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# The Gardens' Bulletin

## Singapore

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# THE GARDENS' BULLETIN

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*Titles and authors:* The title should give a concise description of the content of the paper. The name(s) and affiliation(s) of author(s) must be given below the title. Lengthy papers and those of a complex nature must have the contents listed at the beginning of the paper.

*Scientific names:* The complete scientific name – genus, species, authority, and cultivar where appropriate – must be cited for every organism at time of first mention. The generic name may be abbreviated to the initial thereafter except where intervening references to other genera with the same initial could cause confusion.

*Tables:* All tables should be numbered and carry headings describing their content. These should be comprehensive without reference to the text.

*Abbreviations:* Standard chemical symbols may be used in text (e.g. IAA, IBA, ATP), but the full term should be given on the first mention. Dates should be cited as: 3 May 1976. Units of measurement should be spelled out except when preceded by a numeral where they should be abbreviated in standard form: g, mg, ml, etc. and not followed by stops.

*Literature citations:* Citations in the text should take the form: King and Chan (1964). If several papers by the same author in the same year are cited, they should be lettered in sequence (1964a), (1964b), etc. When papers are by three or more authors they should be cited as e.g., Geesink et al. (1981). All references must be placed in alphabetic order according to the surname of the (first) author and in the following form:

Singh, H. (1976). Sclereids in *Fagraea*. *Gard. Bull. Sing.* 22, 193–212.

Abbreviations of titles of journals should be those of the World List of Scientific Periodicals (4th Edition) or the Selected Abbreviated Titles of Biological Journals (London: Institute of Biology).

References to books and monographs should be cited according to the following form:  
Ridley, H.N. (1930). *The Dispersal of Plants Throughout the World*, L. Reeve; Ashford, Kent: 242-255.

For literature citations in taxonomic papers the following style is required:  
*Medinilla alternifolia* Bl., Mus. Bot. Lugd.-Bat. I:2(1849) 19.  
*Sterculia acuminatissima* Merr., Philip. J. Sci. 21 (1922) 524.

*Illustrations:* Drawings should be done in Indian ink. Authors should indicate where individual illustrations receive first mention in the text.

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# A Catalogue of the Vascular Plants of Malaya

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## Abstract

An annotated check-list of the native and naturalized vascular plant species of Peninsular Malaysia and the Republic of Singapore is presented. The catalogue includes important synonyms, a brief description and notes on the habitat and distribution of each species.

## Introduction

There has been no attempt, at least in recent times, to bring together the vascular plant flora of the Malay Peninsula in a single published list. Ridley completed publication of his *Flora of the Malay Peninsula* in 1925, which did not include the pteridophytes, though he published lists of the ferns and fern allies elsewhere (Ridley 1908, 1919, 1926). Our taxonomic understanding of the plants of this area has improved greatly since Ridley completed his monumental flora; many families have been treated in *Flora Malesiana*, the trees have been monographed in the four volumes of the *Tree Flora of Malaya*, books containing authoritative treatments of the ferns, grasses and orchids (Holtum 1964, 1968, Gilliland 1971, Seidenfaden & Wood 1992) have appeared, and countless articles in taxonomic journals revising different groups have been published. Over the last seventy years many new species have been described, nomenclatural mistakes have been corrected, true identities discerned and generic and family limits redefined. The information regarding these changes is spread across a vast array of literature, not easily available in the area of the flora itself. I believe one solution to this problem is a new catalogue of the vascular plants of the Malay Peninsula which contains references to the important, but disparate, literature relevant to the Malayan flora. A complete flora with full keys and descriptions would undoubtedly be even more useful, but such a work would take many years and considerable resources to complete. In the interim the catalogue will direct the reader to the places where the sort of information a flora would contain can be found.

## Area Covered

The Malay Peninsula is the extension of Continental Asia pointing southward from Indochina which divides the Andaman Sea and the Strait of Malacca from the South China Sea. Politically, the Peninsula includes the territory of Thailand

and Malaysia. Most of the Malay Peninsula has an everwet tropical climate and supports tropical rain forest vegetation. The northern part is climatically more seasonal and the Isthmus of Kra is considered to be the site of an ecotone between the evergreen and periodically deciduous forests (Whitmore 1975). This boundary is also an important phytogeographic one, and represents one of the main demarcation knots defining the floristic region known as Malesia (van Steenis 1948). While a small part of Malesia is found in the far south of Thailand, there are considerable problems encountered in trying to localize botanical collections in this area. To simplify this matter, the current catalogue has taken the border between Malaysia and Thailand as the northern limit for inclusion. Therefore several species, such as *Didissandra flammea* Ridl. and *Paraboea lancifolia* (Ridl.) B.L. Burtt, that were included by Ridley in his flora, have been omitted because they have yet to be recorded from Peninsular Malaysia or Singapore.

The island of Singapore nestles in the tip of the Peninsula, and because of historic and biogeographic affinities it appears reasonable to include the Republic of Singapore in the catalogue. Similarly, all the offshore islands that are part of the territory of the eleven states that make up Peninsular Malaysia are included as well.

## Species Included

Species of vascular plant have been included in the catalogue if they are believed to exist as self-sustaining populations in the wild of Peninsular Malaysia or Singapore. An attempt has been made to distinguish between native and naturalized species, but for some, particularly weeds, it is difficult to be certain of their true origins. Species only found in cultivation, or recorded as rare escapes are omitted.

## Classification System and Order of Presentation

I have followed† Brummit (1992) for the classification of the flora, strictly for the delimitation of families, and with only a few exceptions for the recognition of genera. The 'Kew System' has the advantage of being one of the few that includes pteridophytes as well as spermatophytes, and is also fairly conservative. The flora is first divided into the traditional major groups which are presented in the order: fern-allies, ferns, gymnosperms, dicots and monocots. Within each major group, the families are given in alphabetical order, with genera and species listed for each in alphabetical order also. Before the catalogue proper, a conspectus of genera recognized for each family is presented in the same order as in the catalogue, with some summary statistics of the numbers of species in each genus and the number of genera and species in each family.

Intraspecific taxa down to the rank of variety are included in the catalogue. Taxa below this rank, such as forma, are omitted. A binomial implies the type subspecies or variety, but should not be taken as a definitive statement on this matter.

## Species Entry Format

The entry in the catalogue for each species can be summarized as follows:

code number **accepted name**, reference; *synonym*, reference;  
description; habitat; distribution; biogeographic status.

### code number

Each taxon is referred to by a code (e.g. 57.2.12) of three numbers separated by stops. The first number refers to the family, the second the genus and the third the species. When a species is represented by more than one infraspecific taxon then each is separately referred to by suffixed letters beginning from a.

### accepted name

The taxonomically correct name is given in bold type at the start of each entry. Generic names are spelled in line with Brummit (1992) and are taken to follow the gender indicated by Greuter *et al.* (1993). Authors are abbreviated following Brummitt and Powell (1992).

### references

After each taxon name comes one or more references to its use, generally including one that contains an adequate description of the species. Each reference consists of a reference code and the page number on which the name in question is employed. The reference code leads to the appropriate full entry in the list of references. I make no apology for not abbreviating the bibliography entries, because I know from bitter experience that the much-abridged references of many taxonomic works are often very difficult for those with limited library resources to track down and obtain copies. Several important works are abbreviated separately, as given at the start of the list.

### description

A very brief description is given for most species, generally consisting of an indication of life-form and some measure of size at maturity.

### habitat

The general habitat of the species is given, often being reduced to lowland (or hill, or montane) forest.

### distribution

The distribution of each species within Malaya is summarized. Wherever possible this is done by listing the states (the eleven states of Peninsular Malaysia and the Republic of Singapore) from which the species has been recorded. To save space the states have been given standard abbreviations and are listed in a standard sequence that reflects a north-to-south progression of the approximate geographic centres of the territories concerned. The abbreviations and order are as follows:

Ps = Perlis

Kd = Kedah

Pn = Penang (Pulau Pinang)  
Kl = Kelantan  
Tg = Trengganu (Terengganu)  
Pk = Perak  
Ph = Pahang  
Sl = Selangor  
NS = Negeri Sembilan  
Ml = Malacca (Melaka)  
Jh = Johore (Johor)  
Sp = Singapore (Singapura)

When a species is only known from one or two locations, these are given with the following standard abbreviations:

P. = Pulau (Island)  
Bt = Bukit (Hill)  
Gg = Gunung (Mount)  
Sg = Sungei (River)  
F.R. = Forest Reserve

#### **Biogeographic status**

Endemic species, i.e. those not known from areas outside Malaya; are indicated as such at the end of their entry. Taxa that are naturalized have this information at the end of their entry together with an indication of their geographic origins where this is known.

### **Concluding Remarks**

My main reason for embarking on the compilation of this catalogue was the hope that it would prove useful to people interested in the plants of the Malay Peninsula, and maybe surrounding areas as well. I have attempted to make the list as accurate as possible, and am extremely grateful to a number of experts (see acknowledgements) in various plant groups who have critically scrutinized various preliminary drafts. Ultimately, I must accept responsibility for any errors the work contains, and would be grateful to have them pointed out to me.

The perception gained from wading through the literature on the Malayan flora is that by the general standards of the humid tropics this area has a very well-known flora. Yet, the catalogue contains many undescribed species, and new species are being described regularly despite the relatively few botanists working on the flora. It is evident that a lot of work still needs to be conducted before even the basic inventory of the botanical resources of the Malay Peninsula is complete.

## Acknowledgements

The Conservation, Food and Health Foundation are gratefully acknowledged for providing financial support. The following generously assisted in the task of checking the compilation: S. Andrews, P.C. Boyce, B.L. Burt, M.R. Cheek, M.J.E. Coode, Ding Hou, P.J. Edwards, P.I. Forster, D.G. Frodin, B. Hansen, A. Hay, P. Hoffmann, M. Jebb, T. Koyama, D.J. Middleton, B.S. Parris, S. Phillips, C.F. Puttock, D.A. Simpson, C. Taylor, J.F. Veldkamp, K.M. Wong. I would like to thank my colleague, Dr Hugh Tan, for allowing me access to his extensive collection of taxonomic literature, and the staff of the Singapore Botanic Gardens for their unflinching co-operation with this, and other projects.

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## A conspectus of the families and genera of the vascular plant flora of Malaya

The genera recorded as native or naturalized in Malaya are listed in alphabetical order under the appropriate family. Family delimitation follows Brummitt (1992). Italicized names represent those genera represented solely by naturalized species. The number in parentheses after each generic name represents the numbers of species of that genus in the Malayan flora. The number of genera, and the number of species, respectively, in each family are given in square brackets after each family name.

### Fern Allies

#### 1. EQUISETACEAE [1, 1]

- 1.1 *Equisetum* L. (1)

#### 2. LYCOPODIACEAE [3, 19]

- 2.1 *Huperzia* Bernh. (12)  
2.2 *Lycopodiella* Holub (2)  
2.3 *Lycopodium* L. (5)

#### 3. PSILOTACEAE [1, 2]

- 3.1 *Psilotum* Sw. (2)

#### 4. SELAGINELLACEAE [1, 29]

- 4.1 *Selaginella* P.Beauv. (29)

### Ferns

#### 5. ADIANTACEAE [8, 31]

- |                                  |  |
|----------------------------------|--|
| 5.1 <i>Adiantum</i> L. (12)      | 5.5 <i>Hemionitis</i> L. (1)                     |
| 5.2 <i>Cheilanthes</i> Sw. (4)   | 5.6 <i>Pityrogramma</i> Link (1)                 |
| 5.3 <i>Coniogramme</i> Fée (1)   | 5.7 <i>Syngamma</i> J.Sm. (7)                    |
| 5.4 <i>Doryopteris</i> J.Sm. (2) | 5.8 <i>Taenitis</i> Willd. <i>ex</i> Schkuhr (3) |

#### 6. ASPLENIACEAE [1, 29]

- 6.1 *Asplenium* L. (29)

#### 7. AZOLLACEAE [1, 1]

- 7.1 *Azolla* Lam. (1)

#### 8. BLECHNACEAE [4, 9]

- |                              |                                   |
|------------------------------|-----------------------------------|
| 8.1 <i>Blechnum</i> L. (6)   | 8.3 <i>Stenochlaena</i> J.Sm. (1) |
| 8.2 <i>Brainea</i> J.Sm. (1) | 8.4 <i>Woodwardia</i> Sm. (1)     |

#### 9. CHEIROPLEURIACEAE [1, 1]

- 9.1 *Cheiropleuria* C. Presl (1)

**10. CYATHEACEAE [1, 20]**

- 10.1
- Cyathea*
- Sm. (20)

**11. DAVALLIACEAE [2, 14]**

- 11.1
- Davallia*
- Sm. (12)

- 11.2
- Leucostegia*
- C. Presl (2)

**12. DENNSTAEDTIACEAE [10, 45]**

- 12.1
- Dennstaedtia*
- Bernh. (1)

- 12.6
- Odontosoria*
- Fée (1)

- 12.2
- Histiopteris*
- (J. Argadh) J.Sm. (2)

- 12.7
- Paesia*
- A.St.-Hil. (1)

- 12.3
- Hypolepis*
- Bernh. (5)

- 12.8
- Pteridium*
- Gled.
- ex*
- Scop. (2)

- 12.4
- Lindsaea*
- Dryand. (23)

- 12.9
- Saccoloma*
- Kaulf. (1)

- 12.5
- Microlepia*
- C.Presl (6)

- 12.10
- Tapeinidium*
- (C.Presl) C.Chr (3)

**13. DICKSONIACEAE [1, 1]**

- 13.1
- Cibotium*
- Kaulf. (1)

**14. DIPTERIDACEAE [1, 3]**

- 14.1
- Dipteris*
- Reinw. (3)

**15. DRYOPTERIDACEAE [12, 57]**

- 15.1
- Acrophorus*
- C. Presl (1)

- 15.7
- Heterogonium*
- C. Presl (4)

- 15.2
- Arachniodes*
- Blume (4)

- 15.8
- Peranema*
- D. Don (1)

- 15.3
- Ctenitis*
- (C.Chr.) C.Chr. (2)

- 15.9
- Pleocnemia*
- C.Presl (4)

- 15.4
- Cyclopeltis*
- J.Sm. (1)

- 15.10
- Polystichum*
- Roth (2)

- 15.5
- Didymochlaena*
- Desv. (1)

- 15.11
- Pteridrys*
- C.Chr. & Ching (3)

- 15.6
- Dryopteris*
- Adans. (6)

- 15.12
- Tectaria*
- Cav. (28)

**16. GLEICHENIACEAE [4, 14]**

- 16.1
- Dicranopteris*
- Bernh. (4)

- 16.3
- Gleichenia*
- Sm. (3)

- 16.2
- Diplopterygium*
- (Diels) Nakai (5)

- 16.4
- Sticherus*
- C. Presl (2)

**17. GRAMMITIDACEAE [7, 49]**

- 17.1
- Acrosorus*
- Copel. (2)

- 17.5
- Prosaptia*
- C. Presl (7)

- 17.2
- Calymmodon*
- C. Presl (4)

- 17.6
- Scleroglossum*
- Alderw. (4)

- 17.3
- Ctenopteris*
- Blume
- ex*
- Kunze (10)

- 17.7
- Xiphopteris*
- Kaulf. (7)

- 17.4
- Grammitis*
- Sw. (15)

**18. HYMENOPHYLLACEAE [5, 45]**

- 18.1
- Cephalomanes*
- C. Presl (7)

- 18.4
- Sphaerocionium*
- C. Presl (2)

- 18.2
- Crepidomanes*
- (C. Presl) C. Presl (12)

- 18.5
- Trichomanes*
- L. (7)

- 18.3
- Hymenophyllum*
- Sm. (17)

**19. LOMARIOPSIDACEAE [5, 19]**

- 19.1
- Bolbitis*
- Schott (5)

- 19.4
- Lomariopsis*
- Fée (1)

- 19.2
- Elaphoglossum*
- Schott
- ex*
- J.Sm. (8)

- 19.5
- Teratophyllum*
- Mett.
- ex*
- Kuhn (3)

- 19.3
- Lomagramma*
- J.Sm. (2)

**20. MARRATIACEAE [2, 4]**

- 20.1
- Angiopteris*
- Hoffm. (2)

- 20.2
- Christensenia*
- Maxon (2)



**21. MARSILEACEAE [1, 2]**21.1 *Marsilea* L. (2)**22. MATONIACEAE [1, 2]**22.1 *Matonia* R.Br. ex Wall. (2)**23. OLEANDRACEAE [3, 11]**23.1 *Arthropteris* J.Sm (1)23.3 *Oleandra* Cav. (2)23.2 *Nephrolepis* Schott (8)**24. OPHIOGLOSSACEAE [3, 8]**24.1 *Botrychium* Sw. (1)24.3 *Ophioglossum* L. (6)24.2 *Helminthostachys* Kaulf. (1)**25. OSMUNDACEAE [1, 2]**25.1 *Osmunda* L. (2)**26. PARKERIACEAE [1, 1]**26.1 *Ceratopteris* Brongn. (1)**27. PLAGIOGYRIACEAE [1, 4]**27.1 *Plagiogyria* (Kunze) Mett. (4)**28. POLYPODIACEAE [17, 68]**28.1 *Aglaomorpha* Schott (4)28.10 *Microsorium* Link (4)28.2 *Belvisia* Mirb. (2)28.11 *Neocheiropteris* H. Christ (2)28.3 *Colysis* C. Presl (5)28.12 *Paragramma* (Blume) T. Moore (1)28.4 *Drynaria* (Bory) J.Sm. (4)28.13 *Phymatosorus* Pic.Serm. (4)28.5 *Goniophlebium* C. Presl (5)28.14 *Platyterium* Desv. (4)28.6 *Lecanopteris* Reinw. (3)28.15 *Pyrrosia* Mirb. (8)28.7 *Lemmaphyllum* C. Presl (1)28.16 *Selliguea* Bory (12)28.8 *Leptochilus* Kaulf. (4)28.17 *Thylacopteris* Kunze ex J.Sm. (1)28.9 *Loxogramme* (Blume) C. Presl (4)**29. PTERIDACEAE [2, 16]**29.1 *Acrostichum* L. (2)29.2 *Pteris* L. (14)**30. SALVINIACEAE [1, 2]**30.1 *Salvinia* Ség. (2)**31. SCHIZAEACEAE [2, 14]**31.1 *Lygodium* Sw. (8)31.2 *Schizaea* Sm. (6)**32. THELYPTERIDACEAE [15, 60]**32.1 *Ampelopteris* Kunze (1)32.6 *Cyclosorium* Link (1)32.2 *Amphineuron* Holttum (3)32.7 *Macrothelypteris* (H. Itô) Ching (1)32.3 *Chingia* Holttum (3)32.8 *Mesophlebium* Holttum (5)32.4 *Christella* H. Lév. (7)32.9 *Metathelypteris* (H. Itô) Ching (3)32.5 *Coryphopteris* Holttum (9)32.10 *Parathelypteris* (H. Itô) Ching (1)

- 32.11 **Pneumatopteris** Nakai (3)  
 30.12 **Pronephrium** C. Presl (9)  
 30.13 **Pseudophegopteris** Ching (2)

- 30.14 **Sphaerostephanos** J.Sm. (11)  
 30.15 **Trigonospora** Holttum (1)

### 33. VITTARIACEAE [4, 13]

- 33.1 **Antrophyum** Kaulf. (2)  
 33.2 **Monogramma** Comm. ex Schkuhr (1)

- 33.3 **Vaginularia** Fée (1)  
 33.4 **Vittaria** Sm. (9)

### 34. WOODSIACEAE [5, 36]

- 34.1 **Acystopteris** Nakai (1)  
 34.2 **Athyrium** Roth (2)  
 34.3 **Deparia** Hook. & Grev (2)

- 34.4 **Diplaziopsis** C. Chr. (1)  
 34.5 **Diplazium** Sw. (30)

## Gymnosperms

### 35. ARAUCARIACEAE [1, 2]

- 35.1 **Agathis** Salisb. (2)

### 36. CYCADACEAE [1, 2]

- 36.1 **Cycas** L. (2)

### 37. GNETACEAE [1, 9]

- 37.1 **Gnetum** L. (9)

### 38. PODOCARPACEAE [5, 14]

- 38.1 **Dacrycarpus** (Endl.) de Laub. (1)  
 38.2 **Dacrydium** Lamb. (4)  
 38.3 **Falcatifolium** de Laub. (1)

- 38.4 **Nageia** Gaertn. (2)  
 38.5 **Podocarpus** L'Hér. ex Pers. (6)

## Angiosperms - Dicots

### 39. ACANTHACEAE [29, 158]

- 39.1 **Acanthus** L. (3)  
 39.2 **Andrographis** Wall. ex Nees (2)  
 39.3 **Asystasia** Blume (2)  
 39.4 **Barleria** L. (3)  
 39.5 **Chroesthes** Benoist (1)  
 39.6 **Cosmianthemum** Bremek. (1)  
 39.7 **Dicliptera** Juss. (1)  
 39.8 **Filetia** Miq. (6)  
 39.9 **Gymnostachyum** Nees (12)  
 39.10 **Hemigraphis** Nees (7)  
 39.11 **Hygrophila** R.Br. (8)  
 39.12 **Hypoestes** Sol. ex R.Br. (1)  
 39.13 **Justicia** L. (24)  
 39.14 **Lepidagathis** Willd. (3)  
 39.15 **Nelsonia** R.Br. (1)

- 39.16 **Pararuellia** Bremek. (1)  
 39.17 **Peristrophe** Nees (2)  
 39.18 **Phialacanthus** Bremek. (4)  
 39.19 **Phlogacanthus** Nees (1)  
 39.20 **Pseuderanthemum** Radlk. (12)  
 39.21 **Ptyssiglottis** T. Anderson (7)  
 39.22 **Rhinacanthus** Nees (1)  
 39.23 **Ruellia** L. (4)  
 39.24 **Rungia** Nees (5)  
 39.25 **Staurogyne** Bremek. (16)  
 39.26 **Stenothyrsus** C.B. Clarke (1)  
 39.27 **Strobilanthes** Blume (21)  
 39.28 **Thunbergia** Retz. (7)  
 39.29 **Thysanostigma** J.B. Imlay (1)

**40. ACERACEAE [1, 1]**40.1 *Acer* L. (1)**41. ACTINIDIACEAE [2, 12]**41.1 *Actinidia* Lindl. (2)41.2 *Saurauia* Willd. (10)**42. AIZOACEAE [2, 11]**42.1 *Sesuvium* L. (10)42.2 *Trianthema* L. (1)**43. ALANGIACEAE [1, 7]**43.1 *Alangium* Lam. (7)**44. AMARANTHACEAE [10, 19]**44.1 *Achyranthes* L. (2)44.6 *Cyathula* Blume (1)44.2 *Allmania* R.Br. ex Wight (1)44.7 *Deeringia* R.Br. (2)44.3 *Alternanthera* Forssk. (3)44.8 *Gomphrena* L. (2)44.4 *Amaranthus* L. (5)44.9 *Psilotrichopsis* C.C. Towns. (1)44.5 *Celosia* L. (1)44.10 *Psilotrichum* Blume (1)**45. ANACARDIACEAE [17, 77]**45.1 *Anacardium* L. (1)45.10 *Melanochyla* Hook.f. (9)45.2 *Androtium* Stapf (1)45.11 *Parishia* Hook.f. (3)45.3 *Bouea* Meisn. (2)45.12 *Pentaspadon* Hook.f. (3)45.4 *Buchanania* Spreng. (2)45.13 *Pistacia* L. (1)45.5 *Camnosperma* Thwaites (3)45.14 *Rhus* L. (2)45.6 *Dracontomelon* Blume (1)45.15 *Semecarpus* L.f. (7)45.7 *Drimycarpus* Hook.f. (1)45.16 *Spondias* L. (2)45.8 *Gluta* L. (15)45.17 *Swintonia* Griff. (5)45.9 *Mangifera* L. (19)**46. ANCISTROCLADACEAE [1, 1]**46.1 *Ancistrocladus* Wall. (1)**47. ANISOPHYLLEACEAE [2, 9]**47.1 *Anisophyllea* R.Br. ex Sabine (8)47.2 *Combretocarpus* Hook.f. (1)**48. ANNONACEAE [36, 202]**48.1 *Alphonsea* Hook.f. & Thomson (12)48.14 *Goniothalamus* (Blume) Hook.f. & Thomson (20)48.2 *Anaxagorea* A.St.-Hil. (1)48.15 *Marsypopetalum* Scheff. (1)48.3 *Artabotrys* R.Br. (13)48.16 *Meiogyne* Miq. (2)48.4 *Cananga* (DC.) Hook.f. & Thomson (2)48.17 *Melodorum* Lour. (2)48.5 *Cyathocalyx* Champ. ex Hook.f. & Thomson (8)48.18 *Mezzettia* Becc. (2)48.6 *Cyathostemma* Griff. (7)48.19 *Mezzettiopsis* Ridl. (1)48.7 *Dendrokingstonia* Rauschert (1)48.20 *Miliusa* Lesch. ex A.DC. (3)48.8 *Desmos* Lour. (7)48.21 *Mitrella* Miq. (1)48.9 *Disepalum* Hook.f. (2)48.22 *Mitrephora* (Blume) Hook.f. & Thomson (2)48.10 *Ellipeia* Hook.f. & Thomson (1)48.23 *Monocarpia* Miq. (1)48.11 *Enicosanthum* Becc. (7)48.24 *Neo-Uvaria* Airy Shaw (2)48.12 *Fissistigma* Griff. (8)48.25 *Orophea* Blume (9)48.13 *Friesodielsia* Steenis (12)48.26 *Phaeanthus* Hook.f. & Thomson (2)

- 48.27 *Platymitra* Boerl. (1)  
 48.28 *Polyalthia* Blume (31)  
 48.29 *Popovia* Endl. (6)  
 48.30 *Psueduvaria* Miq. (8)  
 48.31 *Pyramidanthe* Miq. (1)

- 48.32 *Sageraea* Dalzell (2)  
 48.33 *Stelechocarpus* Hook.f. & Thomson (2)  
 48.34 *Trivalvaria* (Miq.) Miq. (3)  
 48.35 *Uvaria* L. (11)  
 48.36 *Xylophia* L. (8)

#### 49. APOCYNACEAE [31, 119]

- 49.1 *Aganosma* G. Don (2)  
 49.2 *Alstonia* R.Br. (7)  
 49.3 *Alyxia* Banks ex R.Br. (6)  
 49.4 *Anodendron* R.Br. (7)  
 49.5 *Beaumontia* Wall. (2)  
 49.6 *Catharanthus* G. Don (1)  
 49.7 *Cerbera* L. (2)  
 49.8 *Chilocarpus* Blume (9)  
 49.9 *Chonemorpha* G. Don (3)  
 49.10 *Cleghornia* Wight (1)  
 49.11 *Dyera* Hook.f. (1)  
 49.12 *Epigynum* Wight (5)  
 49.13 *Holarrhena* R.Br. (1)  
 49.14 *Hunteria* Roxb. (1)  
 49.15 *Ichnocarpus* R.Br. (3)  
 49.16 *Kibatalia* G. Don (4)

- 49.17 *Kopsia* Blume (14)  
 49.18 *Leuconotis* Jack (3)  
 49.19 *Melodinus* J.R. Forst. & G. Forst. (5)  
 49.20 *Neisosperma* Raf. (1)  
 49.21 *Parameria* Benth. (3)  
 49.22 *Parsonsia* R.Br. (4)  
 49.23 *Pottsia* Hook. & Arn. (1)  
 49.24 *Rauvolfia* L. (2)  
 49.25 *Spirolobium* Bail. (1)  
 49.26 *Strophanthus* DC. (4)  
 49.27 *Tabernaemontana* L. (7)  
 49.28 *Urceola* Roxb. (7)  
 49.29 *Vallariopsis* Woodson (1)  
 49.30 *Willughbeia* Roxb. (6)  
 49.31 *Wrightia* R.Br. (3)

#### 50. AQUIFOLIACEAE [1, 20]

- 50.1 *Ilex* L. (20)

#### 51. ARALIACEAE [9, 46]

- 51.1 *Aralia* L. (3)  
 51.2 *Arthrophyllum* Blume (6)  
 51.3 *Brassaiopsis* Decne. & Planch. (5)  
 51.4 *Dendropanax* Decne. & Planch. (2)  
 51.5 *Eleutherococcus* Maxim. (1)

