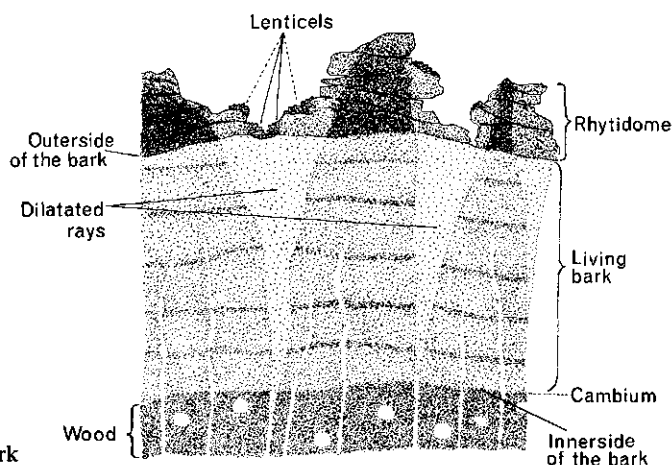
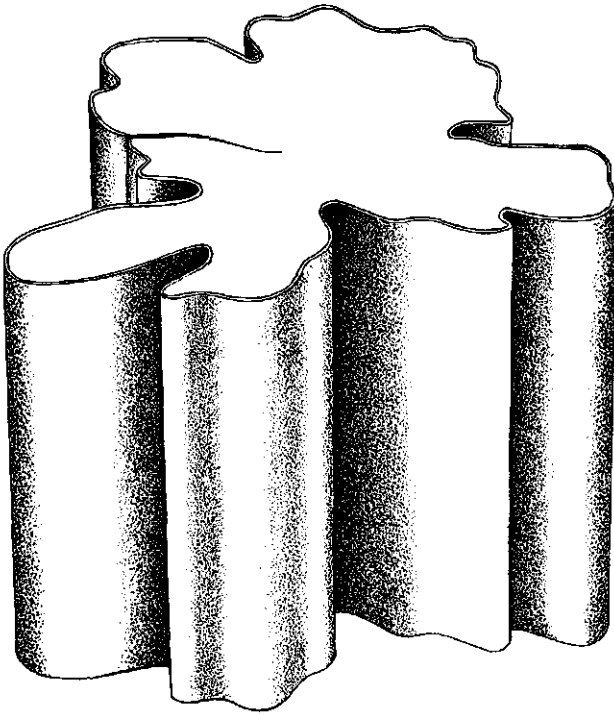


PLATE 1.  
Cross section of the bark



meter it cannot be used because of considerable differences in general appearance of the bark. The bark must be taken from a part of the bole free from buttresses or stilt roots. In the following key field characters of the tree such as buttresses, red colouring of the old leaves, etc. are used in addition to the bark features. It is recommended to check the description at the end of the key, after the determination of a species has been made.

I wish to thank Mr. F. H. Hildebrand who has checked the scientific names and Dr. W. Vink, both from the Rijksherbarium at Leiden, for their help in preparing the manuscript.

## II. METHODS

A card with field notes was made for each tree separately; of each species 4 or 5 trees were studied. The trees were taken from the inventory lines made by the forestry service. The field characters were noted down from the standing trees. Herbarium material was collected after cutting down the trees and subsequently sent to the Rijksherbarium at Leiden for identification. A piece of bark with wood attached was taken from a suitable part of the bole. A transverse section of the bark (without wood) was made with a sharp knife and the characters observed were noted down. All observations were registered in the field.



PLATE 3. The stem of *Koordersiodendron pinnatum* Merr. with symmetrical buttresses and fissured bark

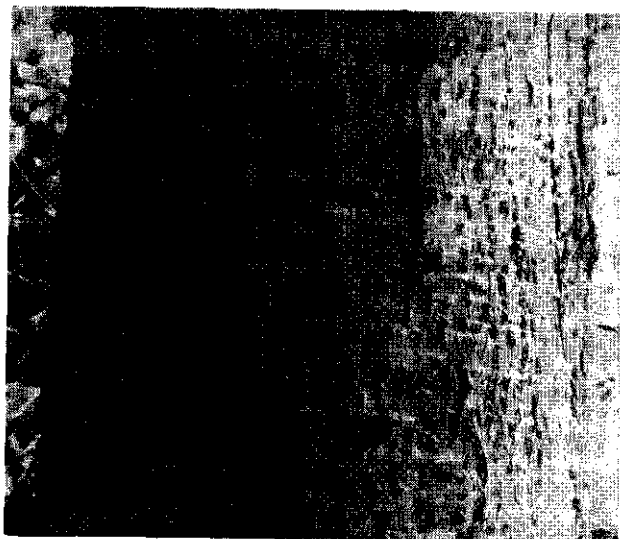


PLATE 4. A bole of *Cerbera floribunda* K. Schum. with lenticels in vertical rows

### III. GLOSSARY OF TERMS USED

**BUTTRESSES:** Lateral extensions connected throughout with the base of the stem.

Plank buttress: Narrow thin buttress.

Rounded buttress: Thick buttress, broadly rounded on the outer edge.

Spreading buttress: Buttress which enters the ground at an acute angle and some distance from the base of the tree; the upper edge which is often nearly horizontal for several feet frequently has a concave slope as it approaches the trunk (*Plate 6*).

Steep buttress: Tall buttress the outer edge of which approaches the ground close to the tree at an angle near the vertical.

Symmetrical buttress: Buttress the outer edge of which joins the ground and stem at an angle of approximately  $45^{\circ}$  (*Plate 3*).

#### DEAD BARK

Boat-shaped fissured: Bark opening into short or long elongated oval or elliptical fissures which are not continuous.

Cankered: Bark with small to medium size woody outgrowths or knotty excrescences.

Cracked: Bark which gives the impression of just beginning to open, both vertically and horizontally (grid-cracked).

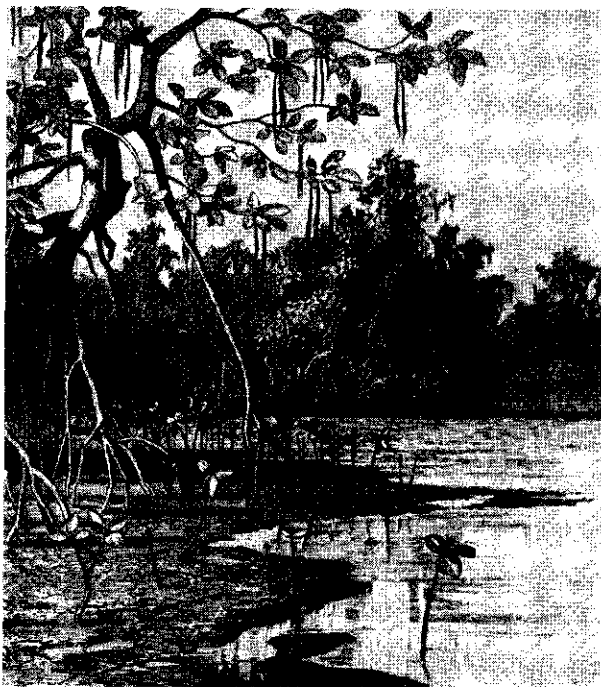


PLATE 5. Stilt roots of *Rhizophora* spec.

PLATE 6. Spreading, plank buttresses of a *Ficus* spec.



**Dipped:** Bark covered with shallow, usually circular depressions more than 1 cm in diameter; these are the scars of the scaled-off old bark.

**Fissured:** Longitudinal grooves with width of the ridges between at least three times that of the grooves or fissures (*Plate 3*).

**Flaky:** Bark which has large irregular patches or flakes of dead outer bark more than 7.5 cm long, which become detached (*Plate 7*).

**Hoopd:** with transverse ridges commonly found on the stem of many trees.

**Lenticellate:** Bark with corky rimmed air-holes or lenticels; variously shaped, linear, round or stellate and solitary or compound in vertical, horizontal or oblique line (*Plate 4*).

**Papery:** Bark scales very thin and peeling in a paper-like manner.

**Pock-marked:** Bark covered with small shallow circular depressions, less than 1 cm in diameter.

**Powdery:** Bark covered with a fine powder-like crust which usually rubs off easily; usually associated with smooth barks.

**Ridged:** Deep, continuous, longitudinal grooves often with flat-topped ridges between them; width of ridge and width of furrow approximately equal, and total width more than 2.5 cm.

**Ring-grooved:** Transverse grooves commonly found on the stem of many trees.

**Scaly:** Bark which has small irregular patches or scales of dead outer bark not more than 7.5 cm long.



**PLATE 7.**  
Tree with a flaky bark

**Scrolled:** Dead outer layer of bark shed in long scroll-like pieces and curled up at the lower edge.

**Smooth:** Bark which appears smooth from a distance, though it may be bumpy or pimply from lenticels, or powdery, and even cracked or slightly finely fissured.

**EXUDATE:** The moisture or liquid of the living tissue of many plants which oozed out when the bark is cut.

**Clear:** An exudate which is transparant.

**Opaque:** An exudate which is not transparant.

**Latex:** The milky juice or exudate of certain plants.

**Resinous:** An exudate which is adhesive.

**Sticky:** Latex which is adhesive.

**Watery:** An exudate which is like water.

**RHYTIDOME:** The dead outermost outside part of the bark.

**SLASH**

**Brittle:** Outer bark which is hard and which emits a metallic sound on cutting.

**Dilatated rays:** Rays gradually broadening towards the periphery of the bark (*Plate 1*, use a lens).

**Fibrous:** Bark which contains woody threads or fibres; bark of this nature can often be peeled off in long strips.

**Granular:** Bark which breaks up longitudinally on cutting into coarse granules.



**Laminated:** Bark layered in concentric cylindrical layers, frequently also of darker and lighter coloured tissue.

**Mottled:** Bark which is marked with spots or patches of various colours or shades.

**Striated:** Bark which has radial stripes of a different colour, often white.

**Thick:** Bark more than 6 mm thick.

**Thin:** Bark less than 2.5 mm thick.

#### STEM FORM

**Angular:** Irregular and not circular in cross section.

**Cylindrical:** Not or only slightly tapering in length from base of tree upwards.

**Fluted:** With conspicuous vertical ridges and grooves in cross section, the ridges including wood as well as bark (*Plate 2*).

**Latticed:** Outer part of stem forming an open lattice-like structure, like a strangling fig.

**STILT ROOTS:** more or less cylindrical roots which arise above the ground and enter the stem at some distance from the base (*Plate 5*).