- 51.6 *Gastonia* Comm. ex Lam. (1)  
 51.7 *Macropanax* Miq. (2)  
 51.8 *Schefflera* J.R. Forst. & G. Forst. (24)  
 51.9 *Trevesia* Vis. (2)

#### 52. ARALIDIACEAE [1, 1]

- 52.1 *Aralidium* Miq. (1)

#### 53. ARISTOLOCHIACEAE [2, 12]

- 53.1 *Aristolochia* L. (5)

- 53.2 *Thottea* Rottb. (7)

#### 54. ASCLEPIADACEAE [30, 116]

- 54.1 *Asclepias* L. (1)  
 54.2 *Atherandra* Decne. (1)  
 54.3 *Calotropis* R.Br. (1)  
 54.4 *Ceropegia* L. (2)  
 54.5 *Cryptolepis* R. Br. (1)  
 54.6 *Cynanchum* L. (4)  
 54.7 *Dischidia* R.Br. (24)  
 54.8 *Dregea* E. Mey. (1)

- 54.9 *Finlaysonia* Wall. (1)  
 54.10 *Genianthus* Hook.f. (5)  
 54.11 *Gongronema* (Endl.) Decne. (4)  
 54.12 *Gongylosperma* King & Gamble (1)  
 54.13 *Goniostemma* Wight (1)  
 54.14 *Hemidesmus* R.Br. (1)  
 54.15 *Heterostemma* Wight & Arn. (2)  
 54.16 *Hoya* R.Br. (26)

- 54.17 *Lygisma* Hook.f. (1)  
 54.18 *Marsdenia* R.Br. (11)  
 54.19 *Meladerma* Kerr (1)  
 54.20 *Pentanura* Blume (1)  
 54.21 *Pentasacme* Wall. ex Wight (1)  
 54.22 *Pycnorhachis* Benth. (1)  
 54.23 *Raphistemma* Wall. (1)

- 54.24 *Sarcolobus* R.Br. (1)  
 54.25 *Sarcostemma* R.Br. (1)  
 54.26 *Secamone* R.Br. (1)  
 54.27 *Streptocaulon* Wight & Arn. (2)  
 54.28 *Telosma* Coville (1)  
 54.29 *Toxocarpus* Wight & Arn. (7)  
 54.30 *Tylophora* R.Br. (10)

### 55. AVICENNIACEAE [1, 4]

- 53.1 *Avicennia* L. (4)

### 56. BALANOPHORACEAE [2, 7]

- 56.1 *Balanophora* J.R. Forst. & G. Forst. (6)      56.2 *Exorhophala* Steenis (1)

### 57. BALSAMINACEAE [2, 15]

- 57.1 *Hydrocera* Blume (1)      57.2 *Impatiens* L. (14)

### 58. BEGONIACEAE [1, 48]

- 58.1 *Begonia* L. (48)

### 59. BIGNONIACEAE [9, 12]

- 59.1 *Deplanchea* Vieill. (1)      59.6 *Pajanelia* DC. (1)  
 59.2 *Dolichandrone* (Fenzl) Seem. (1)      59.7 *Radermachera* Zoll. & Moritzi (3)  
 59.3 *Fernandoa* Welw. ex Seem. (1)      59.8 *Spathodea* P. Beauv. (1)  
 59.4 *Hieris* Steenis (1)      59.9 *Stereospermum* Cham. (2)  
 59.5 *Oroxylum* Vent. (1)

### 60. BOMBACACEAE [5, 22]

- 60.1 *Bombax* L. (2)      60.4 *Kostermansia* Soegeng (1)  
 60.2 *Coelostegia* Benth. (2)      60.5 *Neesia* Blume (5)  
 60.3 *Durio* Adans. (12)

### 61. BORAGINACEAE [9, 12]

- 61.1 *Argusia* Boehm. (1)      61.6 *Heliotropium* L. (1)  
 61.2 *Carmona* Cav. (1)      61.7 *Pteleocarpa* Oliv. (1)  
 61.3 *Coldenia* L. (1)      61.8 *Rotula* Lour. (1)  
 61.4 *Cordia* L. (3)      61.9 *Tournefortia* L. (1)  
 61.5 *Ehretia* P. Browne (2)

### 62. BUDDLEJACEAE [1, 3]

- 62.1 *Buddleja* L. (3)

### 63. BURSERACEAE [6, 38]

- 63.1 *Canarium* L. (14)      63.4 *Santiria* Blume (9)  
 63.2 *Dacryodes* Vahl (12)      63.5 *Scutinanthe* Thwaites (1)  
 63.3 *Garuga* Roxb. (1)      63.6 *Triomma* Hook.f. (1)

**64. BUXACEAE [1, 3]**64.1 *Buxus* L. (3)**65. CACTACEAE [1, 1]**65.1 *Opuntia* Mill. (1)**66. CAMPANULACEAE [4, 8]**66.1 *Codonopsis* Wall. (1)66.3 *Lobelia* L. (5)66.2 *Laurentia* Adans. (1)66.4 *Sphenoclea* Gaertn. (1)**67. CAPPARACEAE [4, 17]**67.1 *Capparis* L. (9)67.3 *Crateva* L. (3)67.2 *Cleome* L. (4)67.4 *Stixis* Lour. (1)**68. CAPRIFOLIACEAE [2, 5]**68.1 *Lonicera* L. (1)68.2 *Viburnum* L. (4)**69. CARDIOPTERIDACEAE [1, 1]**69.1 *Cardiopteris* Wall. ex Royle (1)**70. CARYOPHYLLACEAE [4, 5]**70.1 *Cerastium* L. (1)70.3 *Sagina* L. (1)70.2 *Drymaria* Willd. ex Schult. (1)70.4 *Stellaria* L. (2)**71. CASUARINACEAE [1, 1]**71.1 *Casuarina* L. (1)**72. CECROPIACEAE [2, 5]**72.1 *Cecropia* Loefl. (1)72.2 *Poikilospermum* Zipp. ex Miq. (4)**73. CELASTRACEAE [16, 50]**73.1 *Arnicratea* N. Hallé (1)73.9 *Lophopetalum* Wight ex Arn. (8)73.2 *Bhesa* Buch.-Ham. ex Arn. (3)73.10 *Maytenus* Molina (2)73.3 *Cassine* L. (1)73.11 *Microtropis* Wall. ex Meisn. (5)73.4 *Celastrus* L. (2)73.12 *Perrottetia* Kunth (1)73.5 *Euonymus* L. (4)73.13 *Pleurostyliia* Wight & Arn. (1)73.6 *Glyptopetalum* Thwaites (2)73.14 *Reissantia* N. Hallé (1)73.7 *Kokoona* Thwaites (5)73.15 *Salacia* L. (10)73.8 *Loeseneriella* A.C.Sm. (3)73.16 *Siphonodon* Griff. (1)**74. CHLORANTHACEAE [2, 2]**74.1 *Chloranthus* Sw. (1)74.2 *Sarcandra* Gardner (1)**75. CHRYSOBALANACEAE [7, 15]**75.1 *Atuna* Raf. (4)75.5 *Maranthus* Blume (1)75.2 *Chrysobalanus* L. (1)75.6 *Parastemon* A.DC. (1)75.3 *Kostermanthus* Prance (2)75.7 *Parinari* Aubl. (5)75.4 *Licania* Aubl. (1)

**76. CLETHRACEAE [1, 2]**76.1 *Clethra* L. (2)**77. COMBRETACEAE [5, 24]**77.1 *Combretum* Loefl. (10)77.4 *Quisqualis* L. (3)77.2 *Getonia* Roxb. (1)77.5 *Terminalia* L. (8)77.3 *Lumnitzera* Willd. (2)**78. COMPOSITAE [38, 61]**78.1 *Acanthospermum* Schrank (1)78.20 *Erechtites* Raf. (2)78.2 *Acmella* Rich. ex Pers. (2)78.21 *Galinsoga* Ruiz & Pav. (1)78.3 *Adenostemma* J.R. Forst. & G. Forst. (1)78.22 *Grangea* Adans. (1)78.4 *Ageratum* L. (1)78.23 *Gynura* Cass. (1)78.5 *Ainsliaea* DC. (1)78.24 *Microglossa* DC. (1)78.6 *Bidens* L. (1)78.25 *Mikania* Willd. (2)78.7 *Blumea* DC. (10)78.26 *Pluchea* Cass. (1)78.8 *Centipeda* Lour. (1)78.27 *Porophyllum* Adans. (1)78.9 *Chromolaena* DC. (1)78.28 *Pseudognaphalium* Kirp. (1)78.10 *Complaya* Strother (2)78.29 *Sigesbeckia* L. (1)78.11 *Conyza* Less. (2)78.30 *Sonchus* L. (1)78.12 *Crassocephalum* Moench (1)78.31 *Sphaeranthus* L. (1)78.13 *Dichrocephala* L'Hér. ex DC. (1)78.32 *Spilanthes* Jacq. (1)78.14 *Eclipta* L. (1)78.33 *Struchium* P. Browne (1)78.15 *Elephantopus* L. (3)78.34 *Synedrella* Gaertn. (1)78.16 *Eleutheranthera* Poit. ex Bosc (1)78.35 *Tridax* L. (1)78.17 *Emilia* (Cass.) Cass. (1)78.36 *Vernonia* Schreb. (7)78.18 *Enydra* Lour. (1)78.37 *Wollastonia* DC. ex Decne. (1)78.19 *Epaltes* Cass. (1)78.38 *Youngia* Cass. (1)**79. CONNARACEAE [5, 23]**79.1 *Agelaea* Sol. ex Planch. (2)79.4 *Ellipanthus* Hook.f. (1)79.2 *Cnestis* Juss. (1)79.5 *Rourea* Aubl. (9)79.3 *Connarus* L. (10)**80. CONVULVULACEAE [16, 67]**80.1 *Aniseia* Choisy (1)80.9 *Jacquemontia* Choisy (1)80.2 *Argyreia* Lour. (13)80.10 *Lepistemon* Blume (1)80.3 *Bonamia* Thouars (1)80.11 *Merremia* Dennst. ex Endl. (6)80.4 *Cuscuta* L. (1)80.12 *Neuropeltis* Wall. (2)80.5 *Erycibe* Roxb. (18)80.13 *Operculina* Silva Manso (2)80.6 *Evolvulus* L. (1)80.14 *Porana* Burm.f. (1)80.7 *Hewittia* Wight & Arn. (1)80.15 *Stictocardia* Hallier f. (1)80.8 *Ipomoea* L. (16)80.16 *Xenostegia* D.F. Austin & Staples (1)**81. CORNACEAE [2, 4]**81.1 *Mastixia* Blume (3)81.2 *Nyssa* Gronov. ex L. (1)**82. CRASSULACEAE [1, 1]**82.1 *Kalanchoe* Adans. (1)

**83. CRUCIFERAE [3, 4]**83.1 *Brassica* L. (1)83.3 *Rorippa* Scop. (1)83.2 *Cardamine* L. (2)**84. CRYPTERONIACEAE [2, 3]**84.1 *Axinandra* Thwaites (1)84.2 *Crypteronia* Blume (2)**85. CTENOLOPHONACEAE [1, 1]**85.1 *Ctenolophon* Oliv. (1)**86. CUCURBITACEAE [10, 19]**86.1 *Alsomitra* (Blume) M. Roem. (2)86.6 *Neoalsomitra* Hutch. (1)86.2 *Gymnopetalum* Arn. (2)86.7 *Solena* Lour. (1)86.3 *Gynostemma* Blume (1)86.8 *Trichosanthes* L. (4)86.4 *Hodgsonia* Hook.f. & Thomson (1)86.9 *Zanonia* Blume (1)86.5 *Momordica* L. (4)86.10 *Zehneria* Endl. (2)**87. CUNONIACEAE [1, 1]**87.1 *Weinmannia* L. (1)**88. DAPHNIPHYLLACEAE [1, 2]**88.1 *Daphniphyllum* Blume (2)**89. DATISCAEAE [1, 1]**89.1 *Tetrameles* R.Br. (1)**90. DICHAPETALACEAE [1, 8]**90.1 *Dichapetalum* Thouars (8)**91. DILLENIAEAE [3, 20]**91.1 *Acrotrema* Jack (1)91.3 *Tetracera* L. (9)91.2 *Dillenia* L. (10)**92. DIPTEROCARPACEAE [9, 156]**92.1 *Anisoptera* Korth. (6)92.6 *Neobalanocarpus* P.S. Ashton (1)92.2 *Cotylelobium* Pierre (2)92.7 *Parashorea* Kurz (3)92.3 *Dipterocarpus* C.F. Gaertn. (30)92.8 *Shorea* Roxb. ex C.F. Gaertn. (59)92.4 *Dryobalanops* C.F. Gaertn. (2)92.9 *Vatica* L. (21)92.5 *Hopea* Roxb. (32)**93. DROSERACEAE [1, 3]**93.1 *Drosera* L. (3)**94. EBENACEAE [1, 63]**94.1 *Diospyros* L. (63)**95. ELAEAGNACEAE [1, 1]**95.1 *Elaeagnus* L. (1)



**96. ELAEOCARPACEAE [2, 32]**96.1 *Elaeocarpus* L. (29)96.2 *Sloanea* L. (3)**97. EPACRIDACEAE [1, 1]**97.1 *Styphelia* Sm. (1)**98. ERICACEAE [8, 39]**98.1 *Agapetes* D. Don *ex* G. Don (1)98.5 *Lyonia* Nutt. (1)98.2 *Cheilothea* Hook.f. (1)98.6 *Pernettyopsis* King & Gamble (1)98.3 *Diplycosia* Blume (4)98.7 *Rhododendron* L. (15)98.4 *Gaultheria* Kalm *ex* L. (3)98.8 *Vaccinium* L. (13)**99. ERYTHROXYLACEAE [1, 2]**99.1 *Erythroxylum* P.Browne (2)**100. ESCALLONIACEAE [2, 17]**100.1 *Itea* L. (1)100.2 *Polyosma* Blume (16)**101. EUPHORBIACEAE [70, 368]**101.1 *Acalypha* L. (4)101.32 *Epiprinus* Griff. (1)101.2 *Actephila* Blume (2)101.33 *Erismanthus* Wall. *ex* Müll.Arg. (1)101.3 *Agrostistachys* Dalzell (2)101.34 *Euphorbia* L. (7)101.4 *Alchornea* Sw. (5)101.35 *Excoecaria* L. (3)101.5 *Antidesma* L. (23)101.36 *Flueggea* Willd. (1)101.6 *Aporusa* Blume (24)101.37 *Glochidion* J.R. Forst. & G. Forst. (24)101.7 *Ashtonia* Airy Shaw (1)101.38 *Hevea* Aubl. (1)101.8 *Austrobuxus* Miq. (1)101.39 *Homalanthus* A. Juss. (1)101.9 *Baccaurea* Lour. (21)101.40 *Homonoia* Lour. (1)101.10 *Baliospermum* Blume (1)101.41 *Hymenocardia* Wall. *ex* Lindl. (1)101.11 *Bischofia* Blume (1)101.42 *Koilolepas* Hassk. (3)101.12 *Blachia* Baill. (1)101.43 *Lasiococca* Hook.f. (1)101.13 *Blumeodendron* (Müll.Arg.) Kurz (5)101.44 *Leptopus* Decne. (1)101.14 *Botryophora* Hook.f. (1)101.45 *Macaranga* Thouars (27)101.15 *Breynia* J.R. Forst. & G. Forst. (5)101.46 *Mallotus* Lour. (28)101.16 *Bridelia* Willd. (8)101.47 *Manihot* Mill. (2)101.17 *Cephalomappa* Baill. (3)101.48 *Margaritaria* L.f. (1)101.18 *Chaetocarpus* Thwaites (1)101.49 *Megistostigma* Hook.f. (2)101.19 *Cheilosa* Blume (1)101.50 *Melanolepis* Rchb.f. & Zoll. (1)101.20 *Chondrostylis* Boerl. (1)101.51 *Micrococca* Benth. (3)101.21 *Cladognos* Zipp. *ex* Spanoghe (1)101.52 *Neoscortechinia* Pax (4)101.22 *Claoxylon* A.Juss. (4)101.53 *Omphalea* L. (2)101.23 *Cleidion* Blume (1)101.54 *Paracroton* Miq. (1)101.24 *Cleistanthus* Hook.f. *ex* Planch. (30)101.55 *Phyllanthus* L. (20)101.25 *Cnesmone* Blume (3)101.56 *Pimelodendron* Hassk. (2)101.26 *Croton* L. (13)101.57 *Pterococcus* Hassk. (1)101.27 *Dicoelia* Benth. (1)101.58 *Ptychopyxis* Miq. (5)101.28 *Dimorphocalyx* Thwaites (4)101.59 *Richeriella* Pax & K. Hoffm. (1)101.29 *Drypetes* Vahl (15)101.60 *Ricinus* L. (1)101.30 *Elateriospermum* Blume (1)101.61 *Sapium* P. Browne (4)101.31 *Endospermum* Benth. (1)101.62 *Sauropus* Blume (8)

- 101.63 *Sebastiania* Spreng. (2)  
 101.64 *Spathiostemon* Blume (1)  
 101.65 *Sumbaviopsis* J.J.Sm. (1)  
 101.66 *Suregada* Roxb. ex Rottler (2)  
 101.67 *Trewia* L. (1)  
 101.68 *Trigonopleura* Hook.f. (1)  
 101.69 *Trigonostemon* Blume (15)  
 101.70 *Wetria* Baill. (1)

### 102. FAGACEAE [4, 65]

- 102.1 *Castanopsis* (D.Don) Spach (18)  
 102.2 *Lithocarpus* Blume (38)  
 102.3 *Quercus* L. (8)  
 102.4 *Trigonobalanus* Forman (1)

### 103. FLACOURTIACEAE [11, 49]

- 103.1 *Casearia* Jacq. (12)  
 103.2 *Erythrospermum* Lam. (1)  
 103.3 *Flacourtia* Comm. ex L'Hér. (1)  
 103.4 *Hemiscolopia* Slooten (1)  
 103.5 *Homalium* Jacq. (9)  
 103.6 *Hydnocarpus* Gaertn. (12)  
 103.7 *Osmelia* Thwaites (2)  
 103.8 *Pangium* Reinw. (1)  
 103.9 *Ryparosa* Blume (6)  
 103.10 *Scaphocalyx* Ridl. (1)  
 103.11 *Scolopia* Schreb. (3)

### 104. GENTIANACEAE [5, 7]

- 104.1 *Canscora* Lam. (3)  
 104.2 *Crawfurdia* Wall. (1)  
 104.3 *Exacum* L. (1)  
 104.4 *Gentiana* L. (1)  
 104.5 *Microrhium* C.B. Clarke (1)

### 105. GESNERIACEAE [20, 189]

- 105.1 *Aeschynanthus* Jack (17)  
 105.2 *Agalmyla* Blume (1)  
 105.3 *Boea* Comm. ex Lam. (1)  
 105.4 *Boeica* T. Anderson ex C.B. Clarke (2)  
 105.5 *Chirita* Buch.-Ham. ex D. Don (8)  
 105.6 *Cyrtandra* J.R. Forst. & G. Forst. (12)  
 105.7 *Didissandra* C.B. Clarke (16)  
 105.8 *Didymocarpus* Wall. (89)  
 105.9 *Epithema* Blume (2)  
 105.10 *Loxocarpus* R.Br. (8)  
 105.11 *Loxonia* Jack (1)  
 105.12 *Micraeschynanthus* Ridl. (1)  
 105.13 *Monophyllaea* R.Br. (4)  
 105.14 *Orchadocarpa* Ridl. (1)  
 105.15 *Ornithoboea* Parish ex C.B. Clarke (1)  
 105.16 *Paraboea* (C.B. Clarke) Ridl. (20)  
 105.17 *Rhynchoglossum* Blume (1)  
 105.18 *Rhynchotechum* Blume (1)  
 105.19 *Stauranthera* Benth. (2)  
 105.20 *Trisepalum* C.B. Clarke (1)

### 106. GOODENIACEAE [1, 1]

- 106.1 *Scaevola* L. (1)

### 107. GUTTIFERAE [7, 120]

- 107.1 *Calophyllum* L. (42)  
 107.2 *Cratoxylum* Blume (6)  
 107.3 *Garcinia* L. (46)  
 107.4 *Hypericum* L. (1)  
 107.5 *Mammea* L. (4)  
 107.6 *Mesua* L. (20)  
 107.7 *Ploiarium* Korth. (1)

### 108. HALORAGACEAE [2, 3]

- 108.1 *Gonocarpus* Thunb. (1)  
 108.2 *Myriophyllum* L. (2)

### 109. HAMAMELIDACEAE [6, 6]

- 109.1 *Altingia* Noronha (1)  
 109.2 *Distyliopsis* P.K. Endress (1)  
 109.3 *Distylium* Siebold & Zucc. (1)  
 109.4 *Exbucklandia* R.W.Br. (1)  
 109.5 *Maingaya* Oliv. (1)  
 109.6 *Rhodoleia* Champ. ex Hook. (1)



## 120. LECYTHIDACEAE [4, 20]

- 120.1 *Abdulmajidia* Whitmore (2)                      120.3 *Careya* Roxb. (1)  
 120.2 *Barringtonia* J.R. Forst. & G. Forst. (15)                      120.4 *Planchonia* Blume (2)

## 121. LEEACEAE [1, 8]

- 121.1 *Leea* L. (8)

## 122. LEGUMINOSAE [81, 298]

- 122.1 *Abrus* Adans. (2)                      122.42 *Koompassia* Maingay (2)  
 122.2 *Acacia* Mill. (6)                      122.43 *Kunstleria* Prain (4)  
 122.3 *Adenanthera* L. (3)                      122.44 *Leucaena* Benth. (1)  
 122.4 *Aeschynomene* L. (3)                      122.45 *Leucostegane* Prain (1)  
 122.5 *Aganope* Miq. (2)                      122.46 *Macroptilium* (Benth.) Urb. (1)  
 122.6 *Albizia* Durazz. (6)                      122.47 *Maniltoa* Scheff. (1)  
 122.7 *Alysicarpus* Desv. (1)                      122.48 *Millettia* Wight & Arn. (8)  
 122.8 *Archidendron* F. Muell. (9)                      122.49 *Mimosa* L. (5)  
 122.9 *Bauhinia* L. (26)                      122.50 *Mucuna* Adans. (5)  
 122.10 *Burkilliodendron* Sastry (1)                      122.51 *Neptunia* Lour. (2)  
 122.11 *Caesalpinia* L. (9)                      122.52 *Ormocarpum* P. Beauv. (1)  
 122.12 *Cajanus* DC. (4)                      122.53 *Ormosia* Jacks. (9)  
 122.13 *Callerya* Endl. (3)                      122.54 *Paraserianthes* I.C. Nielsen (1)  
 122.14 *Calopogonium* Desv. (1)                      122.55 *Parkia* R.Br. (4)  
 122.15 *Canavalia* DC. (2)                      122.56 *Peltophorum* (Vogel) Benth. (2)  
 122.16 *Cassia* L. (1)                      122.57 *Pericopsis* Thwaites (1)  
 122.17 *Centrosema* (DC.) Benth. (2)                      122.58 *Phylacium* Benn. (1)  
 122.18 *Chamaecrista* Moench (2)                      122.59 *Phyllodium* Desv. (1)  
 122.19 *Christia* Moench (1)                      122.60 *Pongamia* Vent. (1)  
 122.20 *Clitorea* L. (2)                      122.61 *Pseudarthria* Wight & Arn. (1)  
 122.21 *Codariocalyx* Hassk. (1)                      122.62 *Pterocarpus* Jacq. (1)  
 122.22 *Crotalaria* L. (19)                      122.63 *Pterolobium* R.Br. ex Wight & Arn. (2)  
 122.23 *Crudia* Schreb. (11)                      122.64 *Pueraria* DC. (1)  
 122.24 *Cynometra* L. (3)                      122.65 *Rothia* Pers. (1)  
 122.25 *Dalbergia* L.f. (11)                      122.66 *Saraca* L. (3)  
 122.26 *Dendrolobium* (Wight & Arn.) Benth. (2)                      122.67 *Senna* Mill. (8)  
 122.27 *Derris* Lour. (9)                      122.68 *Serianthes* Benth. (1)  
 122.28 *Desmanthus* Willd. (1)                      122.69 *Sesbania* Scop. (2)  
 122.29 *Desmodium* Desv. (14)                      122.70 *Sindora* Miq. (5)  
 122.30 *Dialium* L. (4)                      122.71 *Smithia* Aiton (1)  
 122.31 *Dioclea* Kunth (2)                      122.72 *Sophora* L. (1)  
 122.32 *Dunbaria* Wight & Arn. (1)                      122.73 *Spatholobus* Hassk. (10)  
 122.33 *Entada* Adans. (2)                      122.74 *Stylosanthes* Sw. (2)  
 122.34 *Eriosema* (DC.) Rchb. (1)                      122.75 *Sympetalandra* Stapf (1)  
 122.35 *Erythrina* L. (3)                      122.76 *Tadehagi* H. Ohashi (1)  
 122.36 *Flemingia* Roxb. ex W.T. Aiton (2)                      122.77 *Tephrosia* Pers. (3)  
 122.37 *Fordia* Hemsl. (10)                      122.78 *Teramnus* P. Browne (1)  
 122.38 *Geissaspis* Wight & Arn. (1)                      122.79 *Urania* Desv. (3)  
 122.39 *Indigofera* L. (6)                      122.80 *Vigna* Savi (6)  
 122.40 *Inocarpus* J.R. Forst. & G. Forst. (1)                      122.81 *Zornia* J.F. Gmel. (1)  
 122.41 *Intsia* Thouars (2)

**123. LENTIBULARIACEAE [1, 13]**123.1 *Utricularia* L. (13)**124. LINACEAE [2, 2]**124. *Hugonia* L. (1)124.2 *Indorouchera* Hallier f. (1)**125. LOGANIACEAE [5, 32]**125.1 *Fagraea* Thunb. (17)125.4 *Norrisia* Gardner (2)125.2 *Mitrasacme* Labill. (2)125.5 *Strychnos* L. (10)125.3 *Mitreola* L. (1)**126. LOPHOPYXIDACEAE [1, 1]**126.1 *Lophopyxis* Hook.f. (1)**127. LORANTHACEAE [13, 34]**127.1 *Amyema* Tiegh. (1)127.8 *Lepeostegeres* Blume (1)127.2 *Amylothea* Tiegh. (1)127.9 *Lepidaria* Tiegh. (1)127.3 *Barathranthus* (Korth.) Miq. (2)127.10 *Loxanthera* (Blume) Blume (1)127.4 *Dendrophthoe* Mart. (4)127.11 *Macrosolen* (Blume) Rchb. (10)127.5 *Elytranthe* (Blume) Blume (2)127.12 *Scurrula* L. (2)127.6 *Helixanthera* Lour. (7)127.13 *Taxillus* Tiegh. (1)127.7 *Kingella* Tiegh. (1)**128. LYTHRACEAE [7, 17]**128.1 *Ammannia* L. (1)128.5 *Pemphis* J.R. Forst. & G. Forst. (1)128.2 *Cuphea* P. Browne (1)128.6 *Rotala* L. (3)128.3 *Duabanga* Buch.-Ham. (1)128.7 *Sonneratia* L.f. (4)128.4 *Lagerstroemia* L. (6)**129. MAGNOLIACEAE [4, 13]**129.1 *Magnolia* L. (7)129.3 *Michelia* L. (4)129.2 *Manglietia* Blume (1)129.4 *Pachylarnax* Dandy (1)**130. MALPIGHIACEAE [4, 7]**130.1 *Aspidopterys* A.Juss. (2)130.3 *Hiptage* Gaertn. (3)130.2 *Brachylophon* Oliv. (1)130.4 *Tristellateia* Thouars (1)**131. MALVACEAE [8, 15]**131.1 *Abelmoschus* Medik. (1)131.5 *Sida* L. (5)131.2 *Abutilon* Mill. (1)131.6 *Thespesia* Sol. ex Corrêa (1)131.3 *Hibiscus* L. (4)131.7 *Urena* L. (1)131.4 *Pavonia* Cav. (1)131.8 *Wissadula* Medik. (1)**132. MELASTOMATACEAE [22, 172]**132.1 *Anerincleistus* Korth. (10)132.6 *Diplectria* (Blume) Rchb. (5)132.2 *Astronia* Blume (2)132.7 *Dissochaeta* Blume (14)132.3 *Blastus* Lour. (1)132.8 *Lijndenia* Zoll. & Moritzi (1)132.4 *Clidemia* D. Don (1)132.9 *Macrolenes* Naudin (7)132.5 *Creochiton* Blume (1)132.10 *Medinilla* Gaudich. (13)

- 132.11 *Melastoma* L. (5)  
 132.12 *Memecylon* L. (26)  
 132.13 *Ochthocharis* Blume (5)  
 132.14 *Osbeckia* L. (3)  
 132.15 *Oxyspora* DC. (13)  
 132.16 *Pachycentria* Blume (3)

- 132.17 *Phyllagathis* Blume (10)  
 132.18 *Plethiandra* Hook.f. (1)  
 132.19 *Pogonantha* Blume (1)  
 132.20 *Pternandra* Jack (4)  
 132.21 *Sarcopyramis* Wall. (1)  
 132.22 *Sonerila* Roxb. (45)

### 133. MELIACEAE [17, 99]

- 133.1 *Aglaiia* Lour. (48)  
 133.2 *Aphanomixis* Blume (2)  
 133.3 *Azadirachta* A. Juss. (1)  
 133.4 *Chisocheton* Blume (11)  
 133.5 *Chukrasia* A. Juss. (1)  
 133.6 *Cipadessa* Blume (1)  
 133.7 *Dysoxylum* Blume (17)  
 133.8 *Heynea* Roxb. ex Sims (1)  
 133.9 *Lansium* Corrêa (1)

- 133.10 *Munronia* Wight (1)  
 133.11 *Pseudoclausena* T.P. Clark (1)  
 133.12 *Reinwardti dendron* Koord. (2)  
 133.13 *Sandoricum* Cav. (2)  
 133.14 *Toona* (Endl.) M. Roem. (4)  
 133.15 *Turraea* L. (1)  
 133.16 *Walsura* Roxb. (2)  
 133.17 *Xylocarpus* J. König (3)

### 134. MELIOSMACEAE [1, 6]

- 134.1 *Meliosma* Blume (6)

### 135. MENISPERMACEAE [15, 24]

- 135.1 *Albertisia* Becc. (2)  
 135.2 *Arcangelisia* Becc. (1)  
 135.3 *Cocculus* DC. (1)  
 135.4 *Coscinium* Colebr. (2)  
 135.5 *Cyclea* Arn. ex Wight (2)  
 135.6 *Diploclisia* Miers (1)  
 135.7 *Fibraurea* Lour. (1)  
 135.8 *Hypserpa* Miers (1)

- 135.9 *Limacia* Lour. (2)  
 135.10 *Pericampylus* Miers (1)  
 135.11 *Pycnarrhena* Miers ex Hook.f. & Thomson (1)  
 135.12 *Stephania* Lour. (4)  
 135.13 *Tiliacora* Colebr. (1)  
 135.14 *Tinomiscium* Miers ex Hook.f. & Thomson (1)  
 135.15 *Tinospora* Miers (3)

### 136. MENYANTHACEAE [1, 3]

- 136.1 *Nymphoides* Ség. (3)

### 137. MOLLUGINACEAE [2, 2]

- 137.1 *Glinus* L. (1) 137.2 *Mollugo* L. (1)

### 138. MONIMIACEAE [2, 2]

- 138.1 *Kibara* Endl. (1) 138.2 *Matthaea* Blume (1)

### 139. MORACEAE [10, 138]

- 139.1 *Antiaris* Lesch. (1) 139.6 *Maclura* Nutt. (2)  
 139.2 *Artocarpus* J.R. Forst. & G. Forst. (18) 139.7 *Parartocarpus* Baill. (2)  
 139.3 *Bleekrodea* Blume (1) 139.8 *Prainea* King ex Hook.f. (2)  
 139.4 *Ficus* L. (102) 139.9 *Streblus* Lour. (8)  
 139.5 *Hullettia* King ex Hook.f. (1) 139.10 *Trophis* P. Browne (1)

### 140. MYRICACEAE [1, 1]

- 140.1 *Myrica* L. (1)



**151. ONAGRACEAE [1, 6]**151.1 *Ludwigia* L. (6)**152. OPILIAEAE [4, 4]**152.1 *Cansjera* Juss. (1)152.3 *Lepionurus* Blume (1)152.2 *Champereia* Griff. (1)152.4 *Melientha* Pierre (1)**153. OXALIDACEAE [5, 12]**153.1 *Averrhoa* L. (1)153.4 *Oxalis* L. (3)153.2 *Biophytum* DC. (3)153.5 *Sarcotheca* Blume (4)153.3 *Dapania* Korth. (1)**154. PANDACEAE [2, 4]**154.1 *Galearia* Zoll. & Moritz (3)154.2 *Microdesmis* Hook.f. ex Hook. (1)**155. PASSIFLORACEAE [3, 8]**155.1 *Adenia* Forssk. (3)155.3 *Passiflora* L. (4)155.2 *Paropsia* Noronha ex Thouars (1)**156. PEDALIACEAE [1, 2]**156.1 *Sesamum* L. (2)**157. PENTAPHRAGMATAEAE [1, 5]**157.1 *Pentaphragma* Wall. ex G. Don (5)**158. PENTAPHYLACACEAE [1, 1]**158.1 *Pentaphylax* Gardner & Champ. (1)**159. PHYTOLACCACEAE [2, 2]**159.1 *Phytolacca* L. (1)159.2 *Rivina* L. (1)**160. PIPERACEAE [3, 88]**160.1 *Peperomia* Ruiz & Pav. (9)160.3 *Zippelia* Blume (1)160.2 *Piper* L. (78)**161. PITTOSPORACEAE [1, 2]**161.1 *Pittosporum* Banks & Sol. (2)**162. PLANTAGINACEAE [1, 1]**162.1 *Plantago* L. (1)**163. PLUMBAGINACEAE [1, 1]**163.1 *Plumbago* L. (1)**164. PODOSTEMACEAE [1, 1]**164.1 *Malaccotristicha* G. Cusset & C. Cusset (1)



**165. POLYGALACEAE [5, 37]**

- 165.1 *Epirixanthes* Blume (1) 165.4 *Securidaca* L. (1)  
 165.2 *Polygala* L. (8) 165.5 *Xanthophyllum* Roxb. (25)  
 165.3 *Salomonina* Lour. (2)

**166. POLYGONACEAE [3, 14]**

- 166.1 *Aconogonum* (Meisn.) Rchb. (1) 166.3 *Rumex* L. (2)  
 166.2 *Persicaria* (L.) Mill. (11)

**167. PORTULACACEAE [2, 4]**

- 167.1 *Portulaca* L. (3) 167.2 *Talinum* Adans. (1)

**168. PRIMULACEAE [1, 1]**

- 168.1 *Lysimachia* L. (1)

**169. PROTEACEAE [2, 12]**

- 169.1 *Helicia* Lour. (7) 169.2 *Heliciopsis* Sleumer (5)

**170. RAFFLESIACEAE [2, 4]**

- 170.1 *Rafflesia* R.Br. (2) 170.2 *Rhizanthus* Dumort. (2)

**171. RANUNCULACEAE [3, 5]**

- 171.1 *Anemone* L. (1) 171.3 *Naravelia* Adans. (2)  
 171.2 *Clematis* L. (2)

**172. RHAMNACEAE [7, 25]**

- 172.1 *Colubrina* Rich. ex Brongn. (2) 172.5 *Smythea* Seem. (4)  
 172.2 *Gouania* Jacq. (2) 172.6 *Ventilago* Gaertn. (5)  
 172.3 *Rhamnus* L. (2) 172.7 *Ziziphus* Mill. (9)  
 172.4 *Sageretia* Brongn. (1)

**173. RHIZOPHORACEAE [7, 17]**

- 173.1 *Bruguiera* Sav. (5) 173.5 *Kandelia* (DC.) Wight & Arn. (1)  
 173.2 *Carallia* Roxb. (3) 173.6 *Pellacalyx* Korth. (2)  
 173.3 *Ceriops* Arn. (2) 173.7 *Rhizophora* L. (3)  
 173.4 *Gynotroches* Blume (1)

**174. ROSACEAE [6, 19]**

- 174.1 *Eriobotrya* Lindl. (1) 174.4 *Prunus* L. (8)  
 174.2 *Photinia* Lindl. (1) 174.5 *Rubus* L. (6)  
 174.3 *Potentilla* L. (1) 174.6 *Sorbus* L. (1)

**175. RUBIACEAE [79, 562]**

- 175.1 *Acranthera* Arn. ex Meisn. (2) 175.7 *Brachytome* Hook.f. (1)  
 175.2 *Aidia* Lour. (7) 175.8 *Canthium* Lam. (16)  
 175.3 *Aidiopsis* Tirveng. (1) 175.9 *Catunaregam* Wolf (2)  
 175.4 *Aleisanthia* Ridl. (2) 175.10 *Ceriscoides* (Hook.f.) Tirveng. (1)  
 175.5 *Antirhea* Comm. ex Juss. (1) 175.11 *Chassalia* Comm. ex Poir. (6)  
 175.6 *Argostemma* Wall. (45) 175.12 *Coelospermum* Blume (1)

- 175.13 *Coptophyllum* Korth. (2)  
 175.14 *Coptosapelta* Korth. (3)  
 175.15 *Dentella* J.R. Forst. & G. Forst. (1)  
 175.16 *Diodia* L. (2)  
 175.17 *Diplospora* DC. (8)  
 175.18 *Fagerlindia* Tirveng. (1)  
 175.19 *Gaertnera* Lam. (6)  
 175.20 *Gardenia* Ellis (5)  
 175.21 *Gardeniopsis* Miq. (1)  
 175.22 *Gentingia* J.T. Johanss. & K.M. Wong (1)  
 175.23 *Geophila* D. Don (5)  
 175.24 *Greenea* Wight & Arn. (1)  
 175.25 *Guettarda* L. (1)  
 175.26 *Gynochthodes* Blume (3)  
 175.27 *Haldina* Ridsdale (1)  
 175.28 *Hedyotis* L. (38)  
 175.29 *Hydnophytum* Jack (1)  
 175.30 *Hymenodictyon* Wall. (1)  
 175.31 *Hypobathrum* Blume (15)  
 175.32 *Ixora* L. (14)  
 175.33 *Jackiopsis* Ridsdale (1)  
 175.34 *Kailarsenia* Tirveng. (2)  
 175.35 *Keenania* Hook.f. (1)  
 175.36 *Klossia* Ridl. (1)  
 175.37 *Knoxia* L. (1)  
 175.38 *Kochummenia* K.M. Wong (3)  
 175.39 *Lasianthus* Jack (54)  
 175.40 *Lecananthus* Jack (1)  
 175.41 *Lucinaea* DC. (4)  
 175.42 *Metadina* Bakh.f. (1)  
 175.43 *Meyna* Roxb. ex Link (2)  
 175.44 *Mitracarpus* Zucc. (1)  
 175.45 *Mitragyna* Korth. (2)  
 175.46 *Morinda* L. (10)  
 175.47 *Mussaenda* L. (11)  
 175.48 *Mussaendopsis* Baill. (1)  
 175.49 *Mycetia* Reinw. (4)  
 175.50 *Myrmecodia* Jack (1)  
 175.51 *Nauclea* L. (2)  
 175.52 *Neolamarckia* Bosser (1)  
 175.53 *Neonauclea* Merr. (6)  
 175.54 *Nertera* Banks & Sol. ex Gaertn. (1)  
 175.55 *Ochreinauclea* Ridsdale & Bakh.f. (1)  
 175.56 *Ophiorrhiza* L. (21)  
 175.57 *Oxyceros* Lour. (7)  
 175.58 *Paederia* L. (2)  
 175.59 *Pavetta* L. (14)  
 175.60 *Perakanthus* Robyns (1)  
 175.61 *Pertusadina* Ridsdale (2)  
 175.62 *Pleiocarpidia* K. Schum. (1)  
 175.63 *Porterandia* Ridl. (2)  
 175.64 *Prismatomeris* Thwaites (4)  
 175.65 *Psychotria* L. (64)  
 175.66 *Psydrax* Gaertn. (14)  
 175.67 *Rennellia* Korth. (4)  
 175.68 *Rothmannia* Thunb. (4)  
 175.69 *Saprosma* Blume (8)  
 175.70 *Scyphiphora* C.F. Gaertn. (1)  
 175.71 *Spermacoce* L. (7)  
 175.72 *Streblosa* Korth. (2)  
 175.73 *Tarenna* Gaertn. (39)  
 175.74 *Timonius* DC. (14)  
 175.75 *Uncaria* Schreb. (14)  
 175.76 *Urophyllum* Wall. (26)  
 175.77 *Wendlandia* Bartl. ex DC. (3)  
 175.78 *Xanthophytum* Reinw. ex Blume (2)  
 175.79 *Zuccarinia* Blume (1)

### 176. RUTACEAE [18, 54]

- 176.1 *Acronychia* J.R. Forst. & G. Forst. (1)  
 176.2 *Atalantia* Corrêa (2)  
 176.3 *Burkillanthus* Swingle (1)  
 176.4 *Citrus* L. (4)  
 176.5 *Clausena* Burm.f. (2)  
 176.6 *Fortunella* Swingle (1)  
 176.7 *Glycosmis* Corrêa (13)  
 176.8 *Luvunga* Buch.-Ham. ex Wight & Arn. (2)  
 176.9 *Maclurodendron* T.G. Hartley (2)  
 176.10 *Melicope* J.R. Forst. & G. Forst. (10)  
 176.11 *Merope* M. Roem. (1)  
 176.12 *Merrillia* Swingle (1)  
 176.13 *Micromelum* Blume (2)  
 176.14 *Murraya* L. (1)  
 176.15 *Paramignya* Wight (3)  
 176.16 *Tetractomia* Hook.f. (2)  
 176.17 *Tetradium* Lour. (2)  
 176.18 *Zanthoxylum* L. (4)

### 177. SABIACEAE [1, 3]

- 177.1 *Sabia* Colebr. (3)

### 178. SALICACEAE [1, 1]

- 178.1 *Salix* L. (1)

**179. SANTALACEAE [5, 9]**

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| 179.1 <i>Dendromyza</i> Danser (1) | 179.4 <i>Phacellaria</i> Benth. (1) |
| 179.2 <i>Dendrotrophe</i> Miq. (3) | 179.5 <i>Scleropyrum</i> Arn. (1)   |
| 179.3 <i>Dufreynoya</i> Chatin (3) |                                     |

**180. SAPINDACEAE [18, 46]**

- |                                    |   |
|------------------------------------|---|
| 180.1 <i>Allophylus</i> L. (1)     | 180.10 <i>Harpullia</i> Roxb. (2)                 |
| 180.2 <i>Amesiodendron</i> Hu (1)  | 180.11 <i>Lepisanthes</i> Blume (7)               |
| 180.3 <i>Arytera</i> Blume (1)     | 180.12 <i>Litchi</i> Sonn. (1)                    |
| 180.4 <i>Cardiospermum</i> L. (1)  | 180.13 <i>Mischocarpus</i> Blume (2)              |
| 180.5 <i>Dimocarpus</i> Lour. (2)  | 180.14 <i>Nephelium</i> L. (12)                   |
| 180.6 <i>Dodonaea</i> Mill. (1)    | 180.15 <i>Paranephelium</i> Miq. (3)              |
| 180.7 <i>Ganophyllum</i> Blume (1) | 180.16 <i>Pometia</i> J.R. Forst. & G. Forst. (2) |
| 180.8 <i>Glennia</i> Hook.f. (1)   | 180.17 <i>Trigonachras</i> Radlk. (2)             |
| 180.9 <i>Guioa</i> Cav. (4)        | 180.18 <i>Xerospermum</i> Blume (2)               |

**181. SAPOTACEAE [10, 75]**

- |  |                                       |
|--|---------------------------------------|
| 181.1 <i>Chrysophyllum</i> L. (1)                | 181.6 <i>Mimusops</i> L. (1)          |
| 181.2 <i>Diploknema</i> Pierre (1)               | 181.7 <i>Palaquium</i> Blume (22)     |
| 181.3 <i>Isonandra</i> Wight (1)                 | 181.8 <i>Payena</i> A.DC. (10)        |
| 181.4 <i>Madhuca</i> Buch-Ham. ex J.F.Gmel. (29) | 181.9 <i>Pouteria</i> Aubl. (7)       |
| 181.5 <i>Manilkara</i> Adans. (1)                | 181.10 <i>Sarcosperma</i> Hook.f. (2) |

**182. SCHISANDRACEAE [1, 2]**

- 182.1 *Kadsura* Juss. (2)

**183. SCROPHULARIACEAE [17, 55]**

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| 183.1 <i>Adenosma</i> R.Br. (5)       | 183.10 <i>Mazus</i> Lour. (1)        |
| 183.2 <i>Aeginetia</i> L. (1)         | 183.11 <i>Microcarpaea</i> R.Br. (1) |
| 183.3 <i>Artanema</i> D. Don (1)      | 183.12 <i>Picria</i> Lour. (1)       |
| 183.4 <i>Bacopa</i> Aubl. (2)         | 183.13 <i>Scoparia</i> L. (1)        |
| 183.5 <i>Centranthera</i> R.Br. (2)   | 183.14 <i>Stemodia</i> L. (1)        |
| 183.6 <i>Christisonia</i> Gardner (1) | 183.15 <i>Striga</i> Lour. (1)       |
| 183.7 <i>Cyrtandromoea</i> Zoll. (3)  | 183.16 <i>Torenia</i> L. (7)         |
| 183.8 <i>Limnophila</i> R.Br. (13)    | 183.17 <i>Wightia</i> Wall. (1)      |
| 183.9 <i>Lindernia</i> All. (13)      |                                      |

**184. SIMAROUBACEAE [6, 8]**

- |                                   |   |
|-----------------------------------|---|
| 184.1 <i>Ailanthus</i> Desf. (2)  | 184.4 <i>Harrisonia</i> R.Br. ex A. Juss. (1) |
| 184.2 <i>Bucea</i> J.F. Mill. (1) | 184.5 <i>Picrasma</i> Blume (1)               |
| 184.3 <i>Eurycoma</i> Jack (2)    | 184.6 <i>Quassia</i> L. (1)                   |

**185. SOLANACEAE [4, 16]**

- |  |                              |
|--|------------------------------|
| 185.1 <i>Browallia</i> L. (1)              | 185.3 <i>Physalis</i> L. (1) |
| 185.2 <i>Lycianthes</i> (Dunal) Hassl. (3) | 185.4 <i>Solanum</i> L. (11) |

**186. STAPHYLEACEAE [1, 2]**

- 186.1 *Turpinia* Vent. (2)

**187. STERCULIACEAE [16, 59]**

- |  |   |
|--|---|
| 187.1 <i>Abroma</i> Jacq. (1)                        | 187.6 <i>Heritiera</i> Aiton (9)          |
| 187.2 <i>Byttneria</i> Loefl. (6)                    | 187.7 <i>Kleinhovia</i> L. (1)            |
| 187.3 <i>Commersonia</i> J.R. Forst. & G. Forst. (1) | 187.8 <i>Leptonychia</i> Turcz. (2)       |
| 187.4 <i>Firmiana</i> Marsili (1)                    | 187.9 <i>Melochia</i> L. (2)              |
| 187.5 <i>Helicteres</i> L. (4)                       | 187.10 <i>Pentapetes</i> L. (1)           |
| 187.11 <i>Pterocymbium</i> R.Br. (2)                 | 187.14 <i>Scaphium</i> Schott & Endl. (4) |
| 187.12 <i>Pterospermum</i> Schreb. (6)               | 187.15 <i>Sterculia</i> L. (16)           |
| 187.13 <i>Pterygota</i> Schott & Endl. (1)           | 187.16 <i>Waltheria</i> L. (2)            |

**188. STYLIDIACEAE [1, 1]**

- 188.1 *Stylidium* Sw. ex Willd. (1)

**189. STYRACACEAE [1, 5]**

- 189.1 *Styrax* L. (5)

**190. SYMPLOCACEAE [1, 22]**

- 190.1 *Symplocos* Jacq. (22)

**191. TETRAMERISTACEAE [1, 1]**

- 191.1 *Tetramerista* Miq. (1)

**192. THEACEAE [7, 37]**

- |                                  |   |
|----------------------------------|---|
| 192.1 <i>Adinandra</i> Jack (10) | 192.5 <i>Pyrenaria</i> Blume (5)            |
| 192.2 <i>Anneslea</i> Wall. (1)  | 192.6 <i>Schima</i> Reinw. ex Blume (2)     |
| 192.3 <i>Eurya</i> Thunb. (3)    | 192.7 <i>Ternstroemia</i> Mutis ex L.f. (7) |
| 192.4 <i>Gordonia</i> Ellis (9)  |   |

**193. THYMELAEACEAE [7, 20]**

- |   |   |
|---|---|
| 193.1 <i>Aquilaria</i> Lam. (5)             | 193.5 <i>Linostoma</i> Wall. ex Endl. (1) |
| 193.2 <i>Daphne</i> L. (1)                  | 193.6 <i>Phaleria</i> Jack (1)            |
| 193.3 <i>Enkleia</i> Griff. (1)             | 193.7 <i>Wikstroemia</i> Endl. (4)        |
| 193.4 <i>Gonystylus</i> Teijsm. & Binn. (7) |   |

**194. TILIACEAE [12, 57]**

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| 194.1 <i>Berrya</i> Roxb. (1)       | 194.7 <i>Microcos</i> L. (10)         |
| 194.2 <i>Brownlowia</i> Roxb. (6)   | 194.8 <i>Muntingia</i> L. (1)         |
| 194.3 <i>Colona</i> Cav. (3)        | 194.9 <i>Pentace</i> Hassk. (16)      |
| 194.4 <i>Corchorus</i> L. (3)       | 194.10 <i>Schoutenia</i> Korth. (6)   |
| 194.5 <i>Diplodiscus</i> Turcz. (2) | 194.11 <i>Trichospermum</i> Blume (1) |
| 194.6 <i>Grewia</i> L. (3)          | 194.12 <i>Triumfetta</i> L. (5)       |

**195. TRIGONIACEAE [1, 1]**

- 195.1 *Trigonistrum* Miq. (1)

**196. TURNERACEAE [1, 2]**

- 196.1 *Turnera* L. (2)

**197. ULMACEAE [3, 10]**

- 197.1 *Celtis* L. (2) 197.3 *Trema* Lour. (4)  
 197.2 *Gironniera* Gaudich. (4)

**198. UMBELLIFERAE [5, 6]**

- 198.1 *Centella* L. (1) 198.4 *Oenanthe* L. (1)  
 198.2 *Eryngium* L. (1) 198.5 *Sanicula* L. (1)  
 198.3 *Hydrocotyle* L. (2)

**199. URTICACEAE [11, 30]**

- 199.1 *Boehmeria* Jacq. (5) 199.7 *Oreocnide* Miq. (1)  
 199.2 *Debregeasia* Gaudich. (2) 199.8 *Pilea* Lindl. (2)  
 199.3 *Dendrocnide* Miq. (2) 199.9 *Pipturus* Wedd. (1)  
 199.4 *Elatostema* J.R. Forst. & G. Forst. (10) 199.10 *Pouzolzia* Gaudich. (3)  
 199.5 *Laportea* Gaudich. (1) 199.11 *Procris* Comm. ex Juss. (2)  
 199.6 *Nothocnide* Blume ex Chew (1)

**200. VERBENACEAE [15, 77]**

- 200.1 *Callicarpa* L. (8) 200.9 *Phyla* Lour. (1)  
 200.2 *Clerodendrum* L. (16) 200.10 *Premna* L. (15)  
 200.3 *Congea* Roxb. (2) 200.11 *Sphenodesme* Jack (3)  
 200.4 *Glossocarya* Wall. ex Griff. (2) 200.12 *Stachytarpheta* Vahl (4)  
 200.5 *Gmelina* L. (2) 200.13 *Teijsmanniodendron* Koord. (6)  
 200.6 *Lantana* L. (2) 200.14 *Verbena* L. (1)  
 200.7 *Peronema* Jack (1) 200.15 *Vitex* L. (10)  
 200.8 *Petraeovitex* Oliv. (4)

**201. VIOLACEAE [2, 13]**

- 201.1 *Rinorea* Aubl. (9) 201.2 *Viola* L. (4)

**202. VISCACEAE [3, 6]**

- 202.1 *Korthalsella* Tiegh. (2) 202.3 *Viscum* L. (3)  
 202.2 *Notothixos* Oliv. (1)

**203. VITACEAE [8, 51]**

- 203.1 *Ampelocissus* Planch. (11) 203.5 *Nothocissus* (Miq.) Latiff (1)  
 203.2 *Ampelopsis* Michx. (1) 203.6 *Parthenocissus* Planch. (1)  
 203.3 *Cayratia* Juss. (5) 203.7 *Pterisanthes* Blume (12)  
 203.4 *Cissus* L. (8) 203.8 *Tetrastigma* (Miq.) Planch. (12)

## Angiosperms - Monocots

**204. ALISMATACEAE [2, 2]**

- 204.1 *Echinodorus* Rich. ex Engelm. (1) 204.2 *Sagittaria* L. (1)

**205. AMARYLLIDACEAE [2, 2]**

- 205.1 *Crinum* L. (1) 205.2 *Proiphys* Herb. (1)

**206. ANTHERICACEAE [1, 2]**206.1 *Chlorophytum* Ker Gawl. (2)**207. ARACEAE [23, 141]**207.1 *Aglaodorum* Schott (1)207.7 *Arisaema* Mart. (7)207.2 *Aglaonema* Schott (4)207.8 *Colocasia* Schott (2)207.3 *Alocasia* (Schott) G. Don (8)207.9 *Cryptocoryne* Fisch. ex Wydl. (10)207.4 *Amorphophallus* Blume ex Decne. (13)207.10 *Cyrtosperma* Griff. (1)207.5 *Amydrium* Schott (2)207.11 *Epipremnum* Schott (2)207.6 *Anadendrum* Schott (3)207.12 *Furtdoa* M. Hotta (1)207.13 *Hapaline* Schott (1)207.19 *Pothos* L. (12)207.14 *Homalomena* Schott (34)207.20 *Rhaphidophora* Hassk. (15)207.15 *Lasia* Lour. (1)207.21 *Schismatoglottis* Zoll. & Moritzi (7)207.16 *Piptospatha* N.E.Br. (3)207.22 *Scindapsus* Schott (7)207.17 *Pistia* L. (1)207.23 *Typhonium* Schott (5)207.18 *Podolasia* N.E.Br. (1)**208. ASPARAGACEAE [1, 1]**208.1 *Asparagus* L. (1)**209. BURMANNIACEAE [3, 16]**209.1 *Burmannia* L. (7)209.3 *Thismia* Griff. (8)209.2 *Gymnosiphon* Blume (1)**210. CANNACEAE [1, 1]**210.1 *Canna* L. (1)**211. COMMELINACEAE [11, 35]**211.1 *Amischotolype* Hassk. (7)211.7 *Murdannia* Royle (6)211.2 *Belosynapsis* Hassk. (1)211.8 *Pollia* Thunb. (4)211.3 *Commelina* L. (9)211.9 *Rhopalephora* Hassk. (1)211.4 *Cyanotis* D. Don (2)211.10 *Spatholirion* Ridl. (1)211.5 *Dictyospermum* Wight (2)211.11 *Tradescantia* L. (1)211.6 *Floscopa* Lour. (1)**212. CONVALLARIACEAE [5, 6]**212.1 *Disporum* Salisb. ex D. Don (1)212.4 *Tricalistra* Ridl. (1)212.2 *Ophiopogon* Ker Gawl. (1)212.5 *Tupistra* Ker Gawl. (2)212.3 *Peliosanthes* Andrews (1)**213. COSTACEAE [1, 3]**213.1 *Costus* L. (3)**214. CYMODOCEACEAE [3, 5]**214.1 *Cymodocea* K.D. Koenig (2)214.3 *Syringodium* Kützing (1)214.2 *Halodule* Endl. (2)