**T.P.N.G.:** Territory of Papua New Guinea.

### IV. KEY

1. a. After cutting the bark, a colourless, white, or yellowish exudate appears (use also a  $\times 10$  lens) . . . . . 2
  - b. After cutting the bark, a pink or red exudate appears (use also  $\times 10$  lens) . . . . . 36
  - c. Characters different . . . . . 44
2. a. Trees with stilt roots and yellow latex . . . . . *Garcinia spec.*
  - b. Characters different . . . . . 3
3. a. Outer bark dark brown, dippled. Wood without vessels ( $\times 10$  lens) and exudate resinous . . . . . *Agathis labillardieri*
  - b. Characters different . . . . . 4
4. a. Bark exuding in small quantities (only visible with  $\times 10$  lens) . . . . . 5
  - b. Bark exuding in large quantities (visible with the naked eye) . . . . . 20
5. a. Buttresses over 0.5 m high . . . . . 6
  - b. Buttresses absent or less than 0.5 m high . . . . . 12
6. a. Dead bark dark brown, scaly, with many deep fissures, laminated . . . . . *Koordersiodendron pinnatum*
  - b. Characters different . . . . . 7
7. a. Trees with a powdery bark. Rays distinctly dilatated . . . . . *Camptosperma brevipetiolata*
  - b. Characters different . . . . . 8
8. a. Trees with spreading buttresses and bark with a terpentine smell . . . . . 9
  - b. Characters different . . . . . 10

9. a.	Trees with a smooth bark and often with stilt-roots	<i>Canarium spec.</i>	
b.	Trees with a flaky bark, without stilt-roots . . .	<i>Canarium indicum</i>	
10. a.	Outer surface of bark scaly and dippled . . .	<i>Dracontomelon dao</i>	
b.	Characters different . . . . .		11
11. a.	Stem cylindrical, bark not scaling, with shallow fissures . . . . .	<i>Spondias cytherea</i>	
b.	Stem fairly deeply fluted, scaly . . . . .	<i>Vitex quinata</i>	
12. a.	Outer surface of bark scaly and dippled, slash of the living bark turning orange on exposure. Wood without vessels ( $\times 10$ lens) . . . . .	<i>Podocarpus blumei</i>	
b.	Characters different . . . . .		13
13. a.	Outer surface of bark scaly, dippled; exudate turning black on exposure . . . . .	<i>Gluta spec.</i>	
b.	Characters different . . . . .		14
14. a.	Slash of the living bark pink to red, the outer side red or purplish-red . . . . .		15
b.	These colours different . . . . .		18
15. a.	Outer surface of bark smooth, with large lenticels in vertical ridges. Crown fairly thin. Leaves bipinnately compound . . . . .	<i>Albizia falcataria</i>	
b.	Characters different . . . . .		16
16. a.	Inner side of the living bark pale brown, with an unpleasant smell. Stem with some small knots . . . . .	<i>Trema orientalis</i>	
b.	Characters different . . . . .		17
17. a.	Bark fissured, scaly . . . . .	<i>Buchanania macrocarpa</i>	
b.	Bark without fissures, not scaly . . . . .	<i>Buchanania arborescens</i>	
18. a.	Colour of living bark changing after cutting . . . . .		19
b.	Colour of living bark not changing after cutting . . . . .		20
19. a.	Slash turning red-brown on exposure; the outer side of the living bark green . . . . .	<i>Colona scabra</i>	
b.	Slash turning dark green on exposure . . . . .	<i>Vitex cofassus</i>	
20. a.	Rays not dilatated and bark with a smell of terpentine . . . . .	<i>Haplolobus floribundus</i>	
b.	Rays strongly dilatated and without a smell of terpentine . . . . .	<i>Ficus spec.</i>	
21. a.	Buttresses absent or, if present, less than 0.5 m high . . . . .		22
b.	Buttresses present, over 0.5 m high . . . . .		27
22. a.	Outer surface of bark grey-brown, rough, rather deeply fissured . . . . .	<i>Mimusops elengi</i>	
b.	Characters different . . . . .		23
23. a.	Colour of the outer side of the living bark red-purple; the inner side of bark yellow, turning purple on exposure . . . . .	<i>Pimeleodendron amboinicum</i>	
b.	Characters different . . . . .		24

24. a. Colour of the outer side of living bark dark yellow, dotted. Bark very fibrous . . . . . *Antiaris toxicaria*  
b. Characters different . . . . . 25
25. a. Outer side of the bark with large lenticels in vertical, short, rows. Rhytidome leathery . . . . . *Cerbera floribunda*  
b. Characters different . . . . . 26
26. a. Outer surface of bark fairly smooth, ring-grooved. Outer side of the living bark yellow with green streaks . . . . . *Trophis philippinensis*  
b. Outer side of the living bark reddish yellow with white spots. Outer bark shallow-fissured . . . . . *Ficus spec.*
27. a. Trees with a flaky, brittle bark . . . . . *Pouteria rhopalocarpa*  
b. Scaling different . . . . . 28
28. a. Buttresses over 2 m high . . . . . 29  
b. Buttresses less than 2 m high . . . . . 32
29. a. Outer side of living bark red; dead bark fissured . . . . . *Palaequium amboinense*  
b. Characters different . . . . . 30
30. a. Outer surface of bark powdery, scales soft. Rays strongly dilatated . . . . . *Ficus variegata*  
b. Characters different . . . . . 31
31. a. Buttresses high, spreading very wide; outer side of living bark green . . . . . *Planchonella ripicola*  
b. Characters different; stem with deep flutes . . . . . *Alstonia scholaris*
32. a. Outer surface of bark dark black-brown, scaly, deep-fissured . . . . . *Manilkara fasciculata*  
b. Characters different . . . . . 33
33. a. Outer side of living bark dirty white; dead bark powdery, soft . . . . . *Pentaphalangium pachycarpum*  
b. Characters different . . . . . 34
34. a. Colour of the outer side of living bark pale yellow with green streaks and of the inner side white and turning reddish on exposure . . . . . *Artocarpus communis*  
b. Characters different . . . . . 35
35. a. Outer side of living bark dark red with white streaks; inner side pink with many rough, yellow ridges . . . . . *Chrysophyllum roxburghii*  
b. Outer side of living bark pink; inner side dirty white, smooth . . . . . *Burckella macropoda*
36. a. Stem with very deep flutes. Colour of inner side of the living bark pink with ripple marks; slash yellowish with many red dots. . . . . *Inocarpus fagiferus*  
b. Characters different . . . . . 37
37. a. Colour of the slash, outer side and inner side of the living bark white. Trees fairly crooked with shallow flutes *Pterocarpus indicus*  
b. Characters different . . . . . 38

38. a.	Slash of the bark with much red juice . . . . .	39
b.	Slash of the bark with some red juice (visible with $\times 10$ lens) . . . . .	40
39. a.	Stem not fluted . . . . . <i>Myristica spec.</i>	
b.	Stem with rather deep flutes . . . . . <i>Horsfieldia sylvestris</i>	
40. a.	Dead bark with many fissures . . . . .	41
b.	Dead bark without fissures . . . . .	42
41. a.	Colour of the outer side of living bark dark yellow; buttresses very low (root swelling) . . . . . <i>Mangifera minor</i>	
b.	Colour of the outer side of living bark purplish-red; spreading buttresses present . . . . . <i>Toona sureni</i>	
42. a.	Colour of the outer side of the living bark red . . . . . <i>Pometia pinnata</i> f. <i>glabra</i>	
b.	Colour of the outer side of the living bark green . . . . .	43
43. a.	The inner side of living bark with ridges ( $\times 10$ lens) . . . . . <i>Pometia pinnata</i> f. <i>repanda</i>	
b.	The inner side of the living bark smooth; the slash turning somewhat orange on exposure . . . . . <i>Pometia pinnata</i> f. <i>pinnata</i>	
44. a.	Trees with stilt roots . . . . . <i>Carallia brachiata</i>	
b.	Trees without stilt roots . . . . .	45
45. a.	Buttresses absent or, if present, less than 0.5 m high . . . . .	46
b.	Buttresses present, over 0.5 m high . . . . .	70
46. a.	Outer bark brown-red, powdery . . . . .	47
b.	Characters different . . . . .	49
47. a.	Slash of living bark yellow-brown, with large dots, not changing in colour . . . . . <i>Cryptocarya spec.</i>	
b.	Characters different . . . . .	48
48. a.	Slash of the living bark pink, rays pink . . . . . <i>Dillenia papuana</i>	
b.	Slash of the living bark purplish-red, rays white <i>Dillenia pteropoda</i>	
49. a.	Fairly crooked tree with many deep flutes and a very thin bark . . . . . <i>Spathiostemon javense</i>	
b.	Characters different . . . . .	50
50. a.	Slash of the living bark dark brown-red, granular, resembles palmwood . . . . . <i>Cyclandrophora laurina</i>	
b.	Characters different . . . . .	51
51. a.	Slash of the living bark yellowish brown; granular, resembles palmwood . . . . . <i>Stemonurus monticolus</i>	
b.	Characters different . . . . .	52
52. a.	Colour of the slash of the living bark red, turning orange on exposure. Bark with a strong smell of almonds . . . . . <i>Prunus arborea</i>	
b.	Characters different . . . . .	53
53. a.	Colour of the outer side of the living bark green, slash yellowish. Rays indistinct. The bark and the wood very soft . . . . . <i>Pisonia umbellifera</i>	
b.	Characters different . . . . .	54

54. a.	Colour of the outer side of the living bark yellow-brown or yellowish . . . . .	55
b.	Colour of the outer side of the living bark different . . . . .	62
55. a.	Outer bark deep-fissured, scaly . . . . . <i>Litsea firma</i>	
b.	Characters different . . . . .	56
56. a.	Living bark changing colour on exposure . . . . .	57
b.	Living bark not changing colour on exposure . . . . .	58
57. a.	Rays strongly dilatated and bark very hard . . . . . <i>Celtis philippinensis</i>	
b.	Rays indistinct . . . . . <i>Litsea timoriana</i>	
58. a.	Outer bark rough, scaly . . . . . <i>Anisoptera polyandra</i>	
b.	Outer bark smooth or shallow-fissured . . . . .	59
59. a.	Stem pock-marked, bark very fibrous . . . . . <i>Cananga odorata</i>	
b.	Characters different . . . . .	60
60. a.	Slash white and rhytidome leathery . . . . . <i>Hernandia ovigera</i>	
b.	Characters different . . . . .	61
61. a.	Outer bark not fissured, with some scattered ring-grooves. Slash striated; rays strongly dilatated . . . . . <i>Polyalthia glauca</i>	
b.	Outer bark shallow-fissured. Slash with dark coloured dots. Bark very hard. . . . . <i>Celtis rigescens</i>	
62. a.	Outer bark dark grey-brown, smooth, hooped; inner side of the living bark yellow with boat-shaped ridges ( $\times 10$ lens) . . . . .	
b.	Characters different . . . . . <i>Vatica papuana</i>	63
63. a.	Living bark changing colour on exposure . . . . .	64
b.	Living bark not changing colour on exposure . . . . .	67
64. a.	Colour of the slash pink, of the inner side pink, turning orange-brown on exposure. Wood without vessels (use $\times 10$ lens) . . . . .	
b.	Characters different . . . . . <i>Podocarpus blumei</i>	65
65. a.	Colour of the inner side of the living bark dark orange, with slime; outer bark smooth . . . . . <i>Cryptocarya crassinervia</i>	
b.	Characters different . . . . .	66
66. a.	Outer bark shallow-fissured and colour of the inner side of the living bark yellowish . . . . . <i>Terminalia spec.</i>	
b.	Characters different . . . . . <i>Eugenia spec. div.</i>	
67. a.	The outer side and slash of the living bark red, with an unpleasant smell of medicine . . . . . <i>Alphitonia incana</i>	
b.	Characters different . . . . .	68
68. a.	The outer side and slash of the living bark orange. Trees with a hooped bark . . . . . <i>Dysoxylum gaudichaudianum</i>	
b.	Characters different . . . . .	69
69. a.	The inner side of the living bark yellowish brown with shallow grooves ( $\times 10$ lens) . . . . . <i>Adenanthera pavonina</i>	
b.	The inner side of the living bark with sharp ridges . . . . .	
	. . . . . <i>Tristiropsis acutangula</i>	