### 215. CYPERACEAE [29, 162]

- |   |  |
|---|--|
| 215.1 <i>Actinoschoenus</i> Benth. (1)                  | 215.16 <i>Machaerina</i> Vahl (2)              |
| 215.2 <i>Actinoscirpus</i> (Ohwi) R.W. Haines & Lye (1) | 215.17 <i>Mapania</i> Aubl. (16)               |
| 215.3 <i>Bulbostylis</i> Kunth (2)                      | 215.18 <i>Oreobolus</i> R.Br. (1)              |
| 215.4 <i>Carex</i> L. (12)                              | 215.19 <i>Paramapania</i> Uittien (1)          |
| 215.5 <i>Cyperus</i> L. (31)                            | 215.20 <i>Pycreus</i> P.Beauv. (4)             |
| 215.6 <i>Diplacrum</i> R.Br. (2)                        | 215.21 <i>Remirea</i> Aubl. (1)                |
| 215.7 <i>Eleocharis</i> R.Br. (8)                       | 215.22 <i>Rhynchospora</i> Vahl (7)            |
| 215.8 <i>Fimbristylis</i> Vahl (31)                     | 215.23 <i>Schoenoplectus</i> (Rchb.) Palla (4) |
| 215.9 <i>Fuirena</i> Rottb. (2)                         | 215.24 <i>Schoenus</i> L. (2)                  |
| 215.10 <i>Gahnia</i> J.R. Forst. & G. Forst. (3)        | 215.25 <i>Scirpodendron</i> Zipp. ex Kurz (1)  |
| 215.11 <i>Hypolytrum</i> Rich. ex Pers. (1)             | 215.26 <i>Scirpus</i> L. (1)                   |
| 215.12 <i>Kyllinga</i> Rottb. (4)                       | 215.27 <i>Scleria</i> P. J. Bergius (17)       |
| 215.13 <i>Lepidosperma</i> Labill. (1)                  | 215.28 <i>Tricostularia</i> Nees ex Lehm. (1)  |
| 215.14 <i>Lepironia</i> Rich. (1)                       | 215.29 <i>Websteria</i> S.H. Wright (1)        |
| 215.15 <i>Lipocarpa</i> R.Br. (3)                       |  |

### 216. DIOSCOREACEAE [2, 21]

- |                                |                                     |
|--------------------------------|-------------------------------------|
| 216.1 <i>Dioscorea</i> L. (20) | 216.2 <i>Stenomeris</i> Planch. (1) |
|--------------------------------|-------------------------------------|

### 217. DRACAENACEAE [1, 18]

- 217.1 *Dracaena* Vand. ex L. (18)

### 218. ERIOCAULACEAE [1, 9]

- 218.1 *Eriocaulon* L. (9)

### 219. FLAGELLARIACEAE [1, 1]

- 219.1 *Flagellaria* L. (1)

### 220. GRAMINEAE [92, 238]

- |  |  |
|--|--|
| 220.1 <i>Acroceras</i> Stapf (2)       | 220.22 <i>Dactyloctenium</i> Willd. (1)      |
| 220.2 <i>Alloteropsis</i> C. Presl (1) | 220.23 <i>Dendrocalamus</i> Nees (7)         |
| 220.3 <i>Alopecurus</i> L. (1)         | 220.24 <i>Dichanthium</i> Willemet (3)       |
| 220.4 <i>Apluda</i> L. (1)             | 220.25 <i>Digitaria</i> Haller (10)          |
| 220.5 <i>Aristida</i> L. (1)           | 220.26 <i>Dimeria</i> R.Br. (4)              |
| 220.6 <i>Arthraxon</i> P. Beauv. (2)   | 220.27 <i>Dinochloa</i> Büse (3)             |
| 220.7 <i>Arundinella</i> Raddi (1)     | 220.28 <i>Echinochloa</i> P. Beauv. (3)      |
| 220.8 <i>Axonopus</i> P. Beauv. (2)    | 220.29 <i>Eleusine</i> Gaertn. (1)           |
| 220.9 <i>Bambusa</i> Schreb. (1)       | 220.30 <i>Enteropogon</i> Nees (1)           |
| 220.10 <i>Bothriochloa</i> Kuntze (2)  | 220.31 <i>Eragrostis</i> Wolf (9)            |
| 220.11 <i>Briza</i> L. (1)             | 220.32 <i>Eremochloa</i> Büse (1)            |
| 220.12 <i>Capillipedium</i> Stapf (1)  | 220.33 <i>Eriachne</i> R.Br. (2)             |
| 220.13 <i>Cenchrus</i> L. (1)          | 220.34 <i>Eriochloa</i> Kunth (1)            |
| 220.14 <i>Centotheca</i> Desv. (2)     | 220.35 <i>Eulalia</i> Kunth (6)              |
| 220.15 <i>Chloris</i> Sw. (2)          | 220.36 <i>Eustachys</i> Desv. (1)            |
| 220.16 <i>Chrysopogon</i> Trin. (3)    | 220.37 <i>Garnotia</i> Brongn. (2)           |
| 220.17 <i>Coelanchne</i> R.Br. (1)     | 220.38 <i>Gigantochloa</i> Kurz ex Munro (8) |
| 220.18 <i>Coix</i> L. (2)              | 220.39 <i>Hemarthria</i> R.Br. (2)           |
| 220.19 <i>Cymbopogon</i> Spreng. (2)   | 220.40 <i>Heteropogon</i> Pers. (1)          |
| 220.20 <i>Cynodon</i> Rich. (2)        | 220.41 <i>Holttumochloa</i> K.M. Wong (3)    |
| 220.21 <i>Cyrtococcum</i> Stapf (3)    | 220.42 <i>Hymenachne</i> P. Beauv. (1)       |

- 220.43 *Ichnanthus* P. Beauv. (1)  
 220.44 *Imperata* Cirillo. (2)  
 220.45 *Isachne* R.Br. (9)  
 220.46 *Ischaemum* L. (10)  
 220.47 *Kinabaluochloa* K.M. Wong (1)  
 220.48 *Leersia* Sw. (1)  
 220.49 *Leptaspis* R.Br. (1)  
 220.50 *Leptochloa* P. Beauv. (4)  
 220.51 *Lepturus* R.Br. (1)  
 220.52 *Lolium* L. (1)  
 220.53 *Lophatherum* Brongn. (1)  
 220.54 *Maclurochloa* K.M. Wong (1)  
 220.55 *Melinis* P. Beauv. (1)  
 220.56 *Microstegium* Nees (3)  
 220.57 *Miscanthus* Andersson (3)  
 220.58 *Mnesithea* Kunth (5)  
 220.59 *Myriostachya* (Benth.) Hook.f. (1)  
 220.60 *Neyraudia* Hook.f. (1)  
 220.61 *Oplismenus* P. Beauv. (2)  
 220.62 *Oryza* L. (4)  
 220.63 *Ottochloa* Dandy (1)  
 220.64 *Panicum* L. (12)  
 220.65 *Paspalum* L. (7)  
 220.66 *Pennisetum* Rich. (3)  
 220.67 *Perotis* Aiton (1)  
 220.68 *Phragmites* Adans. (1)  
 220.69 *Poa* L. (1)  
 220.70 *Pogonatherum* P. Beauv. (1)  
 220.71 *Polytrias* Hack. (1)  
 220.72 *Pseudechinolaena* Stapf (1)  
 220.73 *Pseudoraphis* Griff. (1)  
 220.74 *Racemobambos* Holttum (1)  
 220.75 *Saccharum* L. (3)  
 220.76 *Sacciolepis* Nash (3)  
 220.77 *Schizachyrium* Nees (2)  
 220.78 *Schizostachyum* Nees (9)  
 220.79 *Setaria* P. Beauv. (7)  
 220.80 *Soejatmia* K.M. Wong (1)  
 220.81 *Sorghum* Moench (1)  
 220.82 *Sphaerocarum* Nees *ex* Hook.f. (1)  
 220.83 *Spinifex* L. (1)  
 220.84 *Sporobolus* R.Br. (3)  
 220.85 *Stenotaphrum* Trin. (2)  
 220.86 *Themeda* Forssk. (3)  
 220.87 *Thuarea* Pers. (1)  
 220.88 *Thysanolaena* Nees (1)  
 220.89 *Tripsacum* L. (2)  
 220.90 *Urochloa* P. Beauv. (5)  
 220.91 *Vetiveria* Bory (2)  
 220.92 *Zoysia* Willd. (1)

## 221. HANGUANACEAE [1, 1]

- 221.1 *Hanguana* Blume (1)

## 222. HYDROCHARITACEAE [7, 12]

- 222.1 *Blyxa* Noronha *ex* Thouars (2)  
 222.2 *Enhalus* Rich. (1)  
 222.3 *Halophila* Thouars (4)  
 222.4 *Hydrilla* Rich. (1)  
 222.5 *Najas* L. (2)  
 222.6 *Ottelia* Pers. (1)  
 222.7 *Thalassia* Banks *ex* K.D. Koenig (1)

## 223. HYPOXIDACEAE [2, 3]

- 223.1 *Hypoxis* L. (1)  
 223.2 *Molineria* Colla (2)

## 224. IRIDACEAE [1, 1]

- 224.1 *Trimezia* Salisb. *ex* Herb. (1)

## 225. JOINVILLEACEAE [1, 1]

- 225.1 *Joinvillea* Gaudich. *ex* Brongn. & Gris (1)

## 226. JUNCACEAE [1,1]

- 226.1 *Juncus* L. (1)

## 227. LEMNACEAE [3, 5]

- 227.1 *Lemna* L. (2)  
 227.2 *Spirodela* Schleid. (2)  
 227.3 *Wolffia* Horkel *ex* Schleid. (1)



**228. LIMNOCHARITACEAE [1, 1]**228.1 *Limnocharis* Bonpl. (1)**229. LOWIACEAE [1, 3]**229.1 *Orchidantha* N.E.Br. (3)**230. MARANTACEAE [5, 16]**230.1 *Donax* Lour. (2)230.4 *Schumannianthus* Gagnep. (1)230.2 *Phacelophrynium* K. Schum. (1)230.5 *Stachyphrynium* K. Schum. (4)230.3 *Phrynium* Willd. (8)**231. MELANTHIACEAE [1, 1]**231.1 *Petrosavia* Becc. (1)**232. MUSACEAE [1, 4]**232.1 *Musa* L. (4)**233. ORCHIDACEAE [147, 853]**233.1 *Abdominea* J.J.Sm. (1)233.33 *Cleisomeria* Lindl. ex G. Don (1)233.2 *Acampe* Lindl. (1)233.34 *Cleisostoma* Blume (17)233.3 *Acanthephippium* Blume (3)233.35 *Coelogyne* Lindl. (28)233.4 *Acriopsis* Blume (5)233.36 *Collabium* Blume (1)233.5 *Adenoncos* Blume (4)233.37 *Cordiglottis* J.J.Sm. (5)233.6 *Aerides* Lour. (2)233.38 *Corybas* Salisb. (11)233.7 *Agrostophyllum* Blume (8)233.39 *Corymborkis* Thouars (1)233.8 *Ainia* Lindl. (1)233.40 *Cryptostylis* R. Br. (2)233.9 *Anoectochilus* Blume (8)233.41 *Cymbidium* Sw. (10)233.10 *Aphyllorchis* Blume (3)233.42 *Cyrtosia* Blume (1)233.11 *Apostasia* Blume (5)233.43 *Cystorchis* Blume (3)233.12 *Appendicula* Blume (11)2323.44 *Dendrobium* Sw. (86)233.13 *Arachnis* Blume (3)233.45 *Dendrochilum* Blume (13)233.14 *Arundina* Blume (1)233.46 *Didymoplexiella* Garay (1)233.15 *Ascidieria* Seidenf. (1)233.47 *Didymoplexis* Griff. (1)233.16 *Ascocentrum* Schltr. ex J.J.Sm. (1)233.48 *Diglyphosa* Blume (1)233.17 *Ascochilopsis* Carr (1)233.49 *Dilochia* Lindl. (1)233.18 *Ascochilus* Ridl. (2)233.50 *Diplocaulobium* (Rchb.f.) Kraenzl. (1)233.19 *Biermannia* King & Pantl. (4)233.51 *Dipodium* R.Br. (4)233.20 *Brachypeza* Garay (1)233.52 *Doritis* Lindl. (1)233.21 *Bromheadia* Lindl. (10)233.53 *Epigeneium* Gagnep. (4)233.22 *Bulbophyllum* Thouars (110)233.54 *Epipogium* Borkh. (1)233.23 *Calanthe* Ker Gawl. (21)233.55 *Eria* Lindl. (48)233.24 *Cephalantheropsis* Guillaumin (1)233.56 *Erythrodes* Blume (2)233.25 *Ceratostylis* Blume (12)233.57 *Erythrorchis* Blume (2)233.26 *Cheirostylis* Blume (3)233.58 *Eulophia* R.Br. ex Lindl. (5)233.27 *Chelonistele* Pfitzer (1)233.59 *Flickingeria* A.D. Hawkes (11)233.28 *Chiloschista* Lindl. (1)233.60 *Galeola* Lour (1)233.29 *Chroniochilus* J.J.Sm. (3)233.61 *Gastrochilus* D. Don (2)233.30 *Chrysoglossum* Blume (1)233.62 *Gastrodia* R.Br. (2)233.31 *Cirrhopetalum* Lindl. (12)233.63 *Geodorum* Jacks. (2)233.32 *Claderia* Hook.f. (1)233.64 *Goodyera* R.Br. (7)

- 233.65 *Grammatophyllum* Blume (2)  
 233.66 *Grosourdyia* Rchb.f. (4)  
 233.67 *Habenaria* Willd. (8)  
 233.68 *Herminium* L. (1)  
 233.69 *Hetaeria* Blume (9)  
 233.70 *Hippeophyllum* Schltr. (1)  
 233.71 *Hylophila* Lindl. (2)  
 233.72 *Kingidium* P.F. Hunt (1)  
 233.73 *Kuhlhasseltia* J.J.Sm. (1)  
 233.74 *Lecanorchis* Blume (3)  
 233.75 *Lepidogyne* Blume (1)  
 233.76 *Liparis* Rich. (22)  
 233.77 *Ludisia* A. Rich. (1)  
 233.78 *Luisia* Gaudich. (4)  
 233.79 *Macodes* (Blume) Lindl. (1)  
 233.80 *Macropodanthus* L.O. Williams (2)  
 233.81 *Malaxis* Sol. *ex* Sw. (12)  
 233.82 *Malleola* J.J.Sm. & Schltr. (6)  
 233.83 *Mastigion* Garay, Hamer & Siegerist (1)  
 233.84 *Micropera* Lindl. (3)  
 233.85 *Microsaccus* Blume (5)  
 233.86 *Mischobulbum* Schltr. (2)  
 233.87 *Nephelaphyllum* Blume (2)  
 233.88 *Nervilia* Comm. *ex* Gaudich. (4)  
 233.89 *Neuwiedia* Blume (3)  
 233.90 *Oberonia* Lindl. (29)  
 233.91 *Octarrhena* Thwaites (2)  
 233.92 *Oeceoclades* Lindl. (1)  
 233.93 *Orchipedum* Breda (1)  
 233.94 *Ornithochilus* (Lindl.) Benth. (1)  
 233.95 *Pachystoma* Blume (1)  
 233.96 *Paphiopedilum* Pfitzer (5)  
 233.97 *Papilionanthe* Schltr. (1)  
 233.98 *Pecteilis* Raf. (1)  
 233.99 *Pelatantheria* Ridl. (1)  
 233.100 *Pennilabium* J.J.Sm. (3)  
 233.101 *Peristylus* Blume (7)  
 233.102 *Phaius* Lour. (4)  
 233.103 *Phalaenopsis* Blume (8)  
 233.104 *Pholidota* Lindl. *ex* Hook. (6)  
 233.105 *Phreatia* Lindl. (8)  
 233.106 *Pilophyllum* Schltr. (1)  
 233.107 *Platanthera* Rich. (1)  
 233.108 *Plocoglottis* Blume (4)  
 233.109 *Poaephyllum* Ridl. (1)  
 233.110 *Podochilus* Blume (4)  
 233.111 *Polystachya* Hook. (1)  
 233.112 *Pomatocalpa* Breda, Kuhl & Hasselt (7)  
 233.113 *Porpax* Lindl. (1)  
 233.114 *Porphyroglottis* Ridl. (1)  
 233.115 *Pristiglottis* Cretz. & J.J.Sm. (1)  
 233.116 *Pteroceras* Hasselt *ex* Hassk. (8)  
 233.117 *Renanthera* Lour. (2)  
 233.118 *Renantherella* Ridl. (1)  
 233.119 *Rhynchogyna* Seidenf. & Garay (1)  
 233.120 *Rhynchostylis* Blume (2)  
 233.121 *Rhytionanthos* Garay, Hamer & Siegerist (1)  
 233.122 *Robiquetia* Gaudich. (1)  
 233.123 *Sarcoglyphis* Garay (1)  
 233.124 *Sarcostoma* Blume (1)  
 233.125 *Schoenorchis* Blume (3)  
 233.126 *Smitinandia* Holttum (1)  
 233.127 *Spathoglottis* Blume (6)  
 233.128 *Spiranthes* Rich. (1)  
 233.129 *Staurochilus* Ridl. *ex* Pfitzer (2)  
 233.130 *Stereosandra* Blume (1)  
 233.131 *Taeniophyllum* Blume (16)  
 233.132 *Tainia* Blume (4)  
 233.133 *Thecopus* Seidenf. (2)  
 233.134 *Thecostele* Rchb.f. (1)  
 233.135 *Thelasis* Blume (5)  
 233.136 *Thrixspermum* Lour. (29)  
 233.137 *Thunia* Rchb.f. (1)  
 233.138 *Trichoglottis* Blume (6)  
 233.139 *Trichotosia* Blume (11)  
 233.140 *Tropidia* Lindl. (4)  
 233.141 *Tuberolabium* Yamam. (1)  
 233.142 *Vanda* Jones *ex* R.Br. (1)  
 232.143 *Vandopsis* Pfitzer (1)  
 232.144 *Vanilla* Mill. (5)  
 232.145 *Ventricularia* Garay (1)  
 232.146 *Vrydagzynea* Blume (3)  
 233.147 *Zeuxine* Lindl. (10)

#### 234. PALMAE [32, 198]

- 234.1 *Areca* L. (4)  
 234.2 *Arenga* Labill. (5)  
 234.3 *Borassodendron* Becc. (1)  
 234.4 *Calamus* L. (60)  
 234.5 *Calospatha* Becc. (1)  
 234.6 *Caryota* L. (2)  
 234.7 *Ceratolobus* Blume (2)  
 234.8 *Cocos* L. (1)  
 234.9 *Corypha* L. (1)  
 234.10 *Cyrtostachys* Blume (1)  
 234.11 *Daemonorops* Blume (22)  
 234.12 *Eleiodoxa* (Becc.) Burret (1)  
 234.13 *Eugeissona* Griff. (2)  
 234.14 *Iguanura* Blume (4)

- 234.15 **Johannesteijsmannia** H.E. Moore (4)      234.24 **Orania** Zipp. (1)  
 234.16 **Korthalsia** Blume (9)      234.25 **Phoenix** L. (1)  
 234.17 **Licuala** Thunb. (26)      234.26 **Pholidocarpus** Blume (2)  
 234.18 **Livistona** R.Br. (4)      234.27 **Pinanga** Blume (19)  
 234.19 **Maxburretia** Furtado (2)      234.28 **Plectocomia** Mart. ex Blume (3)  
 234.20 **Myrialepis** Becc. (1)      234.29 **Plectocomiopsis** Becc. (4)  
 234.21 **Nenga** H.A. Wendl. & Drude (3)      234.32 **Salacca** Reinw. (7)  
 234.22 **Nypa** Steck (1)      234.31 **Rhopaloblaste** Scheff. (1)  
 234.23 **Oncosperma** Blume (2)      234.30 **Pogonotium** J. Dransf. (1)

### 235. PANDANACEAE [2, 56]

- 235.1 **Freycinetia** Gaudich. (8)      235.2 **Pandanus** Parkinson (48)

### 236. PHILYDRACEAE [1, 1]

- 236.1 **Philydrum** Banks ex Gaertn. (1)

### 237. PHORMIACEAE [1, 2]

- 237.1 **Dianella** Lam. (2)

### 238. PONTEDERIACEAE [2, 4]

- 238.1 **Eichhornia** Kunth (1)      237.2 **Monochoria** C. Presl (3)

### 239. POTOMAGETONACEAE [1, 1]

- 239.1 **Ruppia** L. (1)

### 240. RESTIONACEAE [1, 1]

- 240.1 **Leptocarpus** R.Br. (1)

### 241. SMILACACEAE [2, 15]

- 241.1 **Heterosmilax** Kunth (1)      241.2 **Smilax** L. (14)

### 242. STEMONACEAE [2, 2]

- 242.1 **Stemona** Lour. (1)      242.2 **Stichoneuron** Hook.f. (1)

### 243. TACCACEAE [1, 4]

- 243.1 **Tacca** J.R. Forst. & G. Forst. (4)

### 244. TRICHOPODACEAE [1, 1]

- 244.1 **Trichopus** Gaertn. (1)

### 245. TRIURIDACEAE [1, 4]

- 245.1 **Sciaphila** Blume (4)

### 246. TYPHACEAE [1, 1]

- 246.1 **Typha** L. (1)

**247. XYRIDACEAE [1, 7]**247.1 *Xyris* L. (7)**248. ZINGIBERACEAE [18, 150]**248.1 *Alpinia* Roxb. (23)248.2 *Amomum* Roxb. (18)248.3 *Boesenbergia* Kuntze (8)248.4 *Camptandra* Ridl. (3)248.5 *Curcuma* L. (3)248.6 *Elettaria* Maton (1)248.7 *Elettariopsis* Baker (5)248.8 *Etlingera* Giseke (10)248.9 *Geocharis* (K.Schum.) Ridl. (2)248.10 *Geostachys* (Baker) Ridl. (13)248.11 *Globba* L. (15)248.12 *Haniffia* Holttum (1)248.13 *Hedychium* J. König (7)248.14 *Hornstedtia* Retz. (7)248.15 *Kaempferia* L. (2)248.16 *Plagiostachys* Ridl. (3)248.17 *Scaphochlamys* Baker (20)248.18 *Zingiber* Boehm. (9)

## The Catalogue

**FMP** = *Flora of the Malay Peninsula* by H.N. Ridley (vols. 1-5)

**FMi** = *Flora Malesiana, series I* (vols. 4-12)

**FMii** = *Flora Malesiana, series II* (vols. 1-2)

**TFM** = *Tree Flora of Malaya* (vols. 1-4)

### 1. EQUISETACEAE

- 1.1.1 **Equisetum ramosissimum** Desf. ssp. **debile** (Roxb.) Hauke, **H26** 61, **M09** 209; herb of open sites and roadsides; Gg Ulu Kali and near Raub, Ph.

### 2. LYCOPODIACEAE

- 2.1.1 **Huperzia carinata** (Desv. ex Poir.) Trevis., **O02** 11; *Lycopodium carinatum* Poir., **T01** 8, **A12** 226; epiphyte or terrestrial; lowland forest, sometimes on limestone; Pn, Kl, Tg, Ph, Sp.
- 2.1.2 **Huperzia coralia** (Spring) Holub, **O02** 11; epiphyte; montane forest; Pk.
- 2.1.3 **Huperzia dalhousiana** (Spring) Trevis., **O02** 12; *Lycopodium dalhousianum* Spring, **A13** 228; epiphyte; lowland forest; Pn, Ph, Ml.
- 2.1.4 **Huperzia hippuris** (Desv. ex Poir.) Trevis., **O02** 14, Parris *pers. comm.*; once from Cameron Highlands, Ph.
- 2.1.5 **Huperzia nummulariifolia** (Blume) T.C. Chambers & al., **O02** 17; *Lycopodium nummulariifolium* Blume, **T01** 11; epiphyte; on tree trunks in lowland and hill forest; Kd, Pn, Kl, Ph, Jh.
- 2.1.6 **Huperzia phlegmaria** (L.) Rothm., **O02** 18; *Lycopodium phlegmaria* L., **T01** 10; epiphyte; common on forest trees; widespread.
- 2.1.7 **Huperzia phlegmarioides** (Gaudich.) Rothm., **O02** 18, **P11**, **A12** 232, pendulous epiphyte.
- 2.1.8 **Huperzia phyllantha** (Hook.f. & Arn.) Holub, **O02** 18; epiphyte; lower montane forest; Pn, Kl, Pk, NS, Sp.
- 2.1.9 **Huperzia pinifolia** Trevis., **O02** 18, **P11**; *Lycopodium piscium* (Herter) Tagawa & K. Iwatsuki, **T01** 10; on trees or rocks.
- 2.1.10 **Huperzia serrata** (Thunb. ex Murr.) Trevis., **O02** 20; *Lycopodium serratum* Thunb. ex Murr., **T01** 7; terrestrial; dense forest above 1000 m; Ph.

- 2.1.11 **Huperzia squarrosa** (G. Forst.) Trevis., **O02** 21; *Lycopodium squarrosus* G.Forst., **T01** 9; epiphyte; on forest trees, including mangroves, to mid-altitudes; Kd, Kl, Pk, Ph.
- 2.1.12 **Huperzia tetrasticha** (Kunze) Holub, **O02** 22; epiphytic or terrestrial; Kl, Ph, NS.  
Parris also [**P11**] includes two sp. nov. in her list.
- 2.2.1 **Lycopodiella caroliniana** (L.) Pic.Serm., **O02** 25; *Lycopodium carolinianum* L., **K46** 197; terrestrial; open sites on poor soils; Tg, Ph, Jh.
- 2.2.2 **Lycopodiella cernua** (L.) Pic.Serm., **O02** 25; *Lycopodium cernuum* L., **T01** 12; terrestrial; common in open sites on poor soils to 1200 m; widespread.
- 2.3.1 **Lycopodium casuarinoides** Spring, **O02** 36; terrestrial; montane forest; Kd, Tg, Pk, Ph, Ml, Jh.
- 2.3.2 **Lycopodium clavatum** L., **O02** 38, **P11**; terrestrial; mountains; Pk, Ph.
- 2.3.3 **Lycopodium platyrhizoma** Wilce, **W17** 150, **O02** 63; terrestrial; above 1300 m.
- 2.3.4 **Lycopodium volubile** G. Forst., **O02** 77, **P11**; terrestrial; Pn.
- 2.3.5 **Lycopodium wightianum** Wall. ex Grev. & Hook., **W17** 128, **O02** 77; terrestrial; mountain-tops at about 2000 m.

### 3. PSILOACEAE

- 3.1.1 **Psilotum complanatum** Sw., **T01** 6; *Psilotum flaccidum* Wall.; epiphyte; on tree trunks in light shade.
- 3.1.2 **Psilotum nudum** (L.) P. Beauv., **T01** 5; *Psilotum triquetrum* Sw.; often epiphytic; on mossy tree trunks to mid-altitudes.

### 4. SELAGINELLACEAE

- 4.1.1 **Selaginella alutacia** Spring, **W24** 120; terrestrial; lowland and montane forest; Pk, Ph, Sl, NS, Ml, Jh.
- 4.1.2 **Selaginella argentea** (Wall. ex Hook. & Grev.) Spring, **W24** 121; terrestrial; lowland and hill forest, including limestone; Kd, Pn, Ph.
- 4.1.3 **Selaginella caulescens** (Wall. ex Hook. & Grev.) Spring, **W24** 121; terrestrial; forests; twice from Pk.
- 4.1.4 **Selaginella ciliaris** (Retz.) Spring, **W24** 122; poorly known.

- 4.1.5 ***Selaginella cuprea*** Ridl., **W24** 122; terrestrial; lowland to montane forest; Kl, Tg, Pk, Ph, Sl; endemic.
- 4.1.6 ***Selaginella curtisii*** Ridl., **W24** 122; terrestrial; only known from type, Gg Bujong Malacca, Pk; endemic.
- 4.1.7 ***Selaginella delicatula*** (Desv.) Alston, **W24** 123; terrestrial; often on limestone; Ps, Kd, Pn, Ph, Sl.
- 4.1.8 ***Selaginella frondosa*** Warb., **W24** 123; terrestrial; lowland forest; Kl, Pk, Ph, Sl, Jh.
- 4.1.9 ***Selaginella griffithii*** Spring, **W24** 123; terrestrial; only recorded from P. Langkawi.
- 4.1.10a ***Selaginella intermedia*** (Blume) Spring var. ***dolichocentra*** K.M. Wong, **W24** 125; terrestrial; hill tops and mountains; Pn, Pk, Ph, Sl, Jh.
- 4.1.10b ***Selaginella intermedia*** (Blume) Spring var. ***intermedia***, **W24** 124; terrestrial; lowlands to mountain tops; Kd, Pk, Ph, Sl, NS, Jh.
- 4.1.11 ***Selaginella longiaristata*** Hieron., **W24** 126; Ml.
- 4.1.12 ***Selaginella mayeri*** Hieron., **W24** 126; terrestrial; from lowlands to highlands and on limestone; Pn, Pk, Ph, Sl, NS.
- 4.1.13 ***Selaginella minutifolia*** Spring, **W24** 127; terrestrial; lowlands and mountains; Kd, Ph, Sl.
- 4.1.14 ***Selaginella mirabilis*** Parris, ined., **P13** 6; Taman Negara, Ph; endemic.
- 4.1.15 ***Selaginella morgani*** Zeiller, **W24** 127; terrestrial; mountains; Pk, Ph; endemic.
- 4.1.16 ***Selaginella ornata*** (Hook. & Grev.) Spring, **W24** 127; terrestrial; mostly in hills and mountains; Pn, Pk, Ph, Sl, NS.
- 4.1.17 ***Selaginella padangensis*** Hieron., **W24** 128; terrestrial; lowland forests; Pk, Ph, Sl.
- 4.1.18 ***Selaginella plana*** (Desv.) Hieron., **W24** 128; terrestrial; few collections - Pn, Ph.
- 4.1.19 ***Selaginella polita*** Ridl., **W24** 129; terrestrial; mountains; Pk, Ph; endemic.
- 4.1.20 ***Selaginella repanda*** (Desv.) Spring; **W24** 129; terrestrial; Ps.
- 4.1.21 ***Selaginella ridleyi*** Baker, **W24** 129; terrestrial; known only from type; on rocks in stream, Mt Ophir, Ml; endemic.