70. a.	Stem with shallow or rather deep flutes . . . . .	71
b.	Stem without flutes . . . . .	76
71. a.	The depth of the flutes more than $\frac{1}{2}$ radius of the tree . . . . .	72
b.	The depth of the flutes less than $\frac{1}{2}$ radius of the tree . . . . .	74
72. a.	Stem black, with a grid-cracked bark . . . . . <i>Diospyros maritima</i>	
b.	Characters different . . . . .	73
73. a.	Trees with a scaly, powdery bark . . . . . <i>Adina multifolia</i>	
b.	Trees with a flaky, scrolled bark . . . . . <i>Chisoheton spec.</i>	
74. a.	The outer side of the living bark brown-red, the inner side brown with very sharp ridges . . . . . <i>Lithocarpus spec. div.</i>	
b.	Characters different . . . . .	75
75. a.	Stem pale brown, flaky . . . . . <i>Syzygium versteegii</i>	
b.	Stem brown-black, smooth, hooped . . . . . <i>Maniltoa plurijuga</i>	
76. a.	Bark changing colour after cutting . . . . .	77
b.	Bark not changing colour after cutting . . . . .	90
77. a.	Outer side of the living bark green . . . . .	78
b.	Outer side of the living bark pink to dark red . . . . .	81
c.	Outer side of the living bark coloured otherwise . . . . .	84
78. a.	Stem pale brown, powdery . . . . . <i>Syzygium versteegii</i>	
b.	Characters different . . . . .	79
79. a.	Slash of the living bark pink, granular, resembles palmwood . . . . . <i>Glochidion spec.</i>	
b.	Characters different . . . . .	80
80. a.	Stem with a dippled, scaling bark . . . . . <i>Intsia palembanica</i>	
b.	Stem with a smooth and hooped bark . . . . . <i>Mastixia pentandra</i>	
81. a.	The outer side of the living bark red or dark red and slash turning purple on exposure . . . . .	82
b.	Characters different . . . . .	83
82. a.	Stem with a smooth bark . . . . . <i>Elaeocarpus sphaericus</i>	
b.	Stem very strongly scaly, thin . . . . . <i>Terminalia rubiginosa</i>	
83. a.	Dead bark in two parts, a leathery part outside and a spongy part inside . . . . . <i>Neonauclea (a)</i>	
b.	Dead bark different . . . . . <i>Neonauclea spec.</i>	
84. a.	Slash of bark turning purple to black-purple on exposure . . . . .	85
b.	Colour turning differently on exposure . . . . .	88
85. a.	The outer side of the living bark white, with an intoxicant smell. Dead bark pale brown, shallow-fissured . . . . . <i>Octomeles sumatrana</i>	
b.	Characters different . . . . .	86
86. a.	Trees with spreading buttresses; rays not dilatated . . . . . <i>Mastixiodendron pachyclados</i>	
b.	Characters different . . . . .	87
87. a.	Outer bark shallow-fissured, scaly; slash pale brown-yellow . . . . . <i>Tetrameles nudiflora</i>	
b.	Outer bark smooth; slash red . . . . . <i>Sloanea pullei</i>	

88. a.	Outer bark shallow-fissured; living bark turning orange-red on exposure . . . . .	<i>Gmelina moluccana</i>	
b.	Characters different . . . . .		89
89. a.	Slash of dead bark resembles palmwood; inner side of the living bark yellowish with orange coloured ridges . . . . .	<i>Teysmanniodendron bogoriense</i>	
b.	Slash of the living bark pale yellow, laminated; inner side white . . . . .	<i>Anthocephalus chinensis</i>	
90. a.	Outer bark smooth, shallow-fissured. Living bark very thick, inner side pale brown with boat-shaped ridges ( $\times 10$ lens) . . . . .	<i>Scaphium beccarii</i>	
b.	Characters different . . . . .		91
91. a.	Stem very crooked, pock-marked and bark with a very unpleasant smell (HCN) . . . . .	<i>Pangium edule</i>	
b.	Characters different . . . . .		92
92. a.	Trees with a flaky bark and slash of the living bark striated . . . . .	<i>Miliusa koolsii</i>	
b.	Characters different . . . . .		93
93. a.	Outer side of living bark red to dark red . . . . .		94
b.	Colour different . . . . .		98
94. a.	Rays strongly dilatated and bark very fibrous <i>Sterculia oncinocarpa</i>		
b.	Characters different . . . . .		95
95. a.	The inner side of the living bark dark red with lighter coloured ridges . . . . .	<i>Alphitonia macrocarpa</i>	
b.	Characters different . . . . .		96
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 brown . . . . . *Aleurites moluccana*  
 b. Slash yellow-brown, not laminated and outer side of the living  
 bark green . . . . . *Intsia bijuga*

## V. DESCRIPTION OF THE SPECIES

(Alphabetically arranged, according to genus and species)

1. (MIMOSACEAE) **Adenanthera pavonina** L.  
 (General English trade name: Coralwood)  
 (Indon. name: Kaju saga)
- Stem:* rather cylindrical  
*Knots:* few, big  
*Flutes:* —  
*Dead bark:* brownish red or greyish brown, with many large  
 white spots  
*Scaling:* scales few, small  
*Lenticels:* —  
*Buttresses:* root swelling  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* brownish red  
*Inner side:* yellowish brown with shallow grooves  
*Slash:* brownish red, structure indistinct  
*Rays:* white, indistinct  
*Exudate:* —  
*Other characters:* Pods when split very strongly curved; seeds bright  
 red, pea-shaped, diam. 1 cm. A deciduous tree.  
 Leaves bipinnately compound.
2. (RUBIACEAE) **Adina multifolia** Hav.  
 (General English trade name: Badenga) (Indon.  
 name: Kaju gatal, badenga)
- Stem:* fluted  
*Knots:* —  
*Flutes:* very deep, more than  $\frac{1}{2}$  radius of the tree  
*Dead bark:* powdery, purplish-brown  
*Scaling:* scales thin, soft  
*Lenticels:* —



<i>Buttresses:</i>	very high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	white, turning orange-brown on exposure
Inner side:	white, turning orange-brown on exposure
Slash:	white, turning orange-brown on exposure; very thin
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	A rather twisted tree with many deep flutes; crown small.

### 3. (ARAUCARIACEAE)

**Agathis labillardieri** Warb.  
(General English trade name: New Guinea kauri)  
(Indon. name: Kaju damar putih)

<i>Stem:</i>	angular
Knots:	—
Flutes:	—
<i>Dead bark:</i>	dippled, dark brown
Scaling	scales fairly thick, small, circular
Lenticels	many, small, scattered
<i>Buttresses:</i>	root swellings
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	pink
Inner side:	white
Slash:	red, somewhat laminated
Rays:	indistinct
Exudate:	thick white resin
<i>Other characters:</i>	Wood without vessels; fruits in cones. Resin present in old slash wounds.

### 4. (MELIACEAE)

**Aglaia spec.**

<i>Stem:</i>	angular
Knots:	—
Flutes:	—
<i>Dead bark:</i>	brown
Scaling:	scales, small
Lenticels:	large, scattered
<i>Buttresses:</i>	up to 1 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	orange

Inner side:	dirty white
Slash:	orange, laminated, the part near the cambium yellow
Rays:	pale yellow
Exudate:	—
<i>Other characters:</i>	Leaves pinnately compound.

5. (MIMOSACEAE) ***Albizia falcataria* Fosb. (syn. *A. falcata* Back.)**  
(General English trade name: Batai)

<i>Stem:</i>	horizontal ridges scattered over $\frac{1}{4}$ of the circumference of the stem
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, brownish-grey with greenish brown spots
Scaling:	—
Lenticels:	fairly large, in vertical rows
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side	dark purplish red
Inner side:	white, with vertical ridges
Slash:	dark purplish red
Rays:	indistinct
Exudate:	a little colourless latex ( $\times 10$ lens).
<i>Other characters</i>	Crown very thin, umbrella-shaped; a deciduous tree. Leaves bipinnately compound. In secondary forest and in the borders of primary forest.

6. (EUPHORBIACEAE) ***Aleurites moluccana* Willd.**  
(Indon. name: Kemiri)

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	dimpled, grey
Scaling:	scales thick, irregularly shaped
Lenticels:	large, scattered
<i>Buttresses:</i>	low, up to 1 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	orange-brown
Inner side:	white
Slash:	red, laminated

Rays:	—
Exudate:	—
<i>Other characters:</i>	In secondary forest and in the borders of primary forest.

## 7. (RHAMNACEAE)

***Alphitonia incana*** T. et B. (syn. *A. moluccana* T. et B.)

<i>Stem:</i>	crooked
Knots:	—
Flutes:	—
<i>Dead bark:</i>	greenish brown
Scaling:	scales few, thin
Lenticels:	many, very small, scattered
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	dark red
Inner side:	pink
Slash:	red
Rays:	white, strongly dilatated
Exudate:	—
<i>Other characters:</i>	Bark with a very strong smell of medicine. Small trees in secondary growth.

## 8. (RHAMNACEAE)

***Alphitonia macrocarpa*** Mansf.

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, cracked, greenish grey with many brown spots
Scaling:	—
Lenticels:	very small
<i>Buttresses:</i>	up to 1¼ m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	dark red with pink stripes
Inner side:	dark red with lighter coloured ridges
Slash:	dark red with very dark coloured dots
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	—

9. (APOCYNACEAE)

***Alstonia scholaris* R. Br.**

(General English trade name: Pulai, white cheese-wood) (Indon. name: Pulai)

*Stem:*

Knots: —

Flutes: few, fairly deep to deep

*Dead bark:* smooth, finely grid-cracked, grey or greyish brown

Scaling: —

Lenticels: many, in horizontal rows

*Buttresses:* very high, steep, rounded

*Stilt roots:* —

*Living bark:*

Outer side: yellow

Inner side: white

Slash: brownish yellow, mottled

Rays: white, indistinct

Exudate: very much milky latex

*Other characters:* A large part of the bole provided with flutes.

10. (DIPTEROCARPACEAE)

***Anisoptera polyandra* Bl.**

(Australian trade name: Anisoptera)

*Stem:*

cylindrical

Knots: —

Flutes: —

*Dead bark:* rough, yellowish brown

Scaling: scales thick, oblong

Lenticels: very small, scattered

*Buttresses:* root swelling

*Stilt roots:* —

*Living bark:*

Outer side: yellowish brown

Inner side: pale yellow

Slash: yellowish brown, fibrous, resembles palmwood; the part near the cambium pale yellow

Rays: somewhat dilatated

Exudate: —

*Other characters:* Resin produced by the sapwood present in old slash wounds. Bark fibrous. Fruits with two wings.

11. (RUBIACEAE)

***Anthocephalus chinensis* Rich.** (syn. *A. cadamba* Miq.) (General English trade name: Kadam) (Indon. name: Kelempayan) (T.P.N.G. name: Anthocephalus)

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	fissured, greyish brown
Scaling:	scales small, irregularly shaped
Lenticels:	—
<i>Buttresses:</i>	up to 1 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	pale yellow
Inner side:	white, turning greenish on exposure
Slash:	pale yellow, laminated, turning greenish on exposure
Rays:	white
Exudate:	—
<i>Other characters:</i>	Trees with horizontal, widely spreading branches. Bark with a bitter smell.

12. (MORACEAE)                      **Antiaris toxicaria** Lesch.  
(General English trade name: Antiaris, poison tree)

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	grey with green spots
Scaling:	scales few, small, leathery
Lenticels:	many, large
<i>Buttresses:</i>	root swelling
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	dark yellow, dotted
Inner side:	white
Slash:	yellow, laminated, the part near the cambium white
Rays:	—
Exudate:	white latex
<i>Other characters:</i>	Bark very fibrous.

13. (MORACEAE)                      **Artocarpus communis** J. R. et G. Forst. (Indon.  
name: Sukun)

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, shallowly fissured, dark grey with large white spots

Scaling:	—
Lenticels:	many, large, united into vertical rows
Buttresses:	up to 1½ m high, rounded
Stilt roots:	—
Living bark:	
Outer side:	pale yellow with green streaks
Inner side:	white, turning reddish on exposure
Slash:	pale yellow, the part near the cambium white
Rays:	indistinct, somewhat dilatated
Exudate:	very much thick white latex
Other characters:	Leaves large, deeply lobed. Leafscars ¼ of the circumference of the stem. Fruits ± 10 cm in diameter, cylindrical, thorny, edible. Preferring wet or marshy soil.

#### 14. (ANACARDIACEAE)

#### **Buchanania arborescens Bl.**

Stem:	
Knots:	—
Flutes:	shallow, near the base of the stem
Dead bark:	smooth, finely grid-cracked greyish brown with greenish spots
Scaling:	—
Lenticels:	many, in horizontal rows
Buttresses:	—
Stilt roots:	—
Living bark:	
Outer side:	red
Inner side:	white, with indistinct boat-shaped fissures (× 10 lens)
Slash:	pink, striated; the part near the cambium white
Rays:	indistinct
Exudate:	near the cambium a little, colourless (× 10 lens)
Other characters:	—

#### 15. (ANACARDIACEAE)

#### **Buchanania macrocarpa Lautb.**

Stem:	
Knots:	—
Flutes:	—
Dead bark:	fissured, greyish black, fairly thick
Scaling:	scales small
Lenticels:	many, small, scattered
Buttresses:	—
Stilt roots:	—

<i>Living bark:</i>	
Outer side:	red
Inner side:	white, rather rough
Slash:	red, indistinctly laminated
Rays:	white, indistinct, more or less dilatated
Exudate:	a little white or colourless, sticky
<i>Other characters:</i>	Crown large, drooping, with horizontal branches. Preferring wet or marshy places.

16. (SAPOTACEAE)

**Burckella macropoda** H. J. L.

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth to boat-shaped fissured, brown
Scaling:	—
Lenticels:	many, small, in vertical rows
<i>Buttresses:</i>	up to 1.5 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	pink
Inner side:	dirty white
Slash:	pink
Rays:	indistinct
Exudate:	very much white latex
<i>Other characters:</i>	The crown is very dark coloured; branches drooping.

17. (ANACARDIACEAE)

**Camposperma brevipetiolata** Volk.  
(General English trade name: Terentang) (Indon.  
name: Terentang)

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	powdery, grey
Scaling:	scales small, thin, soft
Lenticels:	few, scattered
<i>Buttresses:</i>	up to 1.50 m high, spreading
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	pink
Inner side:	dirty white
Slash:	brownish red
Rays:	distinctly dilatated

Exudate:	in the part near the cambium exuding some colourless resin ( $\times 10$ lens)
Other characters:	In swamps. Crown with horizontal branches, rather flat-topped.

18. (ANNONACEAE)

**Cananga odorata** Hook. f. et Th.

(General English trade name: Cananga) (Indon. name: Kenanga)

*Stem:*

Knots: —

Flutes: —

*Dead bark:* smooth or with shallow fissures, pock-marked, greenish grey with greenish brown spots

Scaling: —

Lenticels: very small

*Buttresses:* root swelling

*Stilt roots:* —

*Living bark:*

Outer side: yellowish brown with green spots

Inner side: pale brownish yellow with vertical lens-shaped ridges

Slash: brownish yellow, striated

Rays: strongly dilatated

Exudate: —

*Other characters:* Bark fibrous, with a fragrant smell of young coconut. Rhytidome leathery. Preferring seasonal swamps.

19. (BURSERACEAE)

**Canarium indicum** L.

(Indon. name: Kenari)

*Stem:*

Knots: —

Flutes: —

*Dead bark:* grey, dippled

Scaling: flakes hard, stiff

Lenticels: —

*Buttresses:* very high, steep, spreading, plank-like

*Stilt roots:* —

*Living bark:*

Outer side: green

Inner side: white

Slash: pink, laminated, a little resin exudes from the part near the cambium



<b>Rays:</b>	somewhat dilatated, sinuous
<b>Exudate:</b>	a little colourless resin ( $\times 10$ lens)
<b>Other characters:</b>	Bark with a strong smell of terpentine. Crown drooping. Leaves pinnate.

**20. (BURSERACEAE)      *Canarium spec.*  
(Indon. name: Kenari)**

<b>Stem:</b>	
<b>Knots:</b>	—
<b>Flutes:</b>	—
<b>Dead bark:</b>	smooth, greyish brown
<b>Scaling:</b>	—
<b>Lenticels:</b>	many, small, scattered
<b>Buttresses:</b>	spreading, plank-like
<b>Stilt roots:</b>	few
<b>Living bark:</b>	
<b>Outer side:</b>	pink
<b>Inner side:</b>	pale yellow
<b>Slash:</b>	reddish, laminated, a little resin exudes from the part near the cambium
<b>Rays:</b>	somewhat dilatated
<b>Exudate:</b>	a little colourless resin ( $\times 10$ lens)
<b>Other characters:</b>	Bark with a strong smell of terpentine. Leaves pinnate.

**21. (RHIZOPHORACEAE)      *Carallia brachiata* Merr.**

<b>Stem:</b>	
<b>Knots:</b>	few, small
<b>Flutes:</b>	—
<b>Dead bark:</b>	shallow-fissured, brown with green spots
<b>Scaling:</b>	—
<b>Lenticels:</b>	—
<b>Buttresses:</b>	—
<b>Stilt roots:</b>	up to 0.5 m high, rather cylindrical
<b>Living bark:</b>	
<b>Outer side:</b>	brown with green spots
<b>Inner side:</b>	brown, striated
<b>Slash:</b>	pale brownish yellow, turning darker on exposure
<b>Rays:</b>	pale yellow, strongly dilatated
<b>Exudate:</b>	—
<b>Other characters:</b>	—

22. (ULMACEAE)

**Celtis philippinensis Blanco**

(General English trade name: Kaju lulu, malaikmo)

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark</i>	dark grey to black
Scaling:	—
Lenticels:	few, small
<i>Buttresses:</i>	very low
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	yellow with a few green spots
Inner side:	yellow
Slash:	yellowish brown, mottled, resembling palmwood; turning purple on exposure
Rays:	strongly dilatated
Exudate:	—
<i>Other characters:</i>	Wood and bark very hard.

23. (ULMACEAE)

**Celtis rigescens Planch.**

<i>Stem:</i>	
Knots:	few, small
Flutes:	—
<i>Dead bark:</i>	shallow-fissured, grey with many brown spots
Scaling:	—
Lenticels:	small, scattered
<i>Buttresses:</i>	low
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	yellow with green spots
Inner side:	white, yellow reticulated
Slash:	brownish yellow with dark dots, resembling palm- wood
Rays:	white, indistinctly dilatated
Exudate:	—
<i>Other characters:</i>	Bark very hard.

24. (APOCYNACEAE)

**Cerbera floribunda K. Schum.**

<i>Stem:</i>	—
Knots:	few, small
Flutes:	—
<i>Dead bark:</i>	dark grey to black
Scaling:	scales few, small, thin

Lenticels:	very large, in short vertical rows
Buttresses:	—
Stilt roots:	—
Living bark:	
Outer side:	pale yellow
Inner side:	white
Slash:	yellowish, structure indistinct
Rays:	indistinct
Exudate:	very much milky latex
Other characters:	Low trees; preferring marshy places. Rhytidome leathery. Ripe fruits blue, size 10 × 6 cm.

25. (MELIACEAE)

**Chisocheton spec.**

Stem:	twisted
Knots:	few, very large
Flutes:	very deep, more than $\frac{1}{2}$ radius of the stem
Dead bark:	grey to pale brown
Scaling:	scrolls large
Lenticels:	—
Buttresses:	up to 3 m high
Stilt roots:	—
Living bark:	
Outer side:	pale yellow
Inner side:	pale brownish yellow, shallow-fissured
Slash:	pale brownish yellow, quickly turning dark brown on exposure
Rays:	indistinct
Exudate:	—
Other characters:	Near the base an accumulation of dead bark. Leaves very long, pinnately compound.

26. (SAPOTACEAE)

**Chrysophyllum roxburghii** G. Don (syn. *C. lanceolatum* DC.)

Stem:	
Knots:	—
Flutes:	—
Dead bark:	with shallow fissures, greenish grey to brown
Scaling:	—
Lenticels:	very small
Buttresses:	up to 1.5 m high
Stilt roots:	—
Living bark:	
Outer side:	dark red with vertical white stripes

Inner side:	white to pink with very rough yellow ridges
Slash:	yellowish red, dark brown laminated
Rays:	white, very narrow
Exudate:	very much white latex
<i>Other characters:</i>	Rhytidome leathery.

## 27. (TILIACEAE)

### *Colona scabra* Burr.

<i>Stem:</i>	crooked, short
Knots:	—
Flutes:	—
<i>Dead bark:</i>	with shallow boat-shaped fissures, brownish grey with greenish brown spots
Scaling:	—
Lenticels:	very small
<i>Buttresses:</i>	root swelling
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green
Inner side:	white
Slash:	yellowish, striated, on exposure quickly red-brown
Rays:	white, strongly dilatated
Exudate:	a little, colourless, sticky (10 × lens)
<i>Other characters:</i>	In secondary growth.

## 28. (LAURACEAE)

### *Cryptocarya crassinervia* Miq.

<i>Stem:</i>	
Knots:	few, small
Flutes:	—
<i>Dead bark:</i>	smooth, greyish brown
Scaling:	—
Lenticels:	—
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	dark orange
Slash:	yellowish brown, turning purple on exposure
Rays:	more or less dilatated
Exudate:	—
<i>Other characters:</i>	Between bark and wood a slimy secretion.

**29. (LAURACEAE)****Cryptocarya spec.****Stem:**

Knots: —

Flutes: —

**Dead bark:** powdery, reddish brown

Scaling: scales thin, detaching easily

Lenticels: —

**Buttresses:** very low**Stilt roots:** —**Living bark:**

Outer side: brown

Inner side: yellow

Slash: yellowish brown with dots

Rays: somewhat dilatated

Exudate: —

**Other characters:** Between bark and wood a slimy secretion.**30. (ROSACEAE)****Cyclandrophora laurina** Kosterm. (syn. *Parinari glaberrima* Hassk.)**Stem:**

Knots: —

Flutes: —

**Dead bark:** smooth, brownish black

Scaling: —

Lenticels: —

**Buttresses:** —**Stilt roots:** —**Living bark:**

Outer side: purplish black

Inner side: red

Slash: dark brownish red, granular, the part near the rhytidoma resembles palmwood

Rays: indistinct

Exudate: —

**Other characters:** Wood very hard. The slash of the dead bark resembles palmwood.**31. (DILLENIACEAE)****Dillenia papuana** Mart.