- 4.1.22 **Selaginella rivalis** Ridl., **W24** 130; terrestrial; roadsides and tracks; Ph, Sl; endemic.
- 4.1.23a **Selaginella roxburghii** (Hook. & Grev.) Spring var. **roxburghii**, **W24** 130; terrestrial; lowland and hill forest; Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 4.1.23b **Selaginella roxburghii** (Hook. & Grev.) Spring var. **strigosa** (Ridl.) K.M. Wong, **W24** 131; terrestrial; lowland and hill forest; Kd, Ph, Jh; endemic variety.
- 4.1.24 **Selaginella scabrida** Ridl., **W24** 131; terrestrial; Ph; endemic.
- 4.1.25 **Selaginella selangorensis** Bedd. ex Ridl., **W24** 131; terrestrial; lowlands to mountains; Pn, Ph, Sl; endemic.
- 4.1.26 **Selaginella stipulata** (Blume) Spring, **W24** 132; terrestrial; mostly in the mountains; Tg, Pk, Ph, Sl, NS, Jh.
- 4.1.27 **Selaginella strigosa** Bedd., **W24** 133; terrestrial; mountain tops; Sl, NS, Jh; endemic.
- 4.1.28 **Selaginella wallichii** (Hook. & Grev.) Spring, **W24** 133; terrestrial; lowlands to mountains; Kd, Tg, Pk, Ph, Sl, NS, Jh.
- 4.1.29 **Selaginella willdenowii** (Desv.) Baker, **W24** 133; terrestrial; lowlands to mountains, including limestone; Kd, Pk, Ph, Sl, NS, Jh, Sp.

## 5. ADIANTACEAE

- 5.1.1 **Adiantum capillus-veneris** L., **H45** 600, **P19** 417; terrestrial or epilithic; exposed places in lowlands; north of Malaya.
- 5.1.2 **Adiantum caudatum** L., **H45** 599 in a small part, **H45** 638; terrestrial; once collected from Tasek Chenderoh, Pk.
- 5.1.3 **Adiantum flabellulatum** L., **H45** 603, **P19** 419; terrestrial; on rocks and banks in the lowlands; Pn, Pk, Ph, Sp.
- 5.1.4 **Adiantum fructuosum** Spreng., **T05** 127; large terrestrial fern; on shaded earth banks; Sp; naturalized from tropical America.
- 5.1.5 **Adiantum hispidulum** Sw., **H45** 603; terrestrial; on earth banks around Singapore; presumed native.
- 5.1.6 **Adiantum latifolium** Lam., **P19** 420; terrestrial; weed of lightly shaded places; naturalized from tropical America.



- 5.1.7 **Adiantum malesianum** Ghatak, **H45** 638, **C13** 207, **P19** 416; *Adiantum caudatum sensu* Holttum, **H43** 599 in the major part; common on limestone rocks; north of Malaya.
- 5.1.8 **Adiantum philippense** L., **H45** 598; on limestone in the north.
- 5.1.9 **Adiantum soboliferum** Wall. *ex* Hook., **H45** 598, **C13** 207; on limestone in the north.
- 5.1.10 **Adiantum stenochlamys** Baker. **H45** 602, **P19** 418; frequent on rocks near the sea; widespread.
- 5.1.11 **Adiantum zollingeri** Mett. *ex* Kuhn, **H45** 638, **C13** 207; *Adiantum caudatum* L. var. *subglabrum* Holttum, *nom. nud.*, **H45** 600; on limestone; Ps, Kd.
- 5.1.12 **Adiantum sp. aff. rhizophorum**, **H45** 638, **P11**; limestone; once from Gg Tempurong, Pk.
- 5.2.1 **Cheilanthes belangeri** (Bory) C.Chr., **H45** 591; terrestrial; in forest under light shade; in the north.
- 5.2.2 **Cheilanthes contigua** Baker, **Q01** 515; terrestrial; one collection at BM from Malaya, no exact location.
- 5.2.3 **Cheilanthes farinosa** (Forssk.) Kaulf., **H45** 592, **C13** 207, **P19** 413; terrestrial; at base of limestone outcrops; Bt Baling, Kd, and Bt Chintamani, Ph.
- 5.2.4 **Cheilanthes tenuifolia** (Burm.f.) Sw., **H45** 590, **P19** 412; terrestrial; common on banks and rocks in exposed places at low altitudes; widespread.
- 5.3.1 **Coniogramme fraxinea** (D.Don) Fée *ex* Diels, **H45** 589, **P19** 423; terrestrial; near streams in montane forest; Pk, Ph.
- 5.4.1 **Doryopteris allenae** Tryon, **H45** 638, **C13** 208; creeping fern; shady crevices in limestone; Pk, Sl; endemic.
- 5.4.2 **Doryopteris ludens** (Wall. *ex* Hook.) J.Sm., **H45** 594, **P19** 414; on limestone; Ps, Kd, Pk, Sl.
- 5.5.1 **Hemionitis arifolia** (Burm.f.) T. Moore, **H45** 596, **C13** 208, **P19** 427; on rocks, usually limestone; in the north.
- 5.6.1 **Pityrogramma calomelanos** (L.) Link, **H45** 593, **P01** 660, **P19** 424; terrestrial; open, disturbed ground at all altitudes; Kl, Pk, Ph, Sl, NS, Sp; naturalized from the Neotropics.
- 5.7.1 **Syngamma alismifolia** (C. Presl) J.Sm., **H45** 581 in part, **H46** 329; terrestrial; damp places in forests; widespread.
- 5.7.2 **Syngamma borneensis** (Hook.) J.Sm., **H45** 582, **H48** 332; terrestrial; in forest on mountain ridges; Gg Panti and Gg Ledang, Jh.

- 5.7.3 **Syngamma cartilagidens** (Baker) Diels, **H45** 583, **H48** 332; on wet shady rocks in forest streams; Ph, Sl, Jh.
- 5.7.4 **Syngamma coriacea** (Copel.) Holttum, **H48** 330; *Syngamma quinata* auct. non (Hook.) Carr, **H45** 580; terrestrial; in moist forest; Taiping Hills, Pk.
- 5.7.5 **Syngamma dayi** (Bedd.) Bedd., **H45** 582, **H48** 332; on exposed quartzite ridges; Pk, Sl; endemic.
- 5.7.6 **Syngamma minima** Holttum, **H45** 585, **H48** 332; on quartzite near the summit of Gg Panti, Jh; endemic.
- 5.7.7 **Syngamma wallichii** (Hook.) Bedd., **H48** 330, **P19** 422; *Syngamma alismifolia* auct. non (C. Presl) J. Sm., **H45** 581 in part; terrestrial; shady stream valleys in lowlands and hills.
- 5.8.1 **Taenitis blechnoides** (Willd.) Sw., **H45** 586, **P19** 437; terrestrial; common at forest edges and in plantations; widespread.
- 5.8.2 **Taenitis dimorpha** Holttum, **H45** 588, **P19** 439; terrestrial; dryish banks in mid-montane forests; Ph, Sl, Jh; endemic.
- 5.8.3 **Taenitis interrupta** Hook. & Grev., **H45** 587, **P19** 438; terrestrial; damp shady spots in lowland forest; widespread.

## 6. ASPLENIACEAE

- 6.1.1 **Asplenium affine** Sw., **P19** 286; *Asplenium spathulinum* J.Sm. ex Hook., **H45** 439; epiphyte and on rocks; shaded mountain valleys.
- 6.1.2 **Asplenium batuense** Alderw., **H45** 423, **P19** 271; climbing on tree trunks; damp forest to 1000 m.
- 6.1.3 **Asplenium borneense** Hook., **H45** 436; on rocks by streams to 1000 m; Pk, P. Tioman.
- 6.1.4 **Asplenium caudatum** G. Forst., **H45** 428, **P19** 276; epiphyte, sometimes on rocks; montane forest.
- 6.1.5 **Asplenium cheilosorum** Kunze ex Mett., **H45** 435; near streams; Cameron Highlands, Ph.
- 6.1.6 **Asplenium excisum** C. Presl, **H45** 439; on rocks in, and near, streams; Cameron Highlands, Ph.
- 6.1.7 **Asplenium grevillei** Wall. ex Hook. & Grev., **E01** 163; epiphyte; lowland forest; once from Temengor F.R., Pk.

- 6.1.8 **Asplenium longissimum** Blume, **H45** 427, **P19** 274; epiphyte, often on palm and bamboo stems; widespread.
- 6.1.9 **Asplenium macrophyllum** Sw., **H45** 431, **P19** 278; on trees and rocks; lowland and lower montane forest
- 6.1.10 **Asplenium musifolium** J.Sm. ex Mett., **H47** 149; *Asplenium nidus* L. var. *musifolium* (J.Sm. ex Mett.) Alderw., **H45** 419; epiphyte; lowland forest.
- 6.1.11 **Asplenium nidus** L., **H45** 419, **H47** 148, **P19** 267; common epiphyte; lowlands and mountains; throughout.
- 6.1.12 **Asplenium nitidum** Sw., **T03** 286; *Asplenium glaucophyllum* Alderw., **H45** 440, **P19** 287; epiphyte; lowlands and hills; common on oil palm in the south.
- 6.1.13 **Asplenium normale** D. Don, **H45** 436, **P19** 283; on rocks and mossy ground; montane forest at 750–1500 m.
- 6.1.14 **Asplenium paradoxum** Blume, **H45** 430, **P19** 277; on rocks and trees; lowland and hill forest.
- 6.1.15 **Asplenium pellucidum** Lam., **H45** 428, **P19** 275; on trees and rocks, including limestone; lowlands and hills.
- 6.1.16 **Asplenium perakense** C.G. Matthew & H. Christ, **H45** 429; epiphyte; montane forest; Taiping Hills, Pk & Fraser's Hill, Ph.
- 6.1.17 **Asplenium phyllitidis** D. Don ssp. *malesicum* Holttum, **H47** 153, **P19** 268; *Asplenium phyllitidis* D. Don, **H45** 420; on trees and rocks; lowlands and hills.
- 6.1.18 **Asplenium polyodon** G. Forst, **M57** 30, **P11**; *Asplenium adiantoides* (L.) C. Chr., **H45** 431, **C13** 207, **P19** 279; on rocks, often limestone; in the north.
- 6.1.19 **Asplenium robustum** Blume, **H45** 442, **P19** 288; epiphyte; montane forest.
- 6.1.20 **Asplenium salignum** Blume, **H45** 421, **P19** 270; on rocks at low altitudes, epiphyte in mountains.
- 6.1.21 **Asplenium scalare** Rosenst., **H45** 425, **P19** 272; on rocks or trees by streams; montane forest.
- 6.1.22 **Asplenium scolopendrioides** J.Sm. ex Hook.; **H45** 422; low-level epiphyte; lowland forest; Ph, P. Tioman.
- 6.1.23 **Asplenium scortechinii** Bedd., **H45** 420, **P19** 269; epiphyte; montane forest at 900–1800m; Pk, Ph.
- 6.1.24 **Asplenium sublaserpitiifolium** Ching, **H45** 441; once collected on P. Tioman at sea level.

- 6.1.25 **Asplenium subnormale** Copel., **H45** 437, **P19** 284; known from two localities; Sl, P. Tioman.
- 6.1.26 **Asplenium tenerum** G. Forst., **H45** 432 incl. var. *retusum* C. Chr., **P19** 280; epiphyte; lowland and montane forest.
- 6.1.27 **Asplenium thunbergii** Kunze, **H45** 634, **P19** 282; *Asplenium belangeri* (Bory) Kunze, **H45** 434; epiphyte found near the bases of trees; lowland and hill forest.
- 6.1.28 **Asplenium unilaterale** Lam., **H45** 438, **P19** 285; on rocks and stream banks; lowland and hill forest to 1200 m.
- 6.1.29 **Asplenium vittiforme** Cav., **P12** 28; *Asplenium squamulatum* Blume, **H45** 426, **C13** 209, **P19** 273; on rocks, including limestone; lowlands; Kl, Ph, Sl.

## 7. AZOLLACEAE

- 7.1.1 **Azolla pinnata** R.Br. ssp. *asiatica* R.M.K. Saunders & K. Fowler, **S06** 349; *Azolla pinnata* R.Br., **H45** 622; *Azolla pinnata* R.Br. var. *imbricata* (Roxb. ex Groff.) Bonap., **P19** 445; small free-floating fern; abundant in pools and rice-paddies; widespread.

## 8. BLECHNACEAE

- 8.1.1 **Blechnum finlaysonianum** Wall. ex Hook. & Grev., **H45** 445, **P19** 339; terrestrial; in forest shade to 500 m; widespread.
- 8.1.2 **Blechnum fraseri** (A.Cunn.) Luerss., **H45** 635 incl. var. *philippinense* H. Christ, **P19** 406; terrestrial; upper montane forest; Gg Brinchang, Ph.
- 8.1.3 **Blechnum orientale** L., **H45** 446, **P19** 400; terrestrial; common in open sites; lowlands and mountains; widespread.
- 8.1.4 **Blechnum patersonii** (R.Br.) Mett., **H45** 635, **P19** 405; on wet rocks in montane forest; Gg Brinchang, Ph.
- 8.1.5 **Blechnum serrulatum** A. Rich., **P11**; *Blechnum indicum* auct. non Burm.f., **H45** 446, **P19** 4; terrestrial; open, wet places near the sea; widespread.
- 8.1.6 **Blechnum vestitum** (Blume) Kuhn, **H45** 449, **P19** 403; terrestrial; exposed mountain ridges and summits.
- 8.2.1 **Brainea insignis** (Hook.) J.Sm., **H45** 450, **P19** 409; cycad-like tree fern; Tg, Ph, Jh.
- 8.3.1 **Stenochlaena palustris** (Burm.f.) Bedd., **H45** 412, **P19** 410; commonly found climbing and scrambling at forest edges; widespread.

- 8.4.1 **Woodwardia auriculata** Blume, **H45** 450, **P19** 408; terrestrial; montane forest; Cameron Highlands, Ph.

## 9. CHEIROPLEURIACEAE

- 9.1.1 **Cheiropleuria bicuspis** (Blume) C. Presl, **H45** 136, **P19** 104; on shady, dryish rocks and banks; hills at 500–1500 m.

## 10. CYATHEACEAE

- 10.1.1 **Cyathea alleniae** Holttum, **FMu1** 109, **H49** 45; tree-fern to 4 m tall; disturbed montane forest at 1100–1200 m; Cameron Highlands, Ph; endemic.
- 10.1.2 **Cyathea alternans** (Wall. ex Hook.) C. Presl, **H45** 119, **FMu1** 145, **H49** 49, **P19** 92; tree-fern to 2 m tall; open forest in lowlands and hills to 1430 m; Kl, Tg, Pn, Pk, Ph, NS.
- 10.1.3 **Cyathea borneensis** Copel., **FMu1** 110, **H49** 45, **P19** 97; *Cyathea obtusata* Rosenst., **H43** 121; tree-fern to 5 m; in damp, shady forest at 100 m–1200 m; Pk, Ph, Sl.
- 10.1.4 **Cyathea contaminans** (Wall. ex Hook.) Copel., **H45** 119, **FMu1** 135, **H49** 49, **P17** 93; terrestrial; common at edges and clearings of hill forest up to 2000 m.
- 10.1.5 **Cyathea excavata** Holttum, **FMu1** 94, **H49** 46; tree-fern to 2 m; montane forest edges and clearings at 1170–1900 m; Cameron Highlands, Ph; endemic.
- 10.1.6 **Cyathea gigantea** (Wall. ex Hook.) Holttum, **H45** 128, **FMu1** 124, **H49** 48; terrestrial; open places to 350 m; P. Langkawi, Pn, Pk.
- 10.1.7 **Cyathea glabra** (Blume) Copel., **H45** 127, **FMu1** 120, **H49** 48, **P19** 102; tree-fern; in damp forest to 1700 m; Ps, Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 10.1.8 **Cyathea hymenodes** Mett., **FMu1** 89, **H49** 44, **P19** 96; *Cyathea latebrosa* (Wall. ex Hook.) Copel. var. *indusiata* Holttum, **H45** 121; tree-fern to 3.5 m; montane forest at 700–2200 m; Ph, Jh.
- 10.1.9 **Cyathea incisoserrata** Copel., **FMu1** 113, **H49** 46; tree-fern to 4 m; forest edges and clearings to 1400 m; Pn, Pk, Ph, Jh.
- 10.1.10 **Cyathea latebrosa** (Wall. ex Hook.) Copel., **H45** 120, **FMu1** 115, **H49** 47, **P17** 95; tree-fern to 3 m; open forest in lowlands and hills to 2000 m; widespread.

- 10.1.11 **Cyathea lurida** (Blume) Copel., **FMn1** 121, **H49** 47, **P19** 101; *Cyathea kingii* (C.B. Clarke) Copel., **H45** 126; terrestrial, often trunkless; montane forest at 1250–2220 m; Pk, Ph.
- 10.1.12 **Cyathea moluccana** R.Br., **FMn1** 143, **H49** 48, **P19** 91; *Cyathea brunonis* (J.Sm.) Wall. ex Hook., **H45** 117; trunk to 50 cm tall; common in secondary forest to 1300 m; Kd, Pl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 10.1.13 **Cyathea obscura** (Scort.) Copel., **H45** 124, **FMn1** 152, **H49** 50, **P19** 98; terrestrial; hill forest at 900–2000 m; Pn, Pk, Ph, Sl.
- 10.1.14 **Cyathea oosora** Holttum, **FMIII** 563; tree-fern; P. Tioman.
- 10.1.15 **Cyathea polypoda** Baker, **H45** 122, **FMn1** 151, **H49** 50; tree-fern to 3 m; on ridges in lower montane forest at 1100–1300 m; Pk, Jh.
- 10.1.16 **Cyathea recommitata** Copel., **H45** 125, **FMn1** 118, **H49** 47, **P19** 100; tree-fern about 3 m tall; in shaded montane forest at 600–1800 m; Pk, Ph, Sl, Jh.
- 10.1.17 **Cyathea squamulata** (Blume) Copel., **H45** 122, **FMn1** 152, **H49** 51; tree-fern to 2 m tall; in lowland forest to 300 m; Pn, Pk, Sl, Jh, Sp.
- 10.1.18 **Cyathea sumatrana** Baker, **FMn1** 91, **H49** 44; tree-fern; few collections; Sl.
- 10.1.19 **Cyathea trichodesma** (Scort.) Copel., **FMn1** 150, **H49** 50, **P19** 99; *Cyathea burbridgei* auct. non (Baker) Copel., **H45** 631; tree fern to 4.5 m; swampy, lowland forest to 430 m; Pk, Ph, Sl, NS.
- 10.1.20 **Cyathea tripinnata** Copel., **H45** 120, **FMn1** 140, **H49** 48; tree-fern up to 4–5 m; recorded at 270 m on P. Tioman.

## 11. DAVALLIACEAE

- 11.1.1 **Davallia angustata** Wall. ex Hook. & Grev., **N13** 173; *Humata angustata* (Wall. ex Hook. & Grev.) J.Sm., **H45** 367, **P19** 388; epiphyte and epilith; at higher altitudes in the north; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.
- 11.1.2 **Davallia corniculata** T. Moore, **H45** 359, **P19** 394, **N13** 177; epiphyte; hill and montane forest; Pn, Pk, Ph.
- 11.1.3 **Davallia denticulata** (Burm.f.) Mett. ex Kuhn, **H45** 359, **P19** 392, **N13** 178; common lowland epiphyte; up to 500 m; throughout.
- 11.1.4a **Davallia divaricata** Blume var. **dimorpha** (Holttum) Noot., **N13** 180; *Davallia dimorpha* Holttum, **H45** 362; epiphyte in montane forest; thrice from Cameron Highlands, Ph; endemic variety.
- 11.1.4b **Davallia divaricata** Blume var. **divaricata**, **H45** 362, **P19** 398, **N13** 180; epiphytic and epilithic; lower montane forest at 600–1200 m.

- 11.1.5 **Davallia heterophylla** J.Sm., **N13** 185; *Humata heterophylla* (J.Sm.) Desv., **H45** 366, **P19** 387; usually on rocks near the sea.
- 11.1.6 **Davallia hymenophylloides** (Blume) Kuhn, **N13** 186; *Araiostegia hymenophylloides* (Blume) Copel., **H45** 363, **P19** 386, **N12** 171; epiphyte or rock plant; montane forest at 600–1200 m; widespread.
- 11.1.7 **Davallia parvula** Wall. ex Hook. & Grev., **N13** 189; *Humata parvula* (Wall. ex Hook. & Grev.) Mett., **H45** 369; epiphyte; on old mangrove trees; Jh, Sp.
- 11.1.8 **Davallia pectinata** J.Sm., **N13** 189; *Humata pectinata* (J.Sm.) Desv., **H45** 369; on rocks and trees near the sea, limestone inland; P. Langkawi, Kl, Ph, Ml, Jh, Sp.
- 11.1.9 **Davallia repens** (L.f.) Kuhn, **N13** 192; *Humata repens* (L.f.) Diels, **H45** 371, **P19** 390; *Humata vestita* (Blume) T. Moore, **H45** 370, **P19** 389; on rocks and trees in lowland and montane forest; throughout.
- 11.1.10 **Davallia solida** (G. Forst.) Sw., **H45** 360, **P19** 395, **N13** 202; common on trees and rocks near the sea; up to 300 m; throughout.
- 11.1.11a **Davallia trichomanioides** Blume var. **lorrainii** (Hance) Holttum, **H45** 361, **P19** 397; on trees and rocks in montane forest; Kd, Pn, Sl, NS.
- 11.1.11b **Davallia trichomanioides** Blume var. **trichomanioides**, **H45** 361, **P19** 396, **N13** 206; on trees and rocks in montane forest.
- 11.1.12 **Davallia triphylla** Hook., **H45** 357, **P19** 391, **N13** 210; epiphyte in lowland forest; Tg, Pk, Sl, NS, Jh, Sp.
- 11.2.1 **Leucostegia immersa** (Wall. ex Hook.) C. Presl, **H45** 352, **N12** 185; epiphytic and terrestrial; once collected from Gg Tahan, Ph.
- 11.2.2 **Leucostegia pallida** (Mett.) Copel., **H45** 353, **P19** 385, **N12** 186; in light shade in hills and mountains; Pk.
12. DENNSTAEDTIACEAE
- 12.1.1 **Dennstaedtia ampla** (Baker) Bedd., **H45** 304, **P19** 234; under forest shade in hills and mountains; Pk, Ph.
- 12.2.1 **Histiopteris incisa** (Thunb.) J.Sm., **H45** 391, **P19** 246; terrestrial; lowlands and uplands; widespread.
- 12.2.2 **Histiopteris stipulacea** (Hook.) Copel., **H45** 391, **P19** 247; terrestrial; forest edges in the mountains at about 1500 m.

- 12.3.1 **Hypolepis brooksiae** Alderw., **H45** 317, **B36** 235, **P19** 240; a prickly scrambling fern; mountain clearings at 1050–1500 m; Pk, Ph.
- 12.3.2 **Hypolepis pallida** (Blume) Hook., **B36** 269; *Hypolepis punctata sensu* Bedd., **H45** 318 in part; *Hypolepis beddomei* Nair & Ghosh, **P19** 241; scrambling fern; grassy gaps in hill forest at 1050–1550 m; Pk, Sl.
- 12.3.3 **Hypolepis polypodioides** (Blume) Hook., **B36** 243; once collected on Gg Ulu Kali, Ph.
- 12.3.4 **Hypolepis punctata** (Thunb.) Mett. ex Kuhn, **H45** 318 in part, **B36** 250; edges of montane forest at 1050–1440 m; Gg Hijau, Pk, & Cameron Highlands, Ph.
- 12.3.5 **Hypolepis scabristipes** Brownsey, **B36** 238; scrambler of mountain forest edges; Gg Ulu Kali and Gg Batu Brinchang, Ph.
- 12.4.1 **Lindsaea borneensis** Hook. ex Baker, **H45** 331, **FMu1** 225; in lowland forests to 700 m, often on rocks
- 12.4.2 **Lindsaea bouillodii** H. Christ, **FMu1** 204, **P19** 266; *Schizoloma tenerum sensu* Holttum, **H43** 348; floors of damp montane forests at 300–1400 m.
- 12.4.3 **Lindsaea cultrata** (Willd.) Sw., **FMu1** 222; *Lindsaea decomposita* Willd., **H45** 333, **P19** 260; under forest shade to 1300 m.
- 12.4.4 **Lindsaea divergens** Hook. & Grev., **FMu1** 233; *Isoloma divergens* (Hook. & Grev.) J.Sm., **H45** 337; under forest shade to 800 m.
- 12.4.5 **Lindsaea doryophora** K.U. Kramer, **FMu1** 227, **P19** 254; *Lindsaea scandens* Hook. var. *terrestris* Holttum, *nom. inval.*, **H45** 327; in forests to 1300 m.
- 12.4.6a **Lindsaea ensifolia** Sw. ssp. *coriacea* (Alderw.) K.U. Kramer, **FMu1** 212; **P19** 265 in part; *Schizoloma ensifolium* (Sw.) J.Sm., **H43** 346 in part; acidic swamp forests; Jh, Sp.
- 12.4.6b **Lindsaea ensifolia** Sw. ssp. *ensifolia*, **FMu1** 212; **P19** 265 in part; *Schizoloma ensifolium* (Sw.) J.Sm., **H45** 346 in part; open places in lowlands and hills to 1000 m.
- 12.4.7 **Lindsaea heterophylla** Dryand., **FMu1** 210, **P19** 264; *Schizoloma heterophyllum* (Dryand.) J.Sm., **H45** 345; open or slightly shaded places to 1100 m.
- 12.4.8 **Lindsaea integra** Holttum, **FMu1** 223; *Lindsaea nitida auct. non* Copel., **H45** 333; on rocks by streams in forest at 100–1200 m; Pk, Ph, Sl, Ml.
- 12.4.9 **Lindsaea javanensis** Blume, **FMu1** 208; *Schizoloma javanense* (Blume) Holttum, **H45** 349; in forests to 1400 m.