(General English trade name: Majongga)

**Stem:**

Knots: —

Flutes: —

**Dead bark:** powdery, brownish red

Scaling: scales thin, soft, circular

Lenticels:	—
Buttresses:	root swellings
Stilt roots:	—
Living bark:	
Outer side:	dirty white
Inner side:	brownish yellow with low ridges
Slash:	pink, turning purple on exposure
Rays:	pink, strongly dilatated
Exudate:	—
Other characters:	Leaves very thick, large, oblong. Preferring seasonal swamps.

### 32. (DILLENIACEAE)

#### **Dillenia pteropoda** Hoogl.

Stem:	
Knots:	—
Flutes:	—
Dead bark:	powdery, brownish red
Scaling:	scales thin, soft, circular
Lenticels:	—
Buttresses:	root swellings
Stilt roots:	—
Living bark:	
Outer side:	pale yellow
Inner side:	pale brownish yellow with low ridges
Slash:	purplish red, turning purple on exposure
Rays:	white, strongly dilatated
Exudate:	—
Other characters:	Leaves very thick, large, oblong.

### 33. (EBENACEAE)

#### **Diospyros maritima** Bl. (Indon. name: Kaju arang)

Stem:	
Knots:	—
Flutes:	few, deep, depth more than $\frac{1}{2}$ radius of the stem
Dead bark:	black, grid-cracked
Scaling:	scales many, small, brittle
Lenticels:	—
Buttresses:	up to 1 m high
Stilt roots:	—
Living bark:	
Outer side:	red
Inner side:	dirty white, rough
Slash:	red with many dark red dots

Rays:	indistinct
Exudate:	—
Other characters:	Colour of the stem and branches black.

34. (ANACARDIACEAE) **Dracontomelun dao** Merr. et Rolfe (syn. *D. mangiferum* Bl.)  
(Australian trade name: New Guinea Walnut)

Stem:	
Knots:	—
Flutes:	—
Dead bark:	dippled, purplish brown with many white spots
Scaling:	scales few, thin, brittle
Lenticels:	—
Buttresses:	up to 2 m high, symmetrical, plank-like
Stilt roots:	—
Living bark:	
Outer side:	red with small green dots
Inner side:	white
Slash:	striated, from white to red; the red colour near the rhytidome and the white colour near the cambium
Rays:	indistinct
Exudate:	little colourless resin ( $\times 10$ lens)
Other characters:	Leaves pinnately compound. Heartwood pale brown with black stripes.

35. (MELIACEAE) **Dysoxylum gaudichaudianum** Miq.

Stem:	
Knots:	—
Flutes:	—
Dead bark:	smooth, hooped, greenish brown with grey spots
Scaling:	—
Lenticels:	—
Buttresses:	—
Stilt roots:	—
Living bark:	
Outer side:	orange
Inner side:	white
Slash:	dark orange, laminated
Rays:	white, sinuous, indistinct
Exudate:	—
Other characters:	Leaves pinnately compound.

36. (MELIACEAE)

**Dysoxylum octandrum** C. DC.

*Stem:*

Knots: —

Flutes: —

*Dead bark:* brown

Scaling: scales small, crumbly

Lenticels: few, large, scattered

*Buttresses:* up to 1.5 m high, symmetrical

*Stilt roots:* —

*Living bark:*

Outer side: pale yellow

Inner side: orange, rough

Slash: orange, resembling palmwood

Rays: white, narrow

Exudate: —

*Other characters:* Bark with a strong smell of onions. Leaves pinnately compound.

37. (ELAEOCARPACEAE)

**Elaeocarpus macrocerus** Merr.

*Stem:*

Knots: —

Flutes: —

*Dead bark:* smooth, grey

Scaling: —

Lenticels: few, small, scattered

*Buttresses:* up to 3.5 m high, steep, rounded

*Stilt roots:* —

*Living bark:*

Outer side: red

Inner side: yellow

Slash: yellowish brown, structure indistinct

Rays: yellowish, more or less dilatated

Exudate: —

*Other characters:* Old leaves red. Bark fragrant with a smell of young coconut.

38. (ELAEOCARPACEAE)

**Elaeocarpus sphaericus** K. Schum.  
(Indon. name: Genitri)

*Stem:*

Knots: —

Flutes: —

*Dead bark:* brown, with lighter coloured shallow fissures

Scaling: —



Lenticels:	many, rather large, scattered
Buttresses:	up to 1.5 m high
Stilt roots:	—
Living bark:	
Outer side:	dark red
Inner side:	pale yellow
Slash:	brownish yellow, mottled, turning purple on exposure
Rays:	large, white, somewhat dilatated
Exudate:	—
Other characters:	Fruits blue, globose, diam. 2 cm. Old leaves red. Bark fragrant with a smell of young coconut.

39. (MYRTACEAE)

**Eugenia spec.**

Stem:	
Knots:	—
Flutes:	—
Dead bark:	rough, brown
Scaling:	scales thin, crumbly
Lenticels:	—
Buttresses:	low
Stilt roots:	—
Living bark:	
Outer side:	brown
Inner side:	brown, turning purple on exposure
Slash:	brown, striated, turning purple on exposure
Rays:	indistinct
Exudate:	—
Other characters:	—

40. (MYRTACEAE)

**Eugenia spec.**

Stem:	
Knots:	—
Flutes:	—
Dead bark:	rough, brown
Scaling:	flakes large, crumbly
Lenticels:	—
Buttresses:	—
Stilt roots:	—
Living bark:	
Outer side:	pink
Inner side:	white, turning purple on exposure
Slash:	red, striated, turning purple on exposure

Rays:	red
Exudate:	—
<i>Other characters:</i>	Bark very fibrous.
<b>41. (RUTACEAE)</b>	<b><i>Evodia bonwickii</i> F. v. M.</b>
<i>Stem:</i>	somewhat angular
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, greenish brown with large white spots
Scaling:	—
Lenticels:	many, small
<i>Buttresses:</i>	up to 1.75 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red with yellowish green stripes
Inner side:	pale brown
Slash:	dark red, mottled; the part near the cambium white to pale brown
Rays:	white, sinuous
Exudate:	—
<i>Other characters:</i>	Bark with an unpleasant smell of ripe <i>Durio</i> fruit. Flowering trees often visited by parakeets. Prefer- ring seasonal swamps.
<b>42. (RUTACEAE)</b>	<b><i>Evodia elleryana</i> F. v. M.</b>
<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, pale brown
Scaling:	—
Lenticels:	many, small
<i>Buttresses:</i>	up to 5 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	yellow with green spots
Inner side:	white
Slash:	dark yellowish brown, the part near the cambium white
Rays:	white, strongly dilatated
Exudate:	—
<i>Other characters:</i>	Bark with an unpleasant smell of ripe <i>Durio</i> fruit. Flowering trees often visited by parakeets. Prefer- ring seasonal swamps.

**43. (MORACEAE)****Ficus variegata Bl.**

<i>Stem:</i>	fluted
Knots:	—
Flutes:	few, rather deep
<i>Dead bark:</i>	powdery, pale brown with some white spots
Scaling:	scales few, thin, soft
Lenticels:	very small, often in short vertical rows
<i>Buttresses:</i>	rather high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green
Inner side:	white, reticulate
Slash:	white, in two layers, turning red on exposure
Rays:	strongly dilatated
Exudate:	very much white latex
<i>Other characters:</i>	Cauliflorous. Fruits globose, diameter $\pm$ 2 cm.

**44. (MORACEAE)****Ficus spec.**

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	shallow-fissured, brownish with white spots
Scaling:	scales few, small
Lenticels:	many, large, in vertical rows
<i>Buttresses:</i>	root swellings
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	reddish yellow with green dots
Inner side:	white
Slash:	white, red-mottled, slowly turning red on exposure
Rays:	rather strongly dilatated
Exudate:	much white latex
<i>Other characters:</i>	Bark very fibrous.

**45. (MORACEAE)****Ficus spec.**

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	rather smooth, brown with many greyish green spots
Scaling:	—
Lenticels:	many, small, in vertical rows
<i>Buttresses:</i>	—

<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	yellow
Inner side:	white, with shallow grooves
Slash:	yellow, the part near the cambium white
Rays:	white, strongly dilatated
Exudate:	a little, watery, colourless
<i>Other characters:</i>	—

**46. (RUTACEAE)**

***Flindersia amboinensis* Poir.**

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	boat-shaped fissured, pale brown with grey spots
Scaling:	—
Lenticels:	—
<i>Buttresses:</i>	up to 2 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	yellow and green
Inner side:	pale yellow
Slash:	yellowish, granular
Rays:	white, little dilatated
Exudate:	—
<i>Other characters:</i>	Valves of a dehisced fruit thorny, boat-shaped. Leaves pinnately compound.

**47. (GUTTIFERAE)**

***Garcinia spec.***

<i>Stem:</i>	rather twisted
Knots:	—
Flutes:	shallow
<i>Dead bark:</i>	grid-cracked, dark brown with greyish green spots
Scaling:	scales small, brittle
Lenticels:	rather many, small
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	about 1 m high
<i>Living bark:</i>	
Outer side:	brownish red
Inner side:	yellowish
Slash:	pale yellow with regular tangential white bands
Rays:	white, rather strongly dilatated
Exudate:	clear, yellow, sticky latex
<i>Other characters:</i>	—

<b>48. (EUPHORBIACEAE)</b>	<b>Glochidion spec.</b>
<i>Stem:</i>	crooked
Knots:	—
Flutes:	—
<i>Dead bark:</i>	pinkish, grid-cracked
Scaling:	—
Lenticels:	very large, scattered
<i>Buttresses:</i>	up to 1 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green
Inner side:	pale brown
Slash:	pink, laminated, turning reddish brown on exposure, granular, resembles palmwood
Rays:	small
Exudate:	—
<i>Other characters:</i>	In secondary growth.

<b>49. (ANACARDIACEAE)</b>	<b>Gluta spec.</b>
<i>Stem:</i>	rather angular
Knots:	—
Flutes:	—
<i>Dead bark:</i>	dimpled, brownish red
Scaling:	scales few, small
Lenticels:	—
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	orange
Inner side:	white
Slash:	in two layers: the outer part yellowish red with a little sticky exudate and the part near the cambium white
Rays:	indistinct
Exudate:	a little opaque latex, turning black on exposure (× 10 lens)
<i>Other characters:</i>	Preferring river banks.

<b>50. (VERBENACEAE)</b>	<b>Gmelina moluccana Back.</b>
<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	shallow-fissured, greyish brown

Scaling:	flakes rather many, thick, brittle
Lenticels:	—
Buttresses:	up to 1.5 m high, steep, rounded
Stilt roots:	—
Living bark:	
Outer side:	pale brownish yellow
Inner side:	white
Slash:	pale brownish yellow, turning orange-red on exposure
Rays:	white, somewhat dilatated, sinuous
Exudate:	—
Other characters:	Bark with an unpleasant smell.

## 51. (BURSERACEAE)

### **Haplolobus floribundus** H. J. L.

Stem:	angular
Knots:	few, small
Flutes:	—
Dead bark:	grey to purplish brown, with small white spots
Scaling:	scales small, soft, detaching easily
Lenticels:	scattered
Buttresses:	low
Stilt roots:	—
Living bark:	
Outer side:	yellowish
Inner side:	white
Slash:	yellowish, laminated
Rays:	indistinct
Exudate:	very little, colourless, sticky resin (× 10 lens)
Other characters:	Bark with a smell of turpentine. Leaves pinnately compound.