- 12.4.10 **Lindsaea lobata** Poir., **FMu1** 219; a few doubtful collections.
- 12.4.11 **Lindsaea lucida** Blume, **H45** 328, **FMu1** 233, **P19** 255; shaded stream banks in lowlands and hills to 1600 m.
- 12.4.12 **Lindsaea malayensis** Holttum, **H45** 335, **FMu1** 217, **P19** 262; terrestrial in shady montane forests at 1200–2000 m; Pk, Ph.
- 12.4.13 **Lindsaea napaea** Alderw., **H45** 330, **FMu1** 217, **P19** 258; on the ground and rocks in lower montane forest at 1000–1300 m; Kd, Kl, Pn, Pk, Ph, Sl, Ml.
- 12.4.14 **Lindsaea oblanceolata** Alderw., **FMu1** 236, **P19** 252; *Lindsaea pectinata* auct. non Blume, **H43** 324; usually climbing on tree trunks in hill forest at 800–1800 m.
- 12.4.15 **Lindsaea obtusa** J.Sm. ex Hook., **FMu1** 218; *Lindsaea davallioides* auct. non Blume, **H45** 332; terrestrial; lowland forest to 1500 m.
- 12.4.16 **Lindsaea odorata** Roxb., **FMu1** 228, **P19** 256; *Lindsaea cultrata* auct. non (Willd.) Sw., **H45** 328; on banks and rocks; commoner in the mountains, to 2000 m; Pk, Ph.
- 12.4.17a **Lindsaea orbiculata** (Lam.) Mett. ex Kuhn var. **commixta** (Tagawa) K.U. Kramer, **FMu1** 207; *Schizoloma orbiculatum* (Lam.) Kuhn, **H45** 344 in part; *Lindsaea orbiculata* (Lam.) Mett. ex Kuhn, **P19** 263 in part; usually on rocks near the sea, sometimes inland to 500 m.
- 12.4.17b **Lindsaea orbiculata** (Lam.) Mett. ex Kuhn var. **orbiculata**, **FMu1** 206; *Schizoloma orbiculatum* (Lam.) Kuhn, **H45** 344 in part; *Lindsaea orbiculata* (Lam.) Mett. ex Kuhn, **P19** 263 in part; usually on rocks near the sea, sometimes inland to 500 m.
- 12.4.18 **Lindsaea ovata** J.Sm., **FMu1** 231; *Isoloma ovatum* (J.Sm.) C. Presl, **H45** 338; terrestrial and epilithic to 1000 m.
- 12.4.19 **Lindsaea parallelogramma** Alderw., **H45** 335, **FMu1** 220, **P19** 261; understory of hill forests to 1200 m.
- 12.4.20 **Lindsaea parastica** (Roxb. ex Griff.) Hieron., **FMu1** 244; *Lindsaea scandens* Hook., **H45** 325, **P19** 253; epiphyte, occasionally terrestrial; forests to 1100 m.
- 12.4.21 **Lindsaea repens** (Bory) Thwaites var. **pectinata** (Blume) Mett. ex Kuhn, **FMu1** 239; *Lindsaea macraeana* (Hook. & Arn.) Copel., **H45** 324; *Lindsaea repens* (Bory) Thwaites, **P19** 251; forest epiphyte; mostly 600–1500 m.
- 12.4.22 **Lindsaea rigida** J.Sm. ex Hook., **H45** 330, **FMu1** 245, **P19** 257; on trees, rocks or the ground in montane forest at 1000–2000 m.

- 12.4.23 **Lindsaea walkerae** Hook., **FMu1** 229; *Schizoloma walkerae* (Hook.) Kuhn, **H45** 344; moist open places, swamps & streamsides; lowlands and hills to 1200 m.
- 12.5.1 **Microlepia puberula** Alderw., **H45** 312; three collections from lowland forest; Pk, Ph, Sl.
- 12.5.2 **Microlepia ridleyi** Copel., **H45** 313; lowland forest near streams; Pk, Ph, Sl.
- 12.5.3a **Microlepia speluncae** (L.) T. Moore var. **hancei** (Prantl) C.Chr. & Tardieu, **H45** 315, **P19** 237; grassy places in the lowlands.
- 12.5.3b **Microlepia speluncae** (L.) T. Moore var. **villosissima** C.Chr., **H45** 315, **P19** 238; lowlands including on limestone.
- 12.5.4 **Microlepia strigosa** (Thunb.) C. Presl, **H45** 310; in forest; Pk, P. Langkawi.
- 12.5.5 **Microlepia todayensis** H. Christ, **H45** 310, **P19** 235; upper montane forest; Pk, Ph.
- 12.5.6 **Microlepia trapeziformis** (Roxb.) Kuhn, **H45** 313, **P19** 236; rocky stream beds at about 1500 m; Cameron Highlands, Ph.
- 12.6.1a **Odontosoria chinensis** (L.) J. Sm. var. **chinensis**, **P12** 151; *Sphenomeris chinensis* (L.) Maxon var. *chinensis*, **FMu1** 183, **P19** 248; terrestrial and on rocks in open places; commonest at 800–1500 m.
- 12.6.1b **Odontosoria chinensis** (L.) J. Sm. var. **divaricata** H. Christ, **P11**; *Sphenomeris chusana* (L.) Copel. var. *tenuifolia* (Sw.) C.Chr., **H45** 341; *Sphenomeris chinensis* (L.) Maxon var. *divaricata* (H. Christ) K.U. Kramer, **FMu1** 183, **P19** 248; open places in lowlands and mountains, mostly above 700 m.
- 12.6.1c **Odontosoria chinensis** (L.) J. Sm. var. **rheophila** (K.U. Kramer) Parris ined., **P11**; *Sphenomeris chinensis* (L.) Maxon var. *rheophila* K.U. Kramer, **FMu1** 183; by torrents and waterfalls at 100–500 m; Pn.
- 12.7.1 **Paesia elmeri** Copel., **P19** 242; *Hypolepis bivalvis* Alderw., **H45** 318; sticky fern of quartz ridges on mountains; Fraser's Hill and Gg Tahan, Ph.
- 12.8.1 **Pteridium aquilinum** (L.) Kuhn var. **wightianum** (J. Agardh) R.M. Tryon, **P19** 243; *Pteridium aquilinum* (L.) Kuhn, **H45** 389; forming thickets in the mountains.
- 12.8.2 **Pteridium esculentum** (G. Forst.) Cockayne, **H45** 390, **P11**; *Pteridium caudatum* (L.) Maxon ssp. *yarrabense* (Domin) Parris, **P17** 245; commonly forming thickets in the lowlands.

12.9.1 **Saccoloma kingii** (Bedd.) Parris, **P12** 151; *Orthiopteris kingii* (Bedd.) Holttum, **H45** 306, **P19** 239; near shaded streams in the mountains at about 1000 m; Pk, Ph.

12.10.1 **Tapeinidium biserratum** (Blume) Alderw., **FMu1** 194, **P11**; terrestrial.

12.10.2 **Tapeinidium luzonicum** (Hook.) K.U. Kramer, **FMu1** 193, **P19** 250; *Tapeinidium biserratum* auct. non (Blume) Alderw., **H45** 339; steep rocky slopes by shady streams in the hills at 600–1500 m.

12.10.3 **Tapeinidium pinnatum** (Cav.) C.Chr., **H45** 339, **FMu1** 193, **P19** 249; in shady forests, often on rocks by streams; commonest at 500–1000 m.

### 13. DICKSONIACEAE

13.1.1 **Cibotium barometz** (L.) J.Sm., **H45** 114, **FMu1** 165, **P19** 90; openings in forest; lowlands to mountains at 1600 m.

### 14. DIPTERIDACEAE

14.1.1 **Dipteris conjugata** Reinw., **H45** 135, **P19** 103; terrestrial; common in clearings in the mountains, occasional lower down; usually at 300–1500 m.

14.1.2a **Dipteris lobbiana** (Hook.) T. Moore var. **binervis** Ridl., **H45** 135; rheophyte; Sg Teku on Gg Tahan, Ph; endemic variety.

14.1.2b **Dipteris lobbiana** (Hook.) T. Moore var. **lobbiana**, **H45** 133; rheophyte; lowlands and hills to 1000 m.

14.1.3 **Dipteris novoguineensis** Posth., **H45** 136; on exposed mountain ridges; collected once at about 2000 m on Gg Tahan, Ph.

### 15. DRYOPTERIDACEAE

15.1.1 **Acrophorus nodosus** C. Presl, **P19** 318; *Acrophorus blumei* Ching, **H45** 481; high mountain summit forests.

15.2.1 **Arachniodes aristata** (G. Forst.) Tindale, **H45** 635; *Polystichopsis aristata* (G. Forst.) Holttum, **H45** 486; rocky banks of Sg Tahan, Ph at about 150 m.

15.2.2 **Arachniodes chinensis** (Rosenst.) Ching, **H45** 635, **T03** 344; *Polystichopsis chinensis* (Rosenst.) Holttum, **H45** 486; collected once near a stream at about 1000 m; Cameron Highlands, Ph.

- 15.2.3 **Arachniodes haniffii** (Holttum) Ching, **H45** 635, **P19** 323; *Polystichopsis haniffii* (Holttum) Holttum, **H45** 485; forested valleys at high altitudes; endemic.
- 15.2.4 **Arachniodes puncticulata** (Alderw.) Ching, **H45** 635; *Polystichopsis puncticulata* (Alderw.) Holttum, **H45** 487; mountain tops at 1500–2000 m; Pk, Ph.
- 15.3.1 **Ctenitis subobscura** (H. Christ) Holttum, **FMu2** 31; *Ctenitis manii auct. non* (Hope) Ching, **H45** 497; on rocks and banks in forests.
- 15.3.2 **Ctenitis vilis** (Kunze) Ching, **H45** 496, **P19** 327, **FMu2** 30; near forest streams in lowlands and hills.
- 15.4.1 **Cyclopeltis crenata** (Fée) C.Chr., **H45** 527, **P19** 328, **FMu2** 117; on rocks, usually limestone, in forest.
- 15.5.1 **Didymochlaena trunculata** (Sw.) J.Sm., **H45** 483, **P19** 325; montane forests.
- 15.6.1 **Dryopteris integriloba** C.Chr., **P19** 321; terrestrial; known from one rock outcrop in NS.
- 15.6.2 **Dryopteris hasseltii** (Blume) C. Chr., **F19** 436; *Polystichopsis hasseltii* (Blume) Holttum, **H45** 487; *Arachniodes hasseltii* (Blume) Ching, **H45** 635, **P19** 324; in forest at mid-elevations; Pk, Ph, Jh.
- 15.6.3 **Dryopteris hirtipes** (Blume) Kunze, **H45** 635, **F19** 332; terrestrial; montane forest and its margins; Cameron Highlands, Ph.
- 15.6.4 **Dryopteris polita** Rosenstock, **H45** 492, **P19** 321; terrestrial; rare in montane forest; Cameron Highlands, Ph.
- 15.6.5 **Dryopteris sparsa** (Buch.-Ham. ex D.Don) Kuntze, **H45** 492, **P19** 320, **F17** 438; terrestrial; understorey of lower montane forest; Maxwell Hill, Pk, Fraser's Hill & Cameron Highlands, Ph.
- 15.6.6 **Dryopteris subarborea** (Baker) C.Chr., **H45** 491, **P19** 319; terrestrial or epiphytic in montane forest; Cameron Highlands, Ph.
- 15.7.1 **Heterogonium alderwereltii** Holttum, **H45** 522, **C13** 210, **FMu2** 112; terrestrial; on limestone; north of Malaya.
- 15.7.2 **Heterogonium giganteum** (Blume) Holttum, **FMu2** 114; *Heterogonium saxicola* (Blume) Holttum, **H45** 525, **P19** 337; terrestrial; shady valleys in hills to 1000 m.
- 15.7.3 **Heterogonium pinnatum** (Copel.) Holttum, **H45** 524, **C13** 210, **P19** 336, **FMI2** 115; terrestrial; mostly on limestone; north of Malaya.

- 15.7.4 **Heterogonium sagenioides** (Mett.) Holttum, **H45** 520, **P19** 334, **FMn2** 108; terrestrial; lowland forest to 800 m.  
Piggott [**P19** 335] included a record of *Heterogonium wigmanii* (Racib.) Holttum [**FMn2** 109] in her account. B.S. Parris (*pers. comm.*) has been unable to find any material to confirm its occurrence well outside its known range.
- 15.8.1 **Peranema aspidioides** (Blume) Mett., **P12** 151; *Diacalpe aspidioides* Blume, **H45** 481, **P19** 317; exposed, wet places near mountain tops.
- 15.9.1 **Pleocnemia conjugata** (Blume) C. Presl, **P19** 330, **FMn2** 16; terrestrial; lightly shaded places in the lowlands; north of the Peninsula.
- 15.9.2 **Pleocnemia hemiteliiformis** (Racib.) Holttum, **P19** 331, **FMn2** 17; terrestrial; open places in forests at 800–1400 m.
- 15.9.3 **Pleocnemia irregularis** (C. Presl) Holttum, **P19** 333, **FMn2** 12; *Arcypteris irregularis* (C. Presl) Ching, **H45** 538; terrestrial; common in lightly shaded areas.
- 15.9.4 **Pleocnemia olivacea** (Copel.) Holttum, **P19** 331, **FMn2** 19; terrestrial; rocky places in lowland forest.
- 15.10.1 **Polystichum lindsaeifolium** Scort. ex Ridl., **H45** 489, **C13** 213; terrestrial; limestone hills; Kl, Ph, Sl.
- 15.10.2 **Polystichum prolificans** Alderw., **H45** 490; on rocks in shady valleys in the hills.
- 15.11.1 **Pteridrys acutissima** Ching, **H45** 531, **FMn2** 7; poorly known species; Pk.
- 15.11.2 **Pteridrys australis** Ching, **H45** 532, **P19** 329, **FMn2** 7; on rocks near partially shaded streams to 900 m; Sl.
- 15.11.3 **Pteridrys syrmatica** (Willd.) C.Chr. & Ching, **H45** 530, **C13** 213, **FMn2** 5; shaded places; on limestone; in the north.
- 15.12.1 **Tectaria angulata** (Willd.) C.Chr., **H45** 511, **P19** 343, **FMn2** 85; on rocks near forest streams.
- 15.12.2 **Tectaria barberi** (Hook.) Copel., **H45** 508, **P19** 340, **FMn2** 52; terrestrial; wet shady places in lowland forests.
- 15.12.3 **Tectaria brachiata** (Zoll. & Moritzi) C.V. Morton, **FMn2** 70; *Tectaria variolosa sensu* Holttum, **H45** 506 in part; rocky places in north.
- 15.12.4 **Tectaria cherasica** Holttum, **FMn2** 71; known only from type, on limestone, Bt Cheras, Ph; endemic.

- 15.12.5 **Tectaria coadunata** (J.Sm.) C.Chr. var **minor** Holttum, **P19** 338, **FMu2** 59; *Tectaria macrodonta* auct. non (Fée) C.Chr., **H45** 505; on limestone; Ps, P. Langkawi; endemic variety.
- 15.12.6 **Tectaria crenata** Cav., **H45** 510, **FMu2** 80; terrestrial; lowland and hill forest; widespread.
- 15.12.7a **Tectaria curtisii** Holttum var. **curtisii**, **FMu2** 70; on limestone; near Ipoh, Pk; endemic.
- 15.12.7b **Tectaria curtisii** Holttum var. **hendersonii** Holttum, **FMu2** 71; Gg Senyum, Ph, endemic.
- 15.12.8 **Tectaria decurrens** (C. Presl) Copel., **H45** 635, **FMu2** 90; terrestrial; lowland and hill forest; Pk.
- 15.12.9 **Tectaria devexa** (Kunze) Copel., **H45** 505, **C13** 214, **FMu2** 57; on limestone.
- 15.12.10 **Tectaria fauriei** Tagawa, **FMu2** 77; rheophyte; Ph.
- 15.12.11 **Tectaria fissa** (Kunze) Holttum, **FMu2** 87; *Tectaria polymorpha* (Wall. ex Hook.) Copel. var. *cuneifolia* Bonap., **H45** 518; *Tectaria rumicifolia* (Ridl.) C.Chr., **H45** 519; *Tectaria oligophylla* (Rosenst.) C.Chr., **P19** 352; terrestrial; forest to 1200 m.
- 15.12.12 **Tectaria grandidentata** (Ces.) Holttum, **H45** 514, **P19** 348, **FMu2** 92; on rocks in forest.
- 15.12.13a **Tectaria griffithii** (Baker) C.Chr. var. **griffithii**, **P19** 339, **FMu2** 54; *Tectaria multicaudata* (C.B. Clarke) Ching, **H45** 507 in part; terrestrial; lowland forest.
- 15.12.13b **Tectaria griffithii** (Baker) C.Chr. var. **singaporeana** Holttum, **FMu2** 55; *Tectaria multicaudata* (C.B. Clarke) Ching, **H45** 507 in part; terrestrial; lowland forest; Bukit Timah, Sp; endemic variety.
- 15.12.14 **Tectaria herpetocaulos** Holttum, **H45** 636, **FMu2** 89; on humus covered rocks at 600 m; off road to the Cameron Highlands, Ph.
- 15.12.15 **Tectaria impressa** (Fée) Holttum, **FMu2** 51; *Tectaria variolosa* (Hook.) C.Chr., **H45** 506 in part; limestone forest; P. Langkawi.
- 15.12.16 **Tectaria keckii** (Luersson) C.Chr., **P19** 349, **FMu2** 72; *Tectaria amplifolia* (Alderw.) C.Chr., **H45** 515, **C13** 214; shady places on limestone; north of Malaya.
- 15.12.17a **Tectaria manilensis** (C. Presl) Holttum var. **chupengensis** (Ridl.) Holttum, **FMu2** 45; *Lastreopsis parishii* (Hook.) Ching var. *chupengensis* (Ridl.) Holttum, **H45** 498; on limestone; Chupeng, Ps; endemic variety.

- 15.12.17b **Tectaria manilensis** (C. Presl) Holttum var. **manilensis**, **FMII2** 45; *Lastreopsis parishii* (Hook.) Ching var. *parishii*, **H45** 498; on limestone; Ps, P. Langkawi.
- 15.12.18 **Tectaria melanocaula** (Blume) Copel., **H45** 636, **P19** 350, **FMII2** 66; terrestrial; lower montane forest at about 1000 m; Cameron Highlands, Ph.
- 15.12.19 **Tectaria semibipinnata** (Wall. ex Hook.) Copel., **H45** 515, **FMII2** 73; terrestrial; muddy river banks in the tidal zone.
- 15.12.20 **Tectaria semipinnata** (Roxb.) C.V. Morton, **P19** 347, **FMII2** 78; *Tectaria maingayi* (Baker) C.Chr., **H45** 509; terrestrial; lowland forest.
- 15.12.21 **Tectaria setulosa** (Baker) Holttum, **FMII2** 47; *Tectaria ingens sensu* Holttum, **H45** 503; wet ground under wild bananas at 1850 m; Ph.
- 15.12.22 **Tectaria siifolia** (Willd.) Copel., **FMII2** 84; *Tectaria ternifolia* (Alderw.) C.Chr., **H45** 516; limestone; Pk, Ph.
- 15.12.23 **Tectaria simonsii** (Baker) Ching, **P19** 351, **FMII2** 67; terrestrial; rocky places and steep slopes in hill forest at 600–900 m; Main Range.
- 15.12.24 **Tectaria singaporeana** (Hook. & Grev.) Copel., **H45** 512, **P19** 345, **FMII2** 100; terrestrial; lowland forest.
- 15.12.25 **Tectaria translucens** Holttum, **FMII2** 71; limestone crevices and forest nearby; Ph; endemic.
- 15.12.26 **Tectaria tricuspis** (Bedd.) Copel., **FMII2** 91; terrestrial; lowland forest; Pk.
- 15.12.27 **Tectaria vasta** (Blume) Copel., **H45** 512, **P19** 346, **FMII2** 92; terrestrial; lowland and hill forest and plantations.
- 15.12.28 **Tectaria zeilanica** (Houtt.) Sledge, **FMII2** 75; *Quercifilix zeilanica* (Houtt.) Copel., **H45** 528, **P19** 353 ‘*zeylanica*’; terrestrial; earth banks and streamsides in shade; P. Tioman.

## 16. GLEICHENIACEAE

- 16.1.1 **Dicranopteris curranii** Copel., **FMII1** 31, **P19** 59; *Gleichenia linearis* (Burm.f.) C.B. Clarke var. *malayana* Alderw., **H45** 68; thicket-forming terrestrial fern; lowlands and hills to 1500 m; widespread.
- 16.1.2a **Dicranopteris linearis** (Burm.f.) Underw. var. **alternans** (Mett.) Holttum, **FMII1** 36; *Gleichenia linearis* (Burm.f.) C.B. Clarke var. *irregularis* Alderw., **H45** 68; thicket-forming terrestrial; lowlands to 500 m.

- 16.1.2b **Dicranopteris linearis** (Burm.f.) Underw. var. **altissima** (Holttum) Holttum, **FMu1** 36, **H45** 630; *Gleichenia linearis* (Burm.f.) C.B. Clarke var. *altissima* Holttum, **H45** 69; thicket-forming fern; edge of lowland forests.
- 16.1.2c **Dicranopteris linearis** (Burm.f.) Underw. var. **inaeqaulis** (Rosenst.) Holttum, **FMu1** 36, **H45** 631, **P19** 631; thicket-forming fern; mountains at about 1400 m; Cameron highlands, Ph.
- 16.1.2d **Dicranopteris linearis** (Burm.f.) Underw. var. **linearis**, **FMu1** 3, **P19** 54; *Gleichenia linearis* (Burm.f.) C.B. Clarke var. *normalis sensu* Holttum, **H45** 70; very common thicket former; lowlands and mountains to 1400 m; throughout.
- 16.1.2e **Dicranopteris linearis** (Burm.f.) Underw. var. **montana** (Holttum) Holttum, **FMu1** 36, **H45** 630, **P19** 53; *Gleichenia linearis* (Burm.f.) C.B. Clarke var. *montana* Holttum, **H43** 69; thicket-forming fern; edge of montane forests at 400–1600 m.
- 16.1.2f **Dicranopteris linearis** (Burm.f.) Underw. var. **subpectinata** (H. Christ) Holttum, **FMu1** 35, **P19** 55; *Gleichenia linearis* (Burm.f.) C.B. Clarke var. *alternans auct. non* Mett., **H45** 68; forming thickets; lowlands to 700 m.
- 16.1.2g **Dicranopteris linearis** (Burm.f.) Underw. var. **subspeciosa** Holttum, **H45** 631, **FMu1** 35, **P19** 57; thicket-former at forest margins; lowlands and hills to 1400 m.
- 16.1.3 **Dicranopteris pubigera** (Blume) Nakai, **FMu1** 32, **H45** 630, **P19** 61; terrestrial; mountain tops; Cameron and Genting Highlands, Ph.
- 16.1.4 **Dicranopteris speciosa** (C. Presl) Holttum, **FMu1** 32, **H45** 631, **P19** 60; *Gleichenia opposita* Alderw., **H45** 70; thicket-forming fern; forest edges at 100–600 m.
- 16.2.1 **Diplopterygium blotianum** (C. Chr.) Nakai, **P11**; *Gleichenia norrisii auct. non* Mett., **H45** 67 in the minor part; *Gleichenia blotiana* C. Chr., **FMu1** 17, **P19** 50; terrestrial; edge of montane forest at about 1500 m; Cameron Highlands, Ph.
- 16.2.2 **Diplopterygium giganteum** (Wall. ex Hook.) Nakai, **P11**; *Gleichenia gigantea* Wall. ex Hook., **FMu1** 561; *Gleichenia volubilis* Jungh. var. *peninsularis* Holttum, **FMu1** 13, **H45** 630; terrestrial; once collected on Gg Bintang, Kd.
- 16.2.3 **Diplopterygium longissimum** (Blume) Nakai, **P11**; *Gleichenia longissima* Blume, **FMu1** 13, **H45** 67, **P19** 48; thicket-forming terrestrial; hills and mountains.



- 16.2.4 **Diplopterygium norrisii** (Mett.) Nakai, **P12** 59; *Gleichenia norrisii* Mett., **H45** 67 in part, **FMu1** 15; terrestrial; clearings and forest margins at 650–1250 m; Kd, Pn, Pk, Ph, Jh.
- 16.2.5 **Diplopterygium sordidum** (Copel.) Parris *ined.*, **P11**; *Gleichenia sordida* Copel., **FMu1** 15, **H45** 630; terrestrial; edge of montane forest; once collected at Fraser's Hill, Ph.
- 16.3.1 **Gleichenia dicarpa** R. Br., **FMu1** 9, **P11**; terrestrial.
- 16.3.2 **Gleichenia microphylla** R. Br., **FMu1** 7, **P19** 46; *Gleichenia microphylla* R.Br. var. *semivestita* (Labill.) Alderw., **H45** 65; terrestrial; exposed mountain ridges and summits at 750–1800 m; Kd, Pk, Jh.
- 16.3.3 **Gleichenia vulcanica** Blume, **FMu1** 9, **H45** 630, **P19** 47; *Gleichenia microphylla* R.Br. var. *vulcanica* (Blume) Holttum, **H45** 66; terrestrial; mountain tops; Pk, Ph, Sl.
- 16.4.1 **Sticherus hirtus** (Blume) Ching var. **amoenus** (Alderw.) Parris *ined.*, **P11**; *Gleichenia hirta* Blume var. *amoena* (Alderw.) Holttum, **FMu1** 26, **P19** 52; *Gleichenia hirta* Blume, **H45** 71; terrestrial; edge of forest or lightly shaded places at 700–1600 m.
- 16.4.2a **Sticherus truncatus** (Willd.) Nakai var. **plumaeformis** (C. Presl) Parris *ined.*, **P11**; *Gleichenia truncata* (Willd.) Spreng. var. *plumaeformis* (C. Presl) Holttum, **FMu1** 21, **P19** 52; terrestrial; open places on mountains at 1200–1800 m.
- 16.4.2b **Sticherus truncatus** (Willd.) Nakai var. **truncatus**, **P11**; *Gleichenia truncata* (Willd.) Spreng. var. *truncata*, **FMu1** 20, **P19** 51; *Gleichenia laevigata* (Willd.) Hook., **H45** 71; thicket-forming fern; forest margins to 1600 m; widespread.

## 17. GRAMMITIDACEAE

- 17.1.1 **Acrosorus friderici-et-pauli** (H. Christ) Copel., **P11**; *Acrosorus triangularis* Copel., **H43** 222, **P07** 508; on rocks and trees; montane forest at 1350–1600 m; Pk, Ph.
- 17.1.2 **Acrosorus streptophyllus** (Baker) Copel., **H45** 222, **P09** 508, **P19** 165; on tree trunks and the undersides of branches; lower montane forest at 1100–1500 m; Pk, Ph.
- 17.2.1 **Calymmodon asiaticus** Copel., **P09** 506; *Calymmodon cucullatus auct. non* (Nees & Blume) C. Presl, **H45** 220 in part; near streams in hill forest at 800–1000 m; Pk.
- 17.2.2 **Calymmodon cucullatus** (Nees & Blume) C. Presl, **P09** 507; once collected in mountains of Pk.

- 17.2.3 **Calymmodon curtus** Parris, **P09** 506, **P19** 164, **P10** 125; *Calymmodon cucullatus auct. non* (Nees & Blume) C. Presl, **H45** 220 in part; on mossy trees in the mountains at 900–1850 m; Pk, Ph, Sl.
- 17.2.4 **Calymmodon gracilis** (Fée) Copel., **H45** 221, **P09** 506, **P19** 165; on mossy tree trunks at 1050–1850 m; Pk, Ph, Sl.
- 17.3.1 **Ctenopteris blechnoides** (Grev.) W.H. Wagner & Grether, **P09** 494; *Ctenopteris moultonii* (Copel.) C.Chr. & Tardieu, **H45** 229; epiphytic; mangroves, lowland and montane forest to 1000 m; Kd, Pn, Pk, Ph, NS, Ml, Jh.
- 17.3.2 **Ctenopteris brevivenosa** (Alderw.) Holttum, **H45** 228, **P09** 496, **P19** 169; on mossy tree trunks; lower montane forest at 1200–1700 m; Pk, Ph, Sl.
- 17.3.3 **Ctenopteris fuscata** (Blume) Kunze, **H45** 227, **P09** 496, **P19** 168; on mossy tree trunks; mountains at 1400–1800 m; Pk, Ph, Sl.
- 17.3.4 **Ctenopteris inconspicua** (Blume) Copel., **P09** 495; epiphyte; mountain forest ridge; once collected on Fraser's Hill, Ph.
- 17.3.5 **Ctenopteris malayana** Parris, **P09** 494, **P10** 53; on mossy trees; montane forest at 1500–1800 m; Gg Ulu Kali, Sl; endemic.
- 17.3.6 **Ctenopteris minuta** (Blume) Holttum, **H45** 228, **P09** 495; epiphytic; hill forest at 650–1000 m; Pn, Sl, Ml.
- 17.3.7 **Ctenopteris mollicoma** (Nees & Blume) Kunze, **H45** 226, **P09** 497, **P19** 167; epiphyte; mountain ridges at 1500–1850 m; Ph, Sl, Ml.
- 17.3.8 **Ctenopteris nutans** (Blume) J. Sm., **P09** 497; epiphyte; montane forest at about 1700 m; once collected on Gg Batu Brinchang, Ph.
- 17.3.9 **Ctenopteris subminuta** (Alderw.) Holttum, **H45** 228, **P09** 495, **P19** 170; epiphyte; mossy forest at 1200–1400 m; Pk, Ph.
- 17.3.10 **Ctenopteris tenuisecta** (Blume) J.Sm., **H45** 226, **P09** 493, **P19** 166; epiphyte; montane forest at 1350–1750 m; Pk, Ph, Sl.
- 17.4.1 **Grammitis adpersa** (Blume) Blume, **H45** 214, **P09** 509; epiphyte on tree trunks; hill forest at 500–1200 m; Tg, Pn, Pk, NS, Ml, Jh.
- 17.4.2 **Grammitis congener** Blume, **P09** 511; *Grammitis hirtella auct. non* (Blume) Tuyama, **H45** 216 in part; epiphyte; low forest on montane ridges at 1370–1830 m; Pk, Ph, Sl.
- 17.4.3 **Grammitis crispatula** Holttum, **H45** 218, **P09** 512; on mossy rocks; hill forest at 700–1000 m; Taiping Hills, Pk.

- 17.4.4 **Grammitis holttumii** Copel., **H45** 216, **P09** 512; on trees near streams; montane forest at 1200–1460 m; Cameron Highlands and Fraser's Hill, Ph.
- 17.4.5 **Grammitis jeraiensis** Parris, **P10** 29; terrestrial; montane forest at 760–1200 m; Gg Jerai, Kd; endemic.
- 17.4.6 **Grammitis maxwellii** (Baker) Parris, **P08** 118, **P11**; epiphyte.
- 17.4.7 **Grammitis multifolia** Copel., **P11**; *Grammitis hirtella* auct. non (Blume) Tuyama, **H45** 216 in part; *Grammitis lasiosora* (Blume) Ching, **P09** 512; on mossy tree trunks; montane forest at 1350–1800 m; Pn, Tg, Pk, Ph, Sl.
- 17.4.8 **Grammitis peninsularis** Copel., **H45** 217, **P09** 513; on mossy tree trunks; montane forest at 900–1500 m; Gg Tahan, Ph, Gg Ledang & Gg Belumut, Jh; endemic.
- 17.4.9 **Grammitis pseudoxiphopteris** Parris, **P10** 25; epiphyte; montane forest at about 1000 m; once from Gg Belumut, Jh; endemic.
- 17.4.10 **Grammitis reinwardtii** Blume, **H45** 215, **P09** 511, **P19** 160; on mossy trees; montane forest at 1500–2000 m; Pk, Ph, Sl.
- 17.4.11 **Grammitis rivularis** Parris, **P09** 514, **P10** 17; on rocks; lowland forest; once collected at Sg Kemas, Pk.
- 17.4.12 **Grammitis universa** (Baker) Copel., **H45** 215, **P09** 514; rheophyte; lowlands at 150–600 m; Pn, Pk, Ph; endemic.
- 17.4.13 **Grammitis vittariifolia** (C. Chr.) Parris, **P09** 510, **P10** 13; epiphyte; lowland forest; once collected on Gg Pulai, Jh.
- 17.4.14 **Grammitis** sp. 9, **P11**; epiphyte; Gg Belumut, Jh; endemic.
- 17.4.15 **Grammitis** sp. 10, **P11**; epiphyte; Gg Ledang, Ml; endemic.
- 17.5.1 **Prosaptia alata** (Blume) H. Christ, **T04** 593; *Ctenopteris alata* (Blume) Holttum, **H43** 232, **P07** 500, **P17** 173; on trees or fallen logs near streams; hill forest at 750–1300 m; Pn, Pk, Ph, Sl, NS, Jh.
- 17.5.2 **Prosaptia barathrophylla** (Baker) M.G. Price, **P09**; *Ctenopteris khasyana* auct. non (Hook.) Copel., **H45** 223, **P19** 174; *Ctenopteris barathrophylla* (Baker) Parris, **P09** 494, **P10** 81; epiphyte; hill forest at 600–1300 m; Pk, Ph, Sl, NS.
- 17.5.3 **Prosaptia celebica** (Blume) Tagawa & K. Iwatsuki, **T04** 594; *Ctenopteris celebica* (Blume) Copel., **H45** 233, **P09** 498; epiphyte; montane forest at 1500–1800 m; Pk, Ph, Sl.

- 17.5.4 **Prosaptia contigua** (G. Forst.) C. Presl, **T04** 593; *Ctenopteris contigua* (G. Forst.) Holttum, **H45** 230, **P09** 501, **P19** 172; on trees and tree-ferns near streams; in the mountains at 900–1700 m; Tg, Pk, Ph, Sl.
- 17.5.5 **Prosaptia davalliacea** (F. Muell. & Baker) Copel., **P10** 113; *Ctenopteris davalliacea* (F. Muell. & Baker) Parris, **P09** 501; epiphyte; once collected, Pk.
- 17.5.6 **Prosaptia leysii** (Baker) Ching, **T04** 594; *Ctenopteris leysii* (Baker) Holttum, **H45** 232, **P09** 499; epiphytic on mossy trees near streams; hill forest to 1000 m; Kd, Pk, Ph, Sl, NS, Ml.
- 17.5.7 **Prosaptia obliquata** (Blume) Mett., **T04** 592; *Ctenopteris obliquata* (Blume) Copel., **H45** 229, **P09** 499, **P19** 171; epiphyte; hill and montane forest at 900–1800 m; Pk, Ph, Sl, NS.
- 17.6.1 **Scleroglossum crassifolium** (Baker) C. Chr., **P11**; epiphyte.
- 17.6.2 **Scleroglossum debile** (Mett. ex Kuhn) Alderw., **H45** 235, **P09** 516, **P19** 176; epiphyte; hill forest at 600–900 m; Pn, Ph, NS, Ml, Jh.
- 17.6.3 **Scleroglossum minus** (Fée) C. Chr., **H45** 236, **P09** 515, **P19** 176; on mossy tree trunks; montane forest at 1200–2100 m; Pn, Ph, Sl, Ml.
- 17.6.4 **Scleroglossum pusillum** (Blume) Alderw., **H45** 234, **P09** 515, **P19** 175; on mossy tree trunks; upper montane forest at 900–1800 m; Pn, Pk, Ph, Sl, Ml, Jh.
- 17.7.1 **Xiphopteris alternidens** (Ces.) Copel., **P09** 502; on rocks in streams; mountains at 1500–1700 m; Gg Tahan, Ph.
- 17.7.2 **Xiphopteris cornigera** (Baker) Copel., **P09** 503; *Xiphopteris hieronymusii* (C. Chr.) Holttum, **H45** 218, **P19** 163; on trees in mossy forest; mountains at 1450–1850 m; Pk, Ph, Sl, Ml, Jh.
- 17.7.3 **Xiphopteris exilis** Parris, **P09** 503, **P10** 121; epiphyte on mossy tree trunks; montane forest at 900 m; known only from type, Gg Belumut, Jh; endemic.
- 17.7.4 **Xiphopteris musgraviana** (Baker) Parris, **P09** 504; epiphyte; once from Penang Hill.
- 17.7.5 **Xiphopteris setulifera** (Alderw.) Parris, **P09** 504; poorly known; Pk, Ml.
- 17.7.6 **Xiphopteris sparsipilosa** (Holttum) Holttum, **H45** 219, **P09** 504, **P19** 164; on mossy tree trunks; montane forest at 1200–1850 m; Pk, Ph, Sl; endemic.
- 17.7.7 **Xiphopteris subpinnatifida** (Blume) Copel., **P09** 505; once each from Pn and Pk.

18. HYMENOPHYLLACEAE
- 18.1.1 **Cephalomanes gemmatum** (J.Sm. ex Baker) K. Iwatsuki, **I06** 547; *Trichomanes gemmatum* J.Sm. ex Baker, **H45** 104; *Trichomanes idoneum* C.V. Morton, **P19** 84; epiphyte; mountain-top forest; Kl, Tg, Ph, Jh.
- 18.1.2a **Cephalomanes javanicum** (Blume) Bosch var. **asprenoides** (C.Chr.) K. Iwatsuki, **I06** 548; *Trichomanes javanicum* Blume, **H45** 102 in part; epiphyte; only collected on Pulau Tioman.
- 18.1.2b **Cephalomanes javanicum** (Blume) Bosch var. **javanicum**, **I06** 548; *Trichomanes javanicum* Blume, **H45** 102 in part, **P19** 81; common near streams; lowland and hill forest.
- 18.1.3 **Cephalomanes meifolium** (Bory ex Willd.) K. Iwatsuki, **I06** 546; *Trichomanes meifolium* Bory ex Willd., **H45** 103, **P19** 83; terrestrial or on tree bases or fallen logs; montane forest above 1000 m.
- 18.1.4 **Cephalomanes obscurum** (Blume) K. Iwatsuki, **I06** 547; *Trichomanes obscurum* Blume, **H45** 102, **P19** 87; common on streambanks; lowlands and mountains.
- 18.1.5 **Cephalomanes setigerum** (Backh. ex T. Moore) I.M. Turner, **T21** 26; *Trichomanes setigerum* Backh. ex T. Moore, **H45** 104; collected once on Gg Bubu, Pk.
- 18.1.6 **Cephalomanes singaporeanum** Bosch, **P11**; *Trichomanes singaporeanum* (Bosch) Alderw., **H45** 103, **P19** 82; on rocks and banks; lowland and hill forest.
- 18.1.7 **Cephalomanes superbum** (Backh. ex T. Moore) I.M. Turner, **T21** 26; *Trichomanes superbum* Backh. ex T. Moore, **H45** 108; terrestrial; lowland forest; Pk, Jh, Sp.
- 18.2.1 **Crepidomanes aphlebioides** (H. Christ) I.M. Turner, **T21** 26; *Trichomanes aphlebioides* H. Christ, **H45** 105; in rocky valleys on Gg Panti, Jh.
- 18.2.2 **Crepidomanes auriculatum** (Blume) K. Iwatsuki, **I06** 528; *Trichomanes auriculatum* Blume, **H45** 105, **P19** 85; climbing on small trees; lower montane forest at 750–1500 m.
- 18.2.3 **Crepidomanes bipunctatum** (Poir.) Copel., **I06** 536; *Trichomanes bipunctatum* Poir., **H45** 99, **P19** 79; *Trichomanes bilabiatum* Nees & Blume, **H45** 99, **P19** 80; epiphyte of damp, shady forest; lowland and hills.
- 18.2.4 **Crepidomanes christii** (Copel.) Copel., **I06** 540; *Trichomanes christii* Copel., **H45** 100, **P19** 80; epiphyte; lowland forest; widespread.

- 18.2.5 **Crepidomanes digitatum** (Sw.) K. Iwatsuki, **I06 540**; *Trichomanes digitatum* Sw., **H45 94**, **P19 74**; on trees and rocks; montane forest, on mangrove trees in the south.
- 18.2.6 **Crepidomanes humile** (G. Forst.) Bosch, **I06 532**; *Trichomanes humile* G. Forst., **H45 98**, **P19 78**; epiphyte; near shady rivers in the lowlands.
- 18.2.7 **Crepidomanes kurzii** (Bedd.) Tagawa & K. Iwatsuki, **T05 613**; *Trichomanes kurzii* Bedd., **P12 7**; once from Taman Negara, Ph.
- 18.2.8 **Crepidomanes latealatum** (Bosch) Copel., **I06 537**; *Trichomanes latealatum* (Bosch) H. Christ, **H45 101**; on rocks and tree trunks; montane forest; Fraser's Hill and Cameron Highlands, Ph.
- 18.2.9 **Crepidomanes maximum** (Blume) K. Iwatsuki, **I06 531**; *Trichomanes maximum* Blume, **H45 101**, **P19 86**; on wet rocks by streams, all altitudes.
- 18.2.10 **Crepidomanes minutum** (Blume) K. Iwatsuki, **I06 524**; *Trichomanes minutum* Blume, **H45 96**; *Trichomanes proliferum* Blume, **H45 97**, **P19 76**; *Trichomanes saxifragoides* C. Presl, **P19 75**; on trees and rocks in damp shady forests; lowlands to mountains.
- 18.2.11 **Crepidomanes pallidum** (Blume) K. Iwatsuki, **I06 523**; *Trichomanes pallidum* Blume, **H45 97**, **P19 77**; on trees and rocks; lowlands to mountains.
- 18.2.12 **Crepidomanes radicans** (Sw.) K. Iwatsuki var. **nauseanum** (H. Christ) K. Iwatsuki, **I06 530**; *Trichomanes radicans* Sw., **H45 107**; once collected in the Cameron Highlands, Ph.
- Crepidomanes latemarginale* (Eaton) Copel. [*Trichomanes latemarginale* Eaton, **H45 101**] has been recorded from Pulau Adang which is in Thailand.
- 18.3.1 **Hymenophyllum acanthoides** (Bosch) Rosenst., **H45 80**, **I06 512**, **P19 66**; on trees and rocks; montane forests, lowlands in the south.
- 18.3.2 **Hymenophyllum badium** Hook. & Grev., **H45 82**, **I06 520**, **P19 68**; on rocks and tree trunks; in the mountains.
- 18.3.3 **Hymenophyllum blandum** Racib., **H45 77**, **I06 511**, **P19 63**; on wet trees and rocks; montane forest.
- 18.3.4 **Hymenophyllum denticulatum** Sw., **H45 79**, **I06 511**, **P19 79**; on trees and rocks; mountains, lowlands in the south.
- 18.3.5 **Hymenophyllum emarginatum** Sw., **H45 84**; once collected, Gg Batu Puteh, Pk.
- 18.3.6 **Hymenophyllum exsertum** Wall. ex Hook., **H45 86**, **I06 513**, **P19 71**; on mossy trees; montane forest above 1000 m.

- 18.3.7 **Hymenophyllum holochium** (Bosch) C.Chr., **H45** 77, **I06** 511; on mossy tree trunks and damp rocks; montane forest.
- 18.3.8 **Hymenophyllum imbricatum** Blume, **H45** 85, **P19** 70; on shady trees; mountains; Cameron Highlands, Ph.
- 18.3.9 **Hymenophyllum javanicum** Spreng., **H45** 83, **P19** 67; common forest epiphyte; mountains at 1000–1500 m; Main Range.
- 18.3.10 **Hymenophyllum johorensis** Holttum, **H45** 80; epiphyte; montane forest at about 900 m; Gg Belulut, Jh.
- 18.3.11 **Hymenophyllum penangianum** C.G. Matthew & H. Christ, **H45** 81; on trees; mountain tops; Kd, Pn, Ph, Jh.
- 18.3.12 **Hymenophyllum polyanthos** Sw., **H45** 81, **I06** 516, **P19** 67; on trees and rocks; all altitudes.
- 18.3.13 **Hymenophyllum productum** Kunze, **H45** 83, **P19** 69; on rocks and tree trunks; montane forest at 600–1500 m.
- 18.3.14 **Hymenophyllum serrulatum** (C. Presl) C.Chr., **H45** 78, **I06** 511, **P19** 64; on trees and rocks; montane forest, mangroves and swamp forest in the south.
- 18.3.15 **Hymenophyllum tenellum** D. Don, **P11**.
- 18.3.16 **Hymenophyllum treubii** Racib., **H45** 84; epiphyte; montane forest at 900–1300 m.
- 18.3.17 **Hymenophyllum** sp. aff. **brachyglossum**, **P14** 7; once from Taman Negara, Ph.
- 18.4.1 **Sphaerocionium nitidulum** (Alderw.) K. Iwatsuki, **I05** 211, **I06** 522; on tree trunks; montane forest.
- 18.4.2 **Sphaerocionium palmatifidum** (Müll.Berol.) K. Iwatsuki, **I05** 211, **I06** 211; *Trichomanes palmatifidum* Müll.Berol., **H45** 95; *Trichomanes ridleyi* Copel., **H45** 95; epiphyte; forest on mountain ridges above 1000 m; Taiping Hills, Pk, Fraser's Hill, Cameron Highlands, Gg Tahan, Ph.
- 18.5.1 **Trichomanes bimarginatum** (Bosch) Bosch, **H45** 92 in part, **I06** 543, **P19** 73; *Microgonium bimarginatum* Bosch, **C33** 520; epiphyte low on trees near streams; Pk, NS, P. Tioman.
- 18.5.2 **Trichomanes exiguum** (Bedd.) Baker, **H45** 94, **I06** 543, **E01** 167; on wet rocks; hill forest at about 600 m; once at Sg Halong, Pk; once at Genting Simpah, Sl.
- 18.5.3 **Trichomanes henzaianum** Parish ex Hook., **E01** 167; on riverside in lowland forest; once at Sg Halong, Pk.

- 18.5.4 **Trichomanes mindorense** H. Christ, **C33** in synonymy, *Trichomanes bimarginatum auct. non* (Bosch) Bosch, **H45** 92 in part; *Microgonium mindorense* (H. Christ) Copel., **C33** 522; low level epiphyte; damp lowland forest; Pk, Ph, Sl, Jh, Sp.
- 18.5.5 **Trichomanes motleyi** (Bosch) Bosch, **H45** 92, **I06** 542; *Microgonium motleyi* Bosch, **C33** 526; epiphyte on trees; damp shady lowland forest; Pk, Ph, Sp.
- 18.5.6 **Trichomanes sublimbatum** Müll.Berol., **H45** 92, **I06** 542, **P19** 72; *Microgonium sublimbatum* (Müll.Berol.) Bosch, **C33** 527; on rocks and tree trunks; very wet forest to 1500 m; Kd, Pk, Ph, Sl, Sp.
- 18.5.7 **Trichomanes tahitense** Nadeaud, **I06** 541; *Microgonium tahitense* (Nadeaud) Tindale, **C33** 524; epiphyte; lowland forest; twice collected in Taman Negara, Ph.

## 19. LOMARIOPSIDACEAE

- 19.1.1 **Bolbitis appendiculata** (Willd.) K. Iwatsuki, **FMu1** 322, **P19** 354; *Egenolfia appendiculata* (Willd.) J.Sm., **H45** 459; on rocks by streams; lowland and hill forest to 1500 m.
- 19.1.2 **Bolbitis heteroclita** (C. Presl) Ching, **H45** 462, **FMu1** 325, **P19** 355; *Bolbitis simplicifolia* (Holttum) Ching, **H45** 464; creeping over soil, rocks and tree bases; lowland and hill forest to 1500 m.
- 19.1.3 **Bolbitis singaporensis** Holttum, **H45** 467, **FMu1** 329; on rocks in stream bed; lowland forest; Bukit Timah, Sp.
- 19.1.4 **Bolbitis sinuata** (C. Presl) Hennisman, **FMu1** 326, **P19** 357; *Bolbitis diversifolia* (Blume) Schott, **H45** 465; *Bolbitis malaccensis* (C.Chr.) Ching, **H45** 470; *Bolbitis nitens* Holttum, **H45** 470; rocky streams in forest; lowland and hills to 1200 m.
- 19.1.5 **Bolbitis virens** (Hook. & Grev.) Schott var. **compacta** Hennisman, **FMu1** 321; *Bolbitis virens* (Hook. & Grev.) Schott, **H45** 468, **P19** 359; usually on rocks near streams; lowlands; Kd, Pn, Pk, Sl.
- 19.2.1 **Elaphoglossum amblyphyllum** P.R. Bell, **FMu1** 303; *Elaphoglossum decurrens (non Desv.)* Alderw., **H45** 458; epiphyte on old trees; lowlands to 800 m.
- 19.2.2 **Elaphoglossum blumeanum** (Fée) J.Sm., **FMu1** 311, **P19** 369; *Elaphoglossum yunnanense auct. non* (Baker) C.Chr., **H45** 455; epiphyte; high mountains to 2000 m.
- 19.2.3 **Elaphoglossum brevifolium** Holttum, **H45** 458, **FMu1** 307; epiphyte; montane forest at 1400–1850 m; Gg Batu Puteh, Pk; Gg Tahan, Ph.



- 19.2.3 **Elaphoglossum callifolium** (Blume) T. Moore, **H45** 459, in part, **FMu1** 307, **P19** 370; epiphyte; montane forest at 1000–2000 m.
- 19.2.4 **Elaphoglossum malayense** Holttum, **FMu1** 308; *Elaphoglossum callifolium* auct. non Blume, **H45** 459 in part; epiphyte; montane forest at 1050–1400 m.
- 19.2.5 **Elaphoglossum melanostictum** (Blume) T. Moore, **FMu1** 301; *Elaphoglossum peninsulare* Holttum, **H45** 456; epiphyte on tree trunks; lowlands and mountains to 1700 m.
- 19.2.6 **Elaphoglossum norrisii** (Hook.) Bedd., **FMu1** 301; *Elaphoglossum melanostictum* auct. non (Blume) T. Moore, **H45** 455; on mossy trees and rocks; lowlands and hills to 1500 m.
- 19.2.7 **Elaphoglossum robinsonii** Holttum, **FMu1** 301, **P19** 371; epiphyte on very mossy trees; montane forest in the cloud zone; Genting Highlands, Ph/SI; endemic.
- 19.2.8 **Elaphoglossum spongophyllum** P.R. Bell ex Holttum, **FMu1** 310; epiphyte; montane forest at 1550–1850 m; Gg Tahan, Ph.
- 19.3.1 **Lomagramma perakensis** Bedd., **H45** 478, **FMu1** 281, **P19** 368; climber; montane forest at 600–1400 m.
- 19.3.2 **Lomagramma sumatrana** Alderw., **H45** 477, **FMu1** 285, **P19** 367; climber; lowland forest near streams.
- 19.4.1 **Lomariopsis lineata** (C. Presl) Holttum, **FMu1** 262, **P19** 361; *Lomariopsis cochinchinensis* Fée, **H45** 476; climber; damp forest to 1200 m.
- 19.5.1a **Teratophyllum aculeatum** (Blume) Mett. ex Kuhn var. **aculeatum**, **H45** 473, **FMu1** 269; climber; lowland forest.
- 19.5.1b **Teratophyllum aculeatum** (Blume) Mett. ex Kuhn var. **montanum** Holttum, **H45** 473, **FMu1** 269, **P19** 362; climber; montane forest at 1200–1500 m.
- 19.5.2 **Teratophyllum ludens** (Fée) Holttum, **H45** 474, **FMu1** 275, **P19** 365; climber; freshwater swamp forest.
- 19.5.3 **Teratophyllum rotundifolium** (R. Bonap.) Holttum, **H45** 474, **FMu1** 270, **P19** 364; climber; damp lowland and hill forest at 150–1000 m.

## 20. MARATTIACEAE

- 20.1.1 **Angiopteris angustifolia** C. Presl, **H45** 45, **P19** 33; terrestrial; by mountain stream about 1200 m; Pk, Ph.

- 20.1.2 **Angiopteris evecta** (G. Forst.) Hoffm., **H45** 44, **P19** 31; terrestrial of damp, shady places; lowlands and hills to 1200 m; widespread.
- 20.2.1 **Christensenia aesculifolia** (Blume) Maxon ssp. **korthalsii** (de Vriese) Rolleri, **H45** 45, **P19** 34, **R28** 16; terrestrial fern of forest shade; lowlands to 800 m; Pk, Sl.
- 20.2.2 **Christensenia lobbiana** (de Vriese) Rolleri, **R28** 17; terrestrial; lowland forest; Sl.
21. MARSILEACEAE
- 21.1.1 **Marsilea crenata** C. Presl, **H45** 619, **P19** 442; aquatic common in rice paddies.
- 21.1.2 **Marsilea scalaripes** D.M. Johnson, **J16** 68; *Marsilea polycarpa* auct. non Hook. & Grev., **H45** 620; aquatic fern; only known from type, Kd; endemic.
22. MATONIACEAE
- 22.1.1 **Matonia foxworthyi** Copel., **K04** 172; terrestrial; clearings and ridges in montane forest; once from Gg Ledang, Ml.
- 22.1.2 **Matonia pectinata** R.Br., **H45** 59, **P19** 44, **K04** 172; terrestrial; mountain ridges and summits at 900–1500 m; Kd, Tg, Ph, Jh.
23. OLEANDRACEAE
- 23.1.1 **Arthropteris palisotii** (Desv.) Alston, **H45** 634, **P19** 382; climber; shady lowland forest; Pk.
- 23.2.1 **Nephrolepis acutifolia** (Desv.) H. Christ., **H45** 375, **P19** 372; epiphyte; on old trees in the lowlands, often near the sea.
- 23.2.2 **Nephrolepis auriculata** (L.) Trimen, **A13** 248; *Nephrolepis biserrata* (Sw.) Schott, **H45** 380, **P19** 377; terrestrial; very common lowland fern of open places; widespread.
- 23.2.3 **Nephrolepis cordifolia** (L.) C. Presl, **H45** 379, **P11**; *Nephrolepis tuberosa* (Bory) C. Presl, **P19** 375; terrestrial; montane forest clearings; Pk, Ph.
- 23.2.4 **Nephrolepis davalloides** (Sw.) Kunze, **H45** 634, **P19** 374; *Nephrolepis acuminata* (Houtt.) Kuhn, **H45** 378; common epiphyte; highlands.
- 23.2.5 **Nephrolepis dicksonioides** H. Christ., **H45** 376, **C13** 212, **P19** 373; terrestrial; common on limestone forming dense thickets.

- 23.2.6 **Nephrolepis falcata** (Cav.) C.Chr., **H45** 381, **P19** 380; on rocks and trees; lowlands and hills.
- 23.2.7 **Nephrolepis hirsutula** (G. Forst.) C. Presl, **H45** 382, **P11**; *Nephrolepis multiflora* (Roxb.) F.M. Jarett ex C.V. Morton, **P19** 381; terrestrial; exposed places in the lowlands and hills.
- 23.2.8 **Nephrolepis radicans** (Burm.f.) Kuhn, **H45** 381, **P19** 176; terrestrial or on rocks; lowlands including limestone.
- 23.3.1 **Oleandra pistillaris** (Sw.) C.Chr., **H45** 386, **P19** 383; shrubby plant, occasionally epiphytic; montane forest.
- 23.3.2 **Oleandra undulata** (Willd.) Ching, **H45** 384; terrestrial; open places on mountain slopes; Gg Jerai, Kd.

## 24. OPHIOGLOSSACEAE

- 24.1.1 **Botrychium daucifolium** Wall. ex Hook. & Grev., **H45** 629, **P19** 27; terrestrial; open montane forest a 1450 m; Gg Jasah, Cameron Highlands, Ph.
- 24.2.1 **Helminthostachys zelanica** (L.) Hook., **H45** 42, **P19** 30; terrestrial; damp, lightly-shaded places; north of Peninsula.
- 24.3.1 **Ophioglossum costatum** R.Br., **W16** 323; *Ophioglossum pedunculatum* Desv., **H45** 39 in part; terrestrial.
- 24.3.2 **Ophioglossum gramineum** Willd., **W16** 324, **H45** 629; terrestrial, sandy soil.
- 24.3.3a **Ophioglossum nudicaule** L. var. **macrorhizum** (Kunze) R.T. Clausen, **W16** 324; *Ophioglossum pedunculatum* Desv., **H45** 39 in part; terrestrial; in open places.
- 24.3.3b **Ophioglossum nudicaule** L. var. **nudicaule**, **W16** 324, **P19** 28; *Ophioglossum pedunculatum* Desv., **H45** 39 in part; terrestrial; in open places.
- 24.3.4 **Ophioglossum pendulum** L., **H45** 40, **W16** 332, **P19** 29; common epiphyte; lowlands and hills to 1000 m.
- 24.3.5 **Ophioglossum reticulatum** L., **W16** 327, **P19** 28; *Ophioglossum pedunculatum* Desv., **H45** 39 in part; terrestrial; open places in lowlands and hills.
- 24.3.6 **Ophioglossum simplex** Ridl. ex Bower, **W16** 330; dubiously Malayan.

## 25. OSMUNDACEAE

- 25.1.1 **Osmunda javanica** Blume, **H45** 47, **A19** 28, **P19** 35; terrestrial, river banks and damp slopes to about 1200m.
- 25.1.2 **Osmunda vachellii** Hook., **A19** 31; terrestrial; on river banks and in montane forest; Ph.

## 26. PARKERIACEAE

- 26.1.1 **Ceratopteris thalictroides** (L.) Brongn., **H45** 578, **P19** 440; semi-aquatic; lowland ditches and rice fields, widespread.