## 52. (HERNANDIACEAE)

### **Hernandia ovigera** L.

Stem:	
Knots:	—
Flutes:	—
Dead bark:	shallow-fissured, smooth, grey
Scaling:	—
Lenticels:	—
Buttresses:	root swellings
Stilt roots:	—
Living bark:	
Outer side:	green and yellow
Inner side:	white, slimy

Slash:	white
Rays:	white, strongly dilatated
Exudate:	—
<i>Other characters:</i>	Fruits black in a yellowish green inflated envelop ( $\pm$ 5 cm in diam.) Rhytidome leathery. Preferring seasonal swamps. Wood very soft, white, turning greenish.

**53. (FLACOURTIACEAE) *Homalium foetidum* Benth.**  
 (General English trade name: Aranga, malas)  
 (T.P.N.G. name: Malas)

<i>Stem:</i>	angular
Knots:	—
Flutes:	—
<i>Dead bark:</i>	cankered, smooth, grey
Scaling:	—
Lenticels:	—
<i>Buttresses:</i>	up to 1.5 m high, spreading, plank-like
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green and pale orange-brown
Inner side:	pink to white, with sinuous ridges
Slash:	brown, laminated, mottled near the rhytidome
Rays:	many, white, sinuous
Exudate:	—
<i>Other characters:</i>	Very tall tree with a small crown.

**54. (MYRISTICACEAE) *Horsfieldia sylvestris* Warb.**

<i>Stem:</i>	somewhat twirled
Knots:	—
Flutes:	deep, up to 4 m high
<i>Dead bark:</i>	brownish red with green spots
Scaling:	scales irregular, small, soft
Lenticels:	—
<i>Buttresses:</i>	up to 1 m high, steep, rounded
<i>Stilt roots:</i>	thin
<i>Living bark:</i>	
Outer side:	brown-yellow
Inner side:	pink
Slash:	pink, laminated
Rays:	white, distinct
Exudate:	very much, red, clear
<i>Other characters:</i>	Crown drooping.

55. (PAPILIONACEAE) **Inocarpus fagiferus** Fosb.  
(Indon. name: Gajam)
- Stem:* latticed  
*Knots:* —  
*Flutes:* many, deep  
*Dead bark:* shallow-fissured, greyish brown with many grey spots  
*Scaling:* scales very few, small  
*Lenticels:* rather many, large  
*Buttresses:* steep  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* yellow with red  
*Inner side:* white to pink with ripple marks  
*Slash:* yellowish, red-mottled  
*Rays:* indistinct  
*Exudate:* a little, clear, red  
*Other characters:* Preferring swamps.
56. (CAESALPINIACEAE) **Intsia bijuga** O.K.  
(General English trade name: Mirabow, merbau)  
(Indon. name: Merbau)  
(T.P.N.G. name: Kwila)
- Stem:*  
*Knots:* —  
*Flutes:* —  
*Dead bark:* dipped, greenish grey  
*Scaling:* scales small, circular  
*Lenticels:* small, in short vertical rows  
*Buttresses:* up to 1 m high, symmetrical, rounded  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* green  
*Inner side:* white, with some scattered longitudinal grooves  
*Slash:* brownish-yellow  
*Rays:* white, dilatated  
*Exudate:* —  
*Other characters:* Leaves pinnately compound. Deciduous tree. The bole not over 1 m in diameter.
57. (CAESALPINIACEAE) **Intsia palembanica** Miq.  
(General English trade name: Mirabow, merbau)  
(Indon. name: Merbau)  
(T.P.N.G. name: Kwila)



<i>Stem:</i>	somewhat angular
Knots:	—
Flutes:	—
<i>Dead bark:</i>	dippled, greyish-brown
Scaling:	scales thick, circular
Lenticels:	—
<i>Buttresses:</i>	up to 4 m high, symmetrical, rounded
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	greenish
Inner side:	white, turning orange-yellow on exposure
Slash:	yellowish red, turning orange-yellow on exposure
Rays:	pale yellow, dilatated
Exudate:	—
<i>Other characters:</i>	Leaves pinnately compound. Very large, deciduous trees, the bole can reach a diameter of more than 2 m.

**58. (ANACARDIACEAE)      *Koordersiodendron pinnatum* Merr.**  
 (General English trade name: Amugis, rangus, krepau)

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	rough, strongly fissured bark, dark brownish black, laminated
Scaling:	scales few, oblong, hard, brittle
Lenticels:	—
<i>Buttresses:</i>	up to 1 m high, symmetrical, plank-like
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	white
Slash:	pink, striated
Rays:	indistinct
Exudate:	a little, colourless, sticky (× 10 lens)
<i>Other characters:</i>	A dense, dark green crown. Leaves pinnately compound. Dead bark laminated.

**59. (FAGACEAE)      *Lithocarpus spec. div.* (syn.: *Quercus spec. div.*)**  
 (Indon. name: Pasang)

<i>Stem:</i>	angular
Knots:	—

Flutes:	many, very shallow
Dead bark:	smooth, vertically cracked
Scaling:	—
Lenticels:	few, large, scattered
Buttresses:	up to 1.3 m high, spreading
Stilt roots:	—
Living bark:	
Outer side:	dark brownish red
Inner side:	brown, with very sharp ridges, turning purple on exposure
Slash:	dark brownish red
Rays:	pale brown, strongly dilatated
Exudate:	—
Other characters:	Often acorns under the tree.

60. (LAURACEAE)

**Litsea firma** Hook. f.  
(Indon. name: Medang)

Stem:	
Knots:	few, small
Flutes:	—
Dead bark:	fissured, brownish grey with grey spots
Scaling:	scales few, thick
Lenticels:	many, small
Buttresses:	root swellings
Stilt roots:	—
Living bark:	
Outer side:	yellowish with indistinct ridges
Inner side:	pale yellow with a little slime
Slash:	brownish yellow, laminated, mottled, turning purple on exposure
Rays:	white, indistinct
Exudate:	—
Other characters:	—

61. (LAURACEAE)

**Litsea timoriana** Sparr.  
(Indon. name: Medang)

Stem:	cylindrical
Knots:	—
Flutes:	—
Dead bark:	powdery, brownish purple
Scaling:	scales soft, thin
Lenticels:	—
Buttresses:	—

<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	yellow
Inner side:	white, with a little slime ( $\times 10$ lens)
Slash:	brownish yellow, quickly turning purple on exposure
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	—

62. (CELASTRACEAE)

**Lophopetalum torricellense** Loes.

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, only in the higher part of the bole rather deeply fissured
Scaling:	—
Lenticels:	—
<i>Buttresses:</i>	up to 3 m high, steep
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	dark yellow
Inner side:	pale brown, with many vertical grooves
Slash:	reddish brown laminated, the part near the rhytidome dark yellow
Rays:	white
Exudate:	—
<i>Other characters:</i>	Bark very fibrous.

63. (ANACARDIACEAE)

**Mangifera minor** Bl.

(General English trade name: Amba, manggowood)

<i>Stem:</i>	somewhat twirled
Knots:	—
Flutes:	—
<i>Dead bark:</i>	fissured, dark greyish brown
Scaling:	scales thick, oblong
Lenticels:	few, large
<i>Buttresses:</i>	root swellings
<i>Stilt roots:</i>	--
<i>Living bark:</i>	
Outer side:	dark yellow
Inner side:	yellow with ridges, locally with some red exudate ( $\times 10$ lens)

Slash:	dark yellow, laminated
Rays:	white, indistinct
Exudate:	little, red, sticky ( $\times 10$ lens)
<i>Other characters:</i>	Crown very dense, green. Branches drooping.

64. (SAPOTACEAE)

**Manilkara fasciculata** H. J. L. et M. G.  
(General English trade name: Sner)

<i>Stem:</i>	cylindrical, very straight
Knots:	—
Flutes:	—
<i>Dead bark:</i>	deeply fissured, rough, dark brownish black
Scaling:	scales few, small, brittle
Lenticels:	—
<i>Buttresses:</i>	up to 1.5 m high, symmetrical, rounded
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	pink
Slash:	pale orange-brown
Rays:	indistinct
Exudate:	very much milky latex
<i>Other characters:</i>	Wood very hard.

65. (CAESALPINIACEAE)

**Maniltoa plurijuga** M. et P.

<i>Stem:</i>	angular
Knots:	—
Flutes:	shallow
<i>Dead bark:</i>	smooth, hooped, brownish black
Scaling:	—
Lenticels:	many, small, scattered
<i>Buttresses:</i>	up to 2 m high, symmetrical
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	brown, rather rough
Slash:	red, laminated, indistinct
Rays:	yellowish brown, dilatated
Exudate:	—
<i>Other characters:</i>	Bark fragrant. Leaves pinnately compound. Young leaves in white tassels.

66. (CORNACEAE)

**Mastixia pentandra** Bl.

*Stem:*

Knots: —

Flutes: —

*Dead bark:* smooth, hooped, fairly rough, grey

Scaling: —

Lenticels: many, small

*Buttresses:* up to 2 m high

*Stilt roots:* —

*Living bark:*

Outer side: green

Inner side: dirty white

Slash: yellowish, turning brown on exposure, with many brown gum canals ( $\times 10$  lens)

Rays: dilatated

Exudate: —

*Other characters:* —

67. (RUBIACEAE)

**Mastixiodendron pachyclados** Melch.

(General English trade name: Lantjat)

(T.P.N.G. name: gara)

*Stem:* angular, tapering

Knots: —

Flutes: —

*Dead bark:* fairly rough, brown

Scaling: scales few

Lenticels: —

*Buttresses:* up to 2 m high, wide spreading

*Stilt roots:* —

*Living bark:*

Outer side: yellow

Inner side: brownish yellow

Slash: pale brown, laminated, quickly turning purplish-black on exposure

Rays: —

Exudate: —

*Other characters:* Crown dark green, dense.

68. (ANNONACEAE)

**Milusa koolsii** Sincl.

*Stem:*

Knots: —

Flutes: —

*Dead bark:* brown

Scaling:	flakes, brittle, detaching easily
Lenticels:	—
Buttresses:	up to 1.5 m high
Stilt roots:	—
Living bark:	
Outer side:	yellow or brownish
Inner side:	pink to dirty white, fissured (× 10 lens)
Slash:	brown, striated
Rays:	pale brown
Exudate:	—
Other characters:	Tree with a slender bole and a small crown. Bark very hard, fibrous.

69. (SAPOTACEAE)

**Mimusops elengi L.**  
(Indon. name: Tandjung)

Stem:	
Knots:	—
Flutes:	—
Dead bark:	deeply fissured, rough, dark grey-brown
Scaling:	scales thin, brittle
Lenticels:	—
Buttresses:	root swellings
Stilt roots:	—
Living bark:	
Outer side:	red
Inner side:	white
Slash:	pink
Rays:	indistinct
Exudate:	much milky latex
Other characters:	Preferring sandy soil or rocky hills near the coast.

70 (MYRISTICACEAE)

**Myristica spec.**  
(Indon. name: Pala utan)  
(T.P.N.G. name: Nutmeg)

Stem:	
Knots:	—
Flutes:	—
Dead bark:	brownish black, very rough, shallow-fissured
Scaling:	scales few, small, thin
Lenticels:	—
Buttresses:	—
Stilt roots:	up to 1.5 m high
Living bark:	

Outer side:	reddish
Inner side:	pink
Slash:	red, laminated
Rays:	somewhat dilatated
Exudate:	very much, red, clear
<i>Other characters:</i>	Preferring seasonal swamps.

**71. (RUBIACEAE) *Neonauclea spec. (a)***

<i>Stem:</i>	somewhat twirled
Knots:	—
Flutes:	—
<i>Dead bark:</i>	greyish-brown, in two parts: outer part leathery, inner part spongy
Scaling:	scales few, soft
Lenticels:	very few, small
<i>Buttresses:</i>	up to 3 m high, widely spreading
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	pink
Inner side:	white, turning brown on exposure
Slash:	pink, turning brown on exposure
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	Old leaves red. Preferring seasonal swamps.

**72. (RUBIACEAE) *Neonauclea spec. (b)***

<i>Stem:</i>	slightly twirled
Knots:	—
Flutes:	—
<i>Dead bark:</i>	greyish brown
Scaling:	scales small, detaching rather easily
Lenticels:	many, scattered
<i>Buttresses:</i>	up to 1.5 m high, spreading
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	pink
Inner side:	very pale brown, quickly turning orange on exposure
Slash:	pink, turning orange on exposure
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	Bark fibrous. Old leaves red.

73. (Datisceae)

**Octomeles sumatrana** Miq.

(General English trade name: Binuang, erima)

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	pale brown, rough, shallow-fissured
Scaling:	scales soft, crumbly
Lenticels:	—
<i>Buttresses:</i>	up to 1.5 m high, widely spreading
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	white, turning purple on exposure
Inner side:	purple brown, turning darker on exposure
Slash:	pale brown, mottled, turning purple on exposure
Rays:	white
Exudate:	—
<i>Other characters:</i>	Bark with an intoxicant smell. Leaves rather large, cordate; petiole 5-angular.

74. (Sapotaceae)

**Palaquium amboinense** Burck.

(General English trade name: Nyatoh, mernaki)

<i>Stem:</i>	cylindrical
Knots:	few, small
Flutes:	—
<i>Dead bark:</i>	deeply fissured, dark brownish black with white spots
Scaling:	scales oblong, brittle
Lenticels:	rather many
<i>Buttresses:</i>	up to 2.5 m high, steep, rounded
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	pink
Slash:	red, laminated
Rays:	white
Exudate:	much milky latex
<i>Other characters:</i>	—

75. (Flacourtiaceae)

**Pangium edule** Reinw.

<i>Stem:</i>	crooked
Knots:	few, large
Flutes:	—
<i>Dead bark:</i>	brown, fairly rough, pocked-marked



Scaling:	scales small, circular
Lenticels:	many, scattered
Buttresses:	up to 1.5 m high, rounded
Stilt roots:	—
Living bark:	
Outer side:	yellow
Inner side:	yellow
Slash:	yellowish brown; near the rhytidome many white and dark dots
Rays:	white, dilatated
Exudate:	—
Other characters:	Bark with unpleasant smell (HCN). Crown dark green, dense. Leaves large, cordate.

**76. (GUTTIFERAE)**

**Pentaphalangium pachycarpum A. C. Sm.**

Stem:	
Knots:	—
Flutes:	—
Dead bark:	powdery, greyish black
Scaling:	scales thin, soft, detaching easily
Lenticels:	—
Buttresses:	up to 1 m high, symmetrical
Stilt roots:	—
Living bark:	
Outer side:	dirty white
Inner side:	white, slightly fissured, with some milky latex
Slash:	white
Rays:	fairly wide, white, somewhat dilatated
Exudate:	much white latex
Other characters:	Ripe fruits red to purple, 10 × 4 cm, edible. Preferring seasonal swamps.

**77. (EUPHORBIACEAE)**

**Pimeleodendron amboinicum Hassk.**

Stem:	
Knots:	—
Flutes:	—
Dead bark:	smooth, pock-marked, greyish brown
Scaling:	—
Lenticels:	many, small
Buttresses:	—
Stilt roots:	—
Living bark:	
Outer side:	reddish purple

Inner side:	dark yellow
Slash:	yellowish brown, turning purple on exposure
Rays:	—
Exudate:	much milky latex
<i>Other characters:</i>	Bark fragrant, with the smell of young coconut. Preferring seasonal swamps.

**78. (NYCTAGINACEAE)**

***Pisonia umbellifera* Seem.**

<i>Stem:</i>	short
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, brown
Scaling:	—
Lenticels:	small, scattered
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green
Inner side:	dirty white, turning greenish on exposure
Slash:	yellowish
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	Bark and wood extremely soft. Preferring sandy soil.

**79. (SAPOTACEAE)**

***Planchonella ripicola* v. Royen**

<i>Stem:</i>	somewhat angular
Knots:	few, big
Flutes:	—
<i>Dead bark:</i>	greyish brown, very rough
Scaling:	scales, few, small
Lenticels:	—
<i>Buttresses:</i>	up to 3 m high, widely spreading, plank-like
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green
Inner side:	white
Slash:	yellow, laminated
Rays:	—
Exudate:	much milky latex
<i>Other characters:</i>	Bark fragrant, with the smell of young coconut.

## 80. (PODOCARPACEAE)

**Podocarpus blumei** Endl.  
(General English trade name: Kajoerapat)  
(Indon. name: Kaju tjina)

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	dippled, purplish brown
Scaling:	scales thick, circular
Lenticels:	—
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green or purplish brown-red
Inner side:	pink, turning orange-brown on exposure
Slash:	pink, turning orange on exposure
Rays:	indistinct
Exudate:	little sticky white resin (× 10 lens)
<i>Other characters:</i>	Crown drooping. Wood without vessels.

## 81. (ANNONACEAE)

**Polyalthia glauca** Boerl.

<i>Stem:</i>	rather angular, with a ring-grooved bark
Knots:	—
Flutes:	—
<i>Dead bark:</i>	smooth, ring-grooved, dark grey
Scaling:	—
Lenticels:	—
<i>Buttresses:</i>	root swellings
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	brownish yellow
Inner side:	pale yellow, with many small longitudinal ridges (× 10 lens)
Slash:	yellowish brown, laminated; the part near the cambium pale yellow
Rays:	strongly dilatated, striated
Exudate:	—
<i>Other characters:</i>	—

## 82. (SAPINDACEAE)

**Pometia pinnata** Forst. f. **repanda** Jacobs

(General English trade name: Matoa)  
(T.P.N.G. name: Taun)

<i>Stem:</i>	somewhat angular
Knots:	—

Flutes:	—
<i>Dead bark:</i>	dippled, red-brown, laminated
Scaling:	scales thick, circular, brittle
Lenticels:	—
<i>Buttresses:</i>	up to 2 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green
Inner side:	pink, with large ridges
Slash:	red, laminated with white bands and dark dots
Rays:	narrow, white
Exudate:	a little, sticky, red resin (× 10 lens)
<i>Other characters:</i>	Leaves pinnately compound. Young leaves red.

83. (SAPINDACEAE)

***Pometia pinnata*** Forst f. ***pinnata*** Jacobs  
(General English trade name: Matoa)  
(T.P.N.G. name: Taun)

<i>Stem:</i>	somewhat angular
Knots:	—
Flutes:	very shallow
<i>Dead bark:</i>	dippled, red-brown, laminated
Scaling:	scales thin, circular, brittle
Lenticels:	—
<i>Buttresses:</i>	up to 2 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	green
Inner side:	pink, turning orange on exposure
Slash:	brownish red, laminated
Rays:	narrow, white
Exudate:	a little, sticky, red, clear (× 10 lens)
<i>Other characters:</i>	Leaves pinnately compound. Young leaves red.

84. (SAPINDACEAE)

***Pometia pinnata*** Forst. f. ***glabra*** Jacobs  
(general English trade name: Matva)  
(T.P.N.G. name: Taun)

<i>Stem:</i>	more or less twirled
Knots:	—
Flutes:	—
<i>Dead bark:</i>	dippled, brown-grey, laminated
Scaling:	scales small, circular
Lenticels:	—
<i>Buttresses:</i>	up to 1.5 m. high

<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	pink, with very sharp ridges
Slash:	red, laminated
Rays:	narrow, white
Exudate:	a little, sticky, red, clear ( $\times 10$ lens)
<i>Other characters:</i>	Leaves pinnately compound. Young leaves red. Bole rather short, about 10 m. Preferring seasonal swamps and river banks. Fruits edible.

**85. (SAPOTACEAE)**

***Pouteria rhopalocarpa* van Royen**

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	purplish brown
Scaling:	flakes thick, brittle
Lenticels:	small, in short vertical rows
<i>Buttresses:</i>	up to 1.5 m high
<i>Stiltroots:</i>	—
<i>Living bark:</i>	
Outer side:	pink
Inner side:	white, turning red on exposure
Slash:	pink, laminated
Rays:	indistinct
Exudate:	much white milky latex
<i>Other characters:</i>	—

**86. (ROSACEAE)**

***Prunus arborea* Kalkm.**

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	fairly rough, greyish brown
Scaling:	scales few, small
Lenticels:	few, scattered
<i>Buttresses:</i>	root swellings
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	yellow, dark mottled, turning orange-brown on exposure
Inner side:	pale brown
Slash:	red, turning orange-brown on exposure
Rays:	pink, dilatated

Exudate: —  
*Other characters:* Bark with a very strong smell of almonds.

87. (PAPILIONACEAE)

***Pterocarpus indicus* Willd.**

(General English trade name: Amboyna, narra, Manila padauk)

(Indon. name: Linggoa)

(T.P.N.G. name: New Guinea rosewood)

*Stem:* more or less crooked  
*Knots:* few, small  
*Flutes:* shallow  
*Dead bark:* brown-grey, powdery  
*Scaling:* scales thin, soft  
*Lenticels:* few, scattered  
*Buttresses:* up to 2.5. m high, steep, plank-like  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* white  
*Inner side:* white  
*Slash:* white  
*Rays:* indistinct  
*Exudate:* a little dark red, clear

*Other characters:* Deciduous tree. Bark very thin, difficult to peel from the wood. Pods flat, circular ( $\pm 5$  cm in diam). Leaves pinnately compound.

88. (STERCULIACEAE)

***Pterygota horsfieldii* Kosterm.**

(General English trade name: *Pterygota*, *impa*)

*Stem:* cylindrical  
*Knots:* —  
*Flutes:* —  
*Dead bark:* shallow-fissured, purple-brown with many white spots  
*Scaling:* —  
*Lenticels:* scattered  
*Buttresses:* up to 5 m high, steep, rounded  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* yellow  
*Inner side:* yellow  
*Slash:* yellowish brown, laminated; near the rhytidome striated  
*Rays:* white, strongly dilatated

Exudate: —  
*Other characters:* Bark very fibrous with an unpleasant smell, and easy to tear into pieces.

89. (STERCULIACEAE) **Scaphium beccarii** Kosterm. (syn. *Pterocymbium beccarii* K. Schum.)

*Stem:* cylindrical  
*Knots:* —  
*Flutes:* —  
*Dead bark:* smooth, shallow-fissured, dark grey with many white spots  
*Scaling:* —  
*Lenticels:* —  
*Buttresses:* up to 2.5 m high  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* red with dark green stripes  
*Inner side:* pale brown with longitudinal boat-shaped ridges ( $\times 10$  lens)  
*Slash:* dark red, thick, laminated  
*Rays:* white, strongly dilatated  
*Exudate:* —  
*Other characters:* Deciduous tree. Bark very thick (more than 20 mm). Wood and bark very soft.

90. (ELAEOCARPACEAE) **Sloanea pullei** A. C. Sm.

*Stem:* rather angular  
*Knots:* —  
*Flutes:* —  
*Dead bark:* smooth, dark brown  
*Scaling:* —  
*Lenticels:* many, small, scattered  
*Buttresses:* symmetrical, up to 1.3 m high  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* yellowish and somewhat pinkish  
*Inner side:* white, turning purple on exposure  
*Slash:* red, turning purple on exposure, the part near the cambium white (1.5 mm thick)  
*Rays:* strongly dilatated  
*Exudate:* —  
*Other characters:* Fruits dehiscent, thorny.

91. (EUPHORBIACEAE) **Spathiostemon javense** Bl. (syn. *Homonoia javense* M.A.)
- Stem:* fluted, crooked  
*Knots:* few, small  
*Flutes:* many, deep  
*Dead bark:* greyish brown with a purple tint  
*Scaling:* scales thin, detaching easily  
*Lenticels:* –  
*Buttresses:* –  
*Stilt roots:* –  
*Living bark:*  
*Outer side:* brown  
*Inner side:* brown  
*Slash:* brown  
*Rays:* indistinct  
*Exudate:* –  
*Other characters:* Bark very thin, difficult to peel from the wood.
92. (ANACARDIACEAE) **Spondias cytherea** Sonn.  
(Indon. name: Kedondong utan)
- Stem:* cylindrical  
*Knots:* –  
*Flutes:* –  
*Dead bark:* shallow-fissured, yellowish brown with grey spots, leathery  
*Scaling:* –  
*Lenticels:* large, scattered  
*Buttresses:* up to 2.5 m high and 1.25 m wide, rounded  
*Stilt roots:* –  
*Living bark:*  
*Outer side:* dark red with yellow stripes  
*Inner side:* white, with colourless sticky exudate (× 10 lens)  
*Slash:* red, laminated  
*Rays:* indistinct  
*Exudate:* a little, watery, sticky, colourless (× 10 lens)  
*Other characters:* Deciduous tree. Bark fibrous. Leaves pinnately compound. Preferring seasonal swamps.
93. (ICACINACEAE) **Stemonurus monticolus** Sleum. (syn. *Urandra brassii* How.)
- Stem:*  
*Knots:* –  
*Flutes:* –



<i>Dead bark:</i>	cracked, greyish brown, smooth; slash granular, resembles palmwood
Scaling:	—
Lenticels:	rather many, scattered
<i>Buttresses:</i>	—
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	brownish yellow with green spots
Inner side:	white
Slash:	yellowish brown, laminated; near the cambium mottled, resembling palmwood
Rays:	wide but only visible near the cambium
Exudate:	—
<i>Other characters:</i>	—

**94. (STERCULIACEAE)      *Sterculia obovatifolia* F. v. M.**

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	greyish brown
Scaling:	scales few
Lenticels:	rather few
<i>Buttresses:</i>	up to 1.25 m high, rounded
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red and green with white stripes
Inner side:	white, with longitudinal boat-shaped ridges
Slash:	red, striated
Rays:	strongly dilatated
Exudate:	—
<i>Other characters:</i>	Deciduous tree. Bark very fibrous. Old leaves red.

**95. (MYRTACEAE)      *Syzygium versteegii* M. et P.  
(T.P.N.G. name: Satinash)**

<i>Stem:</i>	somewhat angular
Knots:	—
Flutes:	—
<i>Dead bark:</i>	powdery, pale brown
Scaling:	scales soft
Lenticels:	—
<i>Buttresses:</i>	up to 1 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	

Outer side:	dark green
Inner side:	white, with few ridges, turning purple on exposure
Slash:	red, laminated, turning purple on exposure
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	—

**96. (COMBRETACEAE)**

***Terminalia rubiginosa* K. Schum.**

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	greyish brown
Scaling:	scales, soft, thin, detaching easily
Lenticels:	—
<i>Buttresses:</i>	up to 2.5 m high and 1.5 m wide
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	pale yellow, turning purple on exposure
Slash:	reddish, laminated, turning purple on exposure
Rays:	indistinct
Exudate:	—
<i>Other characters:</i>	Deciduous tree. Bark fibrous. Old leaves red.

**97. (COMBRETACEAE)**

***Terminalia spec.***

<i>Stem:</i>	
Knots:	—
Flutes:	—
<i>Dead bark:</i>	shallow-fissured, greyish brown
Scaling:	scales, few, small
Lenticels:	—
<i>Buttresses:</i>	root swellings
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	reddish purple
Inner side:	yellowish, turning dark purplish brown on exposure
Slash:	brownish red, quickly turning purplish brown on exposure
Rays:	white, dilatated
Exudate:	—
<i>Other characters:</i>	Deciduous tree. Old leaves turning red.

98. (DATISCEAE) **Tetrameles nudiflora** R. Br.  
 (General English trade name: Kapong, sompong)  
*Stem:* cylindrical  
*Knots:* —  
*Flutes:* —  
*Dead bark:* shallow-fissured, greenish grey  
*Scaling:* scales soft, thin  
*Lenticels:* few, scattered  
*Buttresses:* up to 3 m high  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* brownish yellow  
*Inner side:* pale yellow with shallow grooves  
*Slash:* pale brownish yellow, turning purplish brown on exposure  
*Rays:* white, strongly dilatated  
*Exudate:* —  
*Other characters:* Deciduous tree.
99. (VERBENACEAE) **Teysmanniodendron bogoriense** Kds.  
*Stem:* crooked, somewhat angular  
*Knots:* —  
*Flutes:* —  
*Dead bark:* grey, granular, resembling palmwood  
*Scaling:* scales, few, thick, small  
*Lenticels:* —  
*Buttresses:* up to 1.25 m high, rounded  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* yellowish  
*Inner side:* yellowish with orange ridges  
*Slash:* brownish yellow, quickly turning green on exposure, with fairly large dark coloured dots  
*Rays:* indistinct  
*Exudate:* —  
*Other characters:* Leaves palmately compound.
100. (MELIACEAE) **Toona sureni** Merr. (syn. *Cedrela febrifuga* Bl.)  
 (General English trade name: Toon, limpaga, suren)  
 (Indon. name: Suren)  
 (T.P.N.G. name: Red cedar)  
*Stem:* cylindrical

Knots:	many, small
Flutes:	—
<i>Dead bark:</i>	deep-fissured, dark grey with large white spots
Scaling:	scales, few, thick, brittle
Lenticels:	—
<i>Buttresses:</i>	up to 3.5 m high, spreading
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	dark purplish red
Inner side:	white
Slash:	red, laminated
Rays:	indistinct
Exudate:	a little, red (× 10 lens)
<i>Other characters:</i>	Deciduous tree. Leaves pinnately compound.

101. (ULMACEAE)

**Trema orientalis L.**

<i>Stem:</i>	fairly angular
Knots:	few, small
Flutes:	—
<i>Dead bark:</i>	smooth, brown with large greyish green spots
Scaling:	—
Lenticels:	many, very small, often in short vertical rows
<i>Buttresses:</i>	up to 0.5 m high
<i>Stilt roots:</i>	—
<i>Living bark:</i>	
Outer side:	red
Inner side:	pale brown, with shallow grooves (× 10 lens)
Slash:	red, laminated, the part near the cambium yellowish; near the rhytidome fairly large white spots strongly dilatated
Rays:	strongly dilatated
Exudate:	a little, colourless, sticky (× 10 lens)
<i>Other characters:</i>	In secondary growth. Bark with an unpleasant smell.

101. (FLACOURTIACEAE)

**Trichadenia philippinensis Merr.**

<i>Stem:</i>	cylindrical
Knots:	—
Flutes:	—
<i>Dead bark:</i>	rough, grey
Scaling:	flakes fairly large
Lenticels:	—
<i>Buttresses:</i>	up to 4 m high, rounded
<i>Stilt roots:</i>	—

*Living bark:*  
 Outer side: brownish red  
 Inner side: white  
 Slash: orange-brown, mottled with many small dots  
 Rays: indistinct  
 Exudate: —  
*Other characters:* Bark with an unpleasant smell.

103. (SAPINDACEAE) **Tristiropsis acutangula** Radlk.

*Stem:* angular  
 Knots: —  
 Flutes: shallow  
*Dead bark:* rough, dark grey with white spots  
 Scaling: scales few, small  
 Lenticels: very small  
*Buttresses:* root swellings  
*Stilt roots:* —  
*Living bark:*  
 Outer side: pink  
 Inner side: pale yellowish brown, with some very sharp ridges  
 Slash: red, in two tangential layers; the part near the cambium yellowish  
 Rays: indistinct  
 Exudate: —  
*Other characters:* Leaves bipinnately compound.

104. (MORACEAE) **Trophis philippinensis** F. Vill.

*Stem:*  
 Knots: —  
 Flutes: —  
*Dead bark:* ring-grooved, fairly smooth, brownish green with few large white spots  
 Scaling: —  
 Lenticels: large, sometimes united into vertical rows  
*Buttresses:* —  
*Stilt roots:* —  
*Living bark:*  
 Outer side: yellow with green stripes  
 Inner side: white  
 Slash: yellowish  
 Rays: strongly dilatated  
 Exudate: much white latex  
*Other characters:* —

105. (DIPTEROCARPACEAE) **Vatica papuana** Dyer  
(General English trade name: Laguna, resak)
- Stem:* fairly cylindrical  
*Knots:* —  
*Flutes:* —  
*Dead bark:* hooped, smooth, dark greyish brown  
*Scaling:* —  
*Lenticels:* —  
*Buttresses:* —  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* brown-red  
*Inner side:* yellow, with boat-shaped ridges ( $\times 10$  lens)  
*Slash:* yellowish brown  
*Rays:* yellow, dilatated  
*Exudate:* —  
*Other characters:* Bark with a smell of young coconut. In old slash wounds some resin.
106. (VERBENACEAE) **Vitex cofassus** Reinw.  
(General English trade name: Gofassa, vitex)  
(Indon. name: Gofassa)  
crooked, more or less twirled, angular
- Stem:*  
*Knots:* —  
*Flutes:* —  
*Dead bark:* grey  
*Scaling:* scales thin, brittle  
*Lenticels:* —  
*Buttresses:* up to 0.5 m high  
*Stilt roots:* —  
*Living bark:*  
*Outer side:* pale yellow with some green spots  
*Inner side:* pale yellow, turning green on exposure  
*Slash:* pale yellow, laminated, turning dark green on exposure  
*Rays:* white, somewhat dilatated  
*Exudate:* very little, near the cambium, colourless, ( $\times 10$  lens)  
*Other characters:* Preferring sandy soil.
107. (VERBENACEAE) **Vitex quinata** F. N. Vill.  
*Stem:* somewhat twirled  
*Knots:* —

Flutes:	fairly deep, up to 3 m high
Dead bark:	greyish brown with large white spots
Scaling:	scales soft, detaching easily
Lenticels:	—
Buttresses:	up to 0.8 m high
Stilt roots:	—
Living bark:	
Outer side:	yellowish
Inner side:	pale brown, turning green on exposure
Slash:	pale yellow
Rays:	white
Exudate:	very little near the cambium, colourless, (× 10 lens)
Other characters:	—

108. (POLYGALACEAE)

**Xanthophyllum papuanum** Melch.

Stem:	cylindrical
Knots:	few, small
Flutes:	—
Dead bark:	smooth, grey with large greenish brown spots
Scaling:	—
Lenticels:	—
Buttresses:	up to 1 m high, spreading
Stilt roots:	—
Living bark:	
Outer side:	dark green or dark yellow
Inner side:	white
Slash:	dark yellow, structure indistinct
Rays:	indistinct
Exudate:	—
Other characters:	Bark very granular.