## 27. PLAGIOGYRIACEAE

- 27.1.1 **Plagiogyria adnata** (Blume) Bedd., **H45** 111; terrestrial; collected once on Gg Tahan, Ph.
- 27.1.2 **Plagiogyria glauca** (Blume) Mett., **H45** 112; terrestrial; collected once, no exact location.
- 27.1.3 **Plagiogyria tahanensis** Miyam. & H. Ohba, **M43** 31; on rocks; montane forest at about 1600 m; Gg Tahan, Ph; endemic.
- 27.1.4 **Plagiogyria tuberculata** Copel., **H45** 111, **P19** 88; terrestrial; on high mountain ridges above 1500 m; Cameron Highlands, Ph.

## 28. POLYPODIACEAE

- 28.1.1 **Aglaomorpha coronans** (Wall. ex Mett.) Copel., **R29** 196; epiphyte up to 25 m from ground; lowlands and hills to 1800 m.
- 28.1.2 **Aglaomorpha drynarioides** (Hook.) Roos, **R29** 202; *Merinthosorus drynarioides* (Hook.) Copel., **H45** 186, **P19** 140; epiphyte 5–30 m from ground on forest trees; lowlands and hills to 1200 m; Pn, Pk, Ph.
- 28.1.3 **Aglaomorpha heraclea** (Kunze) Copel., **H45** 185, **R29** 198, **P19** 138; epiphyte upto 25 m from ground; montane forest at 700–1400 m.
- 28.1.4 **Aglaomorpha speciosa** (Blume) Roos, **R29** 204; *Photinopteris speciosa* (Blume) C. Presl, **H45** 187, **P19** 142; epiphyte; mangroves, riverside trees and in forests to 1600 m.
- 28.2.1 **Belvisia mucronata** (Fée) Copel., **H45** 155, **H54** 521; *Belvisia callifolia* (C. Chr.) Copel., **H45** 156, **P19** 119; on tree trunks; lowland and hill forest to 1500 m.

- 28.2.2 **Belvisia spicata** (L.f.) Mirbel ex Copel., **H54** 524; *Belvisia revoluta* (Blume) Copel., **H45** 155, **P19** 118; epiphyte; montane forest above 900 m; Kd, Pk, Ph, Sl.
- 28.3.1a **Colysis acuminata** (Baker) Holttum var. **acuminata**, **H45** 162; creeping in lowland forest; Pk, Ph.
- 28.3.1b **Colysis acuminata** (Baker) Holttum var. **fluminalis** (Ridl.) Hennisman, **V20** 157; *Colysis acuminata* (Baker) Holttum var. *angustata* Holttum, *nom. nud.*, **H45** 163; rheophyte in streambed; base of Gg Raya, P. Langkawi; endemic variety.
- 28.3.2 **Colysis insignis** (Blume) J.Sm., **B21** 108; *Microsorium insigne* (Blume) Copel., **H45** 174, **P19** 127; *Microsorium hancockii* (Baker) Ching, **H45** 174, **P19** 128; usually on rocks, sometimes on trees or the ground; lowlands and mountains to 2000 m.
- 28.3.3 **Colysis macrophylla** (Blume) C. Presl, **H45** 160, **P19** 122; climbing low on small trees; lowland forest; Tg, Pk, Jh.
- 28.3.4 **Colysis pedunculata** (Hook. & Grev.) Ching, **H45** 160, **P19** 121; creeping on rocks or tree trunks; lowlands and hills to 1000 m.
- 28.3.5 **Colysis pteropus** (Blume) Bosman, **B21** 112; *Microsorium pteropus* (Blume) Copel., **H45** 172, **P19** 126; on wet rocks on forest, sometimes rheophytic; lowlands and hills to 1000 m.
- 28.4.1 **Drynaria bonii** H. Christ, **R29** 221; epiphyte; P. Langkawi, Pn.
- 28.4.2 **Drynaria quercifolia** (L.) J.Sm., **H45** 182, **R29** 218, **P19** 214; common old tree epiphyte; lowlands and hills to 1200 m; widespread.
- 28.4.3 **Drynaria rigidula** (Sw.) Bedd., **H45** 183, **R29** 234, **P19** 137; epiphyte; lowlands and hills; not found south of Malacca.
- 28.4.4 **Drynaria sparsisora** (Desv.) T. Moore, **H45** 183, **R29** 216, **P19** 136; epiphyte on exposed trees up to 35 m; lowlands and hills to 1400 m; widespread.
- 28.5.1 **Goniophlebium korthalsii** (Mett.) Bedd., **R25** 379; *Polypodium korthalsii* Mett., **H45** 204; epiphyte; lowland swamps; once collected, Pk.
- 28.5.2 **Goniophlebium percussum** (Cav.) W.H. Wagner & Grether, **R25** 381; *Polypodium verrucosum* (Hook. & F.A. Bauer) Mett., **H45** 206; *Goniophlebium verrucosum* (Hook. & F.A. Bauer) J.Sm., **P19** 154; epiphyte; lowland and hill forest to 1100 m.
- 28.5.3 **Goniophlebium persicifolium** (Desv.) Bedd., **P19** 155, **R25** 383; *Polypodium persicifolium* Desv., **H43** 206; on living or dead trees in forests; lowlands to mountains, 150–1900 m.

- 28.5.4 **Goniophlebium prainii** Bedd., **P19** 153, **R25** 397; *Polypodium prainii* (Bedd.) C.Chr., **H45** 204; low down on mossy trees; montane forest at 1100–1900 m; Pk, Ph, Sl.
- 28.5.5 **Goniophlebium subauriculatum** (Blume) C. Presl, **P19** 156, **R25** 400; *Polypodium subauriculatum* Blume, **H45** 207; epiphyte on forest trees; 250–2000 m; Pk, Ph, Sl.
- 28.6.1 **Lecanopteris crustacea** Copel., **G07** 300; *Phymatodes crustacea* (Copel.) Holttum, **H45** 190; ant-inhabited epiphyte; on tall trees in lowlands; Kl, Ph, Ml, Jh, Sp.
- 28.6.2 **Lecanopteris pumila** Blume ex Copel., **G07** 305; *Lecanopteris carnosa* (Reinw.) Blume var. *pumila* (Blume) Alderw., **H45** 210, **P19** 157; common epiphyte; high montane forest above 1000 m.
- 28.6.3 **Lecanopteris sinuosa** (Wall. ex Hook.) Copel., **G07** 301; *Phymatodes sinuosa* (Wall. ex Hook.) J.Sm., **H45** 190; *Myrmecopteris sinuosa* (Wall. ex Hook.) Pic.Serm., **T18** 13; epiphytic antplant; lowlands.
- 28.7.1 **Lemmaphyllum accedens** (Blume) Donk, **H45** 152, **P19** 157; epiphyte; on small trees near rivers to 1200 m; Tg, Pk, Ph, Sl, NS, Ml.
- 28.8.1 **Leptochillus axillaris** (Cav.) Kaulf., **H45** 164; climbing up tree trunks; hill forest; Pk.
- 28.8.2 **Leptochilus decurrens** Blume, **H45** 164, **P19** 123; on rocks and tree bases; upland forests above 800 m.
- 28.8.3 **Leptochilus minor** Fée, **H45** 166; collected once P. Tioman.
- 28.8.4 **Leptochilus normalis** (D. Don) Parris *ined.*, **P11**; *Microsorium normale* (D. Don) Ching, **H45** 175; epiphyte; montane forest about 1500 m; collected once from Cameron Highlands, Ph.
- 28.9.1 **Loxogramme avenia** (Blume) C. Presl, **H45** 167, **P19** 124; on trees and rocks; lowlands and hills to 1000 m.
- 28.9.2 **Loxogramme centicola** M.G. Price, **P25** 6; on trees and rocks; lowland and hill forest at 400–1200 m; P. Langkawi, Pk, Ph, Sl.
- 28.9.3 **Loxogramme scolopendrioides** (Gaudich.) C.V. Morton, **K06** 76; *Loxogramme scolopendrina* (Bory) C. Presl, **H45** 168; on trees and rocks including limestone; lowlands to 300 m; Kd, Pk, Ph.
- 28.9.4 **Loxogramme wallichiana** (Hook.) M.G. Price, **P23** 61, **P11**; *Loxogramme forbesii* Copel., **H45** 168; epiphyte; Penang Hill & Ulu Brang, Tg.
- 28.10.1 **Microsorium congregatifolium** (Alderw.) Holttum, **H45** 178, **B21** 79; on shady trees, often near streams; 30–1300 m; Pk.

- 28.10.2 **Microsorium heterocarpum** (Blume) Ching, **H45** 178, **P19** 132, **B21** 83; terrestrial or epiphytic in dark, damp forest; lowlands to mountains at 2200 m; west of the Main Range.
- 28.10.3 **Microsorium musifolium** (Blume) Copel., **H45** 176, **P19** 131, **B21** 94; on trees or rocks in forest; lowlands and hills to 900 m; north of Peninsula.
- 28.10.4 **Microsorium punctatum** (L.) Copel., **H45** 179, **P19** 133, **B21** 97; on trees and old walls; lowlands and hills.
- 28.11.1 **Neocheiropteris superficialis** (Blume) Bosman, **B21** 121; *Microsorium superficiale* (Blume) Ching, **H45** 632; usually epiphytic in shady forest; hills and mountains to 2000 m.
- 28.11.2 **Neocheiropteris zippelii** (Blume) Bosman, **B21** 123; *Microsorium zippelii* (Blume) Ching, **H45** 176, **P19** 130; epiphyte; hill forest at 400–1900 m.
- 28.12.1 **Paragramma longifolia** (Blume) T. Moore, **P11**; *Lepisorus longifolius* (Blume) Holttum, **H45** 151, **P19** 116; epiphyte; common on trees near rivers; lowlands and hills to 1000 m.
- 28.13.1 **Phymatosorus longissimus** (Blume) Pic.Serm., **P19** 144; *Phymatodes longissima* (Blume) J.Sm., **H45** 191; epiphyte; lowlands.
- 28.13.2 **Phymatosorus nigrescens** (Blume) Pic.Serm., **P19** 145; *Phymatodes nigrescens* (Blume) J.Sm., **H45** 193; on trees, occasionally rocks; lowlands; widespread.
- 28.13.3 **Phymatosorus scolopendria** (Burm.f.) Pic.Serm., **P19** 143; *Phymatodes scolopendria* (Burm.f.) Ching, **H45** 191; old tree epiphyte; lowlands.
- 28.13.4 **Phymatosorus sp.**, **B21** 133; *Microsorium sarawakense* (Baker) Ching, **H45** 175, **P19** 129; epiphyte; shady montane forest; Cameron Highlands, Ph.
- 28.14.1 **Platynerium coronarium** (D. Koenig ex O.F. Müll.) Desv., **H45** 138, **H37** 92, **P19** 105; common epiphyte; lowland forest and plantations; widespread.
- 28.14.2 **Platynerium holttumii** de Jonch. & Hennipman, **H37** 101, **P19** 106; *Platynerium wallichii* auct. non Hook., **H45** 141, **P19** 107; epiphyte; lowland forest to 700 m; north of Peninsula.
- 28.14.3 **Platynerium lobatum** Bidin & Jaman, **A20** 149; epiphyte low on trees; lowlands; only known from P. Langkawi; endemic.
- 28.14.4 **Platynerium ridleyi** H. Christ, **H45** 140, **H37** 107; crown epiphyte; wet forests and swamps.
- 28.15.1 **Pyrrosia angustata** (Sw.) Ching, **H45** 143, **H53** 156, **P19** 108; epiphyte; lowland and hill forest to 900 m.

- 28.15.2 ***Pyrrosia lanceolata*** (L.) Farwell, **H53** 191, **P19** 109; *Pyrrosia adnascens* (Sw.) Ching, **H45** 144; common epiphyte; on trees and rocks, particularly near the sea, at low altitudes.
- 28.15.3 ***Pyrrosia longifolia*** (Burm.) C.V. Morton, **H45** 148, **H53** 208, **P19** 113; common epiphyte; old trees, both wild and planted, in the lowlands; widespread.
- 28.15.4 ***Pyrrosia nummulariifolia*** (Sw.) Ching, **H45** 144, **H53** 214; on exposed trees or rocks; lowlands and hills to 1200 m.
- 28.15.5 ***Pyrrosia penangiana*** (Hook.) Holttum, **H45** 146, **C13** 217, **H53** 218, **P19** 111; on exposed trees or rocks, often limestone; northern half of Malaya.
- 28.15.6 ***Pyrrosia piloselloides*** (L.) M.G. Price, **R09** 302; *Drymoglossum piloselloides* (L.) C. Presl, **H45** 149, **P19** 115; common on exposed tree trunks and branches; lowlands and hills to 1000 m; throughout.
- 28.15.7 ***Pyrrosia rasamalai*** (Racib.) Shing, **H53** 223; *Pyrrosia floccigera auct. non* (Blume) Ching, **H45** 147, **P19** 112; common epiphyte; hill forest at 500–1500 m.
- 28.15.8 ***Pyrrosia stigmosa*** (Sw.) Ching, **H45** 148, **C13** 217, **H53** 252, **P19** 114; on limestone, occasionally epiphytic; lowlands and hills.
- 28.16.1 ***Selliguea albidosquamata*** (Blume) Parris, **P12** 152; *Crypsinus albidosquamatus* (Blume) Copel., **H45** 195; epiphyte; once collected in Pk.
- 28.16.2 ***Selliguea enervis*** (Cav.) Ching, **P12** 151; *Crypsinus enervis* (Cav.) Copel., **T04** 557; *Crypsinopsis enervis* (Cav.) Pic.Serm., **P19** 149; epiphyte; lowland and hill forest to 1200 m.
- 28.16.3 ***Selliguea heterocarpa*** (Blume) Blume, **H45** 157; on rocks or tree trunks; lowland and hill forest to 1200 m.
- 28.16.4 ***Selliguea laciniata*** (C. Presl) Parris *ined.*, **P11**; *Crypsinus laciniata* (C. Presl) Holttum, **H45** 198; *Phymatopteris laciniata* (C. Presl) Pic.Serm., **P19** 147; epiphyte; montane forest above 1200 m.
- 28.16.5 ***Selliguea lima*** (Alderw.) Holttum, **H45** 157, **P19** 120; epiphyte of mossy trees; high mountains; Fraser's Hill and Cameron Highlands, Ph.
- 28.16.6 ***Selliguea metacoela*** (Alderw.) Parris, **P12** 152; *Pycnoloma metacoelum* (Alderw.) C. Chr., **H45** 208, **P19** 157; epiphyte; lowland forest; Kd, Kl, Tg, Sl.
- 28.16.7 ***Selliguea platyphylla*** (Sw.) Ching, **P12** 151; *Crypsinus platyphyllus* (Sw.) Copel., **H45** 198; *Crypsinopsis platyphyllus* (Sw.) Pic.Serm., **P19** 148; high level epiphyte; montane forest at 900–1200 m.



- 28.16.8 **Selliguea stenophylla** (Blume) Parris, **P12** 151; *Crypsinus stenophyllus* (Blume) Holttum, **H45** 199, **P19** 151; epiphyte; lowland and hill forest to 1500 m.
- 28.16.9 **Selliguea subfasciata** (Holttum) Parris *ined.*, **P11**; *Crypsinus subfasciatus* (Holttum) Holttum, **H45** 202; *Crypsinopsis subfasciatus* (Holttum) Pic.Serm., **P19** 150; small epiphyte; known only from Fraser's Hill, Ph; endemic.
- 28.16.10a **Selliguea taeniata** (Sw.) Parris var. **palmata** (Blume) Parris, **P12** 152; *Crypsinus taeniatus* (Sw.) Copel. var. *palmatus* (Blume) C. Chr., **H45** 197; on trees and rocks in shade; hills and mountains; Tg, Ph.
- 28.16.10b **Selliguea taeniata** (Sw.) Parris var. **taeniata**, **P12** 152; *Crypsinus taeniatus* (Sw.) Copel. var. *taeniatus*, **H45** 195; on trees and rocks in shade; hills and mountains; Pn, Pk.
- 28.16.11 **Selliguea triloba** (Houtt.) M.G. Price, **P12** 152; *Crypsinus trilobus* (Houtt.) Copel., **H45** 197; *Phymatopteris triloba* (Houtt.) Pic.Serm., **P19** 146; epiphyte; montane forest.
- 28.16.12 **Selliguea wrayi** (Baker) Parris *ined.*, **P11**; *Crypsinus wrayi* (Baker) Copel., **H45** 200, **P19** 152; common epiphyte; montane forest about 1500 m; Pk, Ph.
- 28.17.1 **Thylacopteris papillosa** (Blume) Kunze *ex* J.Sm., **K06** 75, **R26** 361; *Polypodium papillosum* Blume, **H45** 203; on rocks near streams in forests; lowland forest to 400 m; north of Peninsula.

## 29. PTERIDACEAE

- 29.1.1 **Acrostichum aureum** L., **H45** 409, **P19** 232; terrestrial to 4 m tall; mangroves and damp ground near the sea; all coasts.
- 29.1.2 **Acrostichum speciosum** Willd., **H45** 410, **P19** 233; terrestrial, usually less than 2 m tall; seaward parts of mangrove swamps; all coasts.
- 29.2.1 **Pteris biaurata** L., **H45** 407, **P19** 230; terrestrial; lowlands and mountains; mostly in the north.
- 29.2.2 **Pteris dalhousiae** Hook., **H45** 401; terrestrial; forests; Pn, Jh.
- 29.2.3 **Pteris ensiformis** Burm.f., **H45** 399, **P19** 224; terrestrial; partially shaded conditions in the lowlands and hills; widespread.
- 29.2.4 **Pteris excelsa** Gaudich., **H45** 403; terrestrial; once collected, at 600 m; Taiping Hills, Pk.

- 29.2.5 **Pteris grevilleana** Wall. *ex* J. Agardh, **H45** 402; terrestrial; lowland and hill forest to 700 m; north of Peninsula.
- 29.2.6 **Pteris insignis** Mett. *ex* Kuhn, **H45** 398; terrestrial; montane forest at 1800 m; once collected from Gg Kerbau, Pk.
- 29.2.7 **Pteris longipinnula** Wall. *ex* J. Agardh, **H45** 404, **C13** 213, **P19** 228; terrestrial; lowland and hill forest, often on limestone.
- 29.2.8 **Pteris mertensioides** Willd., **H45** 404, **P19** 227; terrestrial; in shady forests, often near streams, to 1000 m; widespread.
- 29.2.9 **Pteris oppositipinnata** Fée, **K05** 163; *Pteris asperula* J.Sm. *ex* Hieron., **H45** 406, **P19** 229; terrestrial; lowland and hill forest; Pl, Sl, Jh.
- 29.2.10 **Pteris scabripes** Wall *ex* J. Agardh, **H45** 399; on rocks near streams; lowland forest; Pn, Ph.
- 29.2.11 **Pteris semipinnata** L., **H45** 401, **P19** 226; terrestrial; partial shade in lowlands; widespread, apparently expanding in range.
- 29.2.12 **Pteris tripartita** Sw., **H45** 408, **P19** 231; terrestrial; open places in the lowlands.
- 29.2.13 **Pteris venulosa** Blume, **H45** 400, **P19** 225; terrestrial; by forest streams in the hills at 400–900 m.
- 29.2.14 **Pteris vittata** L., **H45** 396, **P19** 223; in open places and on walls at all altitudes; widespread.

### 30. SALVINIACEAE

- 30.1.1 **Salvinia cucullata** Roxb. *ex* Bory, **H45** 621, **T04** 604, **M47** 510; free floating in lowland water bodies; north of Malaya.
- 30.1.2 **Salvinia molesta** D.S. Mitchell, **P19** 143, **M47** 512; *Salvinia oblongifolia* *auct. non* Mart., **H45** 621; *Salvinia auriculata* *auct. non* Aubl., **H45** 638; floating fern; ponds and ditches; widespread; naturalized from tropical America.

### 31. SCHIZAEACEAE

- 31.1.1 **Lygodium borneense** Alderw., **H45** 56, **FMu1** 55; climber; freshwater swamp forest; collected only near Sg Sedili, Jh.
- 31.1.2 **Lygodium circinnatum** (Burm.f.) Sw., **H45** 55, **FMu1** 59, **P19** 38; climber; lowland to montane forest at 1500 m.

- 31.1.3 **Lygodium flexuosum** (L.) Sw., **H45** 57 in part, **FMu1** 53, **P19** 41; climber; common in secondary vegetation to 1000 m.
- 31.1.4 **Lygodium japonicum** (Thunb.) Sw., **FMu1** 51, **W10** 246; climber; naturalized in Sp.
- 31.1.5 **Lygodium longifolium** (Willd.) Sw., **FMu1** 59, **P19** 39; *Lygodium digitatum* C. Presl, **H45** 55; climber on exposed lowland forest edges.
- 31.1.6 **Lygodium microphyllum** (Cav.) R.Br., **FMu1** 47, **P19** 42; *Lygodium scandens* Sw., **H43** 58; climber; forest margins to 1300 m.
- 31.1.7 **Lygodium polystachyum** Wall. ex T. Moore, **H45** 56, **FMu1** 46, **C13** 217; climber; most frequently in forest on limestone; P. Langkawi, Pn, Kl, Pk, Ph.
- 31.1.8 **Lygodium salicifolium** C. Presl, **FMu1** 51, **P19** 40; *Lygodium flexuosum* auct. non (L.) Sw., **H45** 57 in part; climber; secondary forest and at roadsides to 1200 m.
- 31.2.1 **Schizaea dichotoma** (L.) J. Sm., **H45** 50, **FMu1** 41; terrestrial; on lightly-shaded sandy soils to 1000 m.
- 31.2.2 **Schizaea digitata** (L.) Sw., **H45** 51, **FMu1** 41, **P19** 36; terrestrial; drier sorts of plantation and forest.
- 31.2.3 **Schizaea fistulosa** Labill., **K47** 200; terrestrial; open sandy areas; Ulu Endau, Jh.
- 31.2.4 **Schizaea inopinata** Selling, **H45** 52, **FMu1** 42, **C13** 217; on limestone to 300 m; Kl, Ph, Sl.
- 31.2.5a **Schizaea malaccana** Baker var. **malaccana**, **FMu1** 44, **H45** 52, **P19** 37; terrestrial; mossy places in montane forest; Sl, Jh.
- 31.2.5b **Schizaea malaccana** Baker var. **robustior** C. Chr., **P13** 7; terrestrial; Taman Negara, Ph.
- 31.2.6 **Schizaea wagneri** Selling, **H45** 52, **FMu1** 44; terrestrial; Kd, Pk, Sp.

## 32. THELYPTERIDACEAE

- 32.1.1 **Ampelopteris prolifera** (Retz.) Copel., **H45** 299, **FMu1** 387; terrestrial; on river banks; Kinta River, Pk.
- 32.2.1 **Amphineuron immersum** (Blume) Holttum, **FMu1** 547, **P19** 214; *Thelypteris immersa* (Blume) Ching, **H45** 243; terrestrial; near streams, sometimes on limestone; low altitudes.

- 32.2.2 **Amphineuron opulentum** (Kaulf.) Holttum, **FMu1** 548, **P19** 215; *Cyclosorus extensus* (Blume) Ching, **H45** 264; terrestrial; open rocky places.
- 32.2.3 **Amphineuron terminans** (Hook.) Holttum, **FMu1** 545; *Cyclosorus interruptus sensu* Holttum, **H45** 262; terrestrial; open places.
- 32.3.1 **Chingia clavipilosa** Holttum, **FMu1** 393, **P19** 194, terrestrial; Gg Brinchang, Cameron Highlands, Ph.
- 32.3.2 **Chingia perrigida** (Alderw.) Holttum, **FMu1** 394, **P19** 195; terrestrial; in secondary growth on mountains at about 1500 m; Genting Highlands, Ph.
- 32.3.3a **Chingia sakayensis** (Zeiller) Holttum var. **eglandulosa** Holttum, **P19** 193; terrestrial; Gg Brinchang, Cameron Highlands, Ph; endemic variety.
- 32.3.3b **Chingia sakayensis** (Zeiller) Holttum var. **sakayensis**, **FMu1** 392, **P19** 192; *Cyclosorus ferox sensu* Holttum, **H45** 265; terrestrial; in forests near streams; lowlands and hills to 1200 m.
- 32.4.1 **Christella arida** (D.Don) Holttum, **FMu1** 555, **P19** 216; *Cyclosorus aridus* (D.Don) Ching, **H45** 259; terrestrial; mostly in grassy places in the lowlands.
- 32.4.2 **Christella dentata** (Forssk.) Brownsey & Jermy, **FMu1** 557; *Cyclosorus subpubescens auct. non* (Blume) Ching, **H45** 273; terrestrial; common in plantations to 1500 m.
- 32.4.3 **Christella hispidula** (Decne.) Holttum, **FMu1** 557; *Cyclosorus contiguus* (Rosenst.) Ching, **H43** 282; terrestrial; lowlands and hills to 1500 m.
- 32.4.4 **Christella papilio** (C. Hope) Holttum, **FMu1** 556, **P19** 217; *Cyclosorus papilio* (C. Hope) Ching, **H45** 633; terrestrial; hill forest at 600–900 m; north of Peninsula.
- 32.4.5 **Christella parasitica** (L.) Lév., **FMu1** 559, **P19** 221; *Cyclosorus parasiticus* (L.) Farwell, **H45** 281; terrestrial; open grassy places to 1500 m.
- 32.4.6 **Christella siamensis** (Tagawa & K. Iwatsuki) Holttum, **P19** 218; terrestrial; open grassy places in the mountains; Cameron Highlands, Ph.
- 32.4.7 **Christella subpubescens** (Blume) Holttum, **FMu1** 588, **P19** 220; *Cyclosorus latipinna* (Hook.) Tardieu, **H45** 276; *Cyclosorus sumatranus* (Alderw.) Ching, **H45** 275; terrestrial; open places at low to mid altitudes.
- 32.5.1 **Coryphopteris arthrotricha** Holttum, **FMu1** 363; *Thelypteris viscosa sensu* Holttum, **H45** 252 in part; terrestrial; montane forest; Cameron Highlands, Ph.
- 32.5.2 **Coryphopteris badia** (Alderw.) Holttum, **FMu1** 369; terrestrial; montane rain forest at 1400–2000 m.

- 32.5.3a **Coryphopteris gymnopoda** (Baker) Holttum var. **bintangensis** Holttum, **FMu1** 361; terrestrial; montane forest; Gg Bintang, Kd/Pk; Gg Ulu Kali, Ph; endemic variety.
- 32.5.3b **Coryphopteris gymnopoda** (Baker) Holttum var. **gymnopoda**, **FMu1** 361; *Coryphopteris gymnopoda* (Baker) Holttum, **P19** 182; *Thelypteris viscosa sensu* Holttum, **H45** 252 in part; terrestrial; montane forest.
- 32.5.3c **Coryphopteris gymnopoda** (Baker) var. **humilis** Holttum, **FMu1** 361; terrestrial; montane forest; Gg Perdah, Cameron Highlands, Ph; endemic variety.
- 32.5.4 **Coryphopteris hirsutipes** (C.B. Clarke) Holttum, **FMu1** 359; *Thelypteris herbacea* Holttum, **H45** 254; terrestrial; montane forest; Gg Padang, Tg, Gg Tahan, Ph.
- 32.5.5 **Coryphopteris holtummii** Parris *ined.*, **P11**; terrestrial; Gg Jasar, Cameron Highlands, Ph; endemic.
- 32.5.6a **Coryphopteris pectiniformis** (C.Chr.) Holttum var. **hirsuta** Holttum, **FMu1** 363; *Thelypteris pectiniformis* (C.Chr.) Ching, **H45** 253 in part; terrestrial; montane forest; Pine-Tree Hill and Fraser's Hill, Ph; endemic variety.
- 32.5.6b **Coryphopteris pectiniformis** (C.Chr.) Holttum var. **pectiniformis**, **FMu1** 363; *Thelypteris pectiniformis* (C.Chr.) Ching, **H45** 253 in part; terrestrial; montane forest; Tg, Ph.
- 32.5.7 **Coryphopteris tahanensis** Holttum, **FMu1** 363, **P19** 183; terrestrial; montane forest at about 1800 m; Gg Tahan and Main Range; endemic.
- 32.5.8 **Coryphopteris unidentata** (Bedd.) Holttum, **FMu1** 359; *Thelypteris unidentata* (Bedd.) Holttum, **H45** 251; terrestrial; montane forest; Gg Bubu, Gg Bintang & Gg Inas, Pk; endemic.
- 32.5.9 **Coryphopteris viscosa** (Baker) Holttum, **FMu1** 360; *Thelypteris viscosa* (Baker) Ching, **H45** 252 in part; terrestrial; forest on mountain ridges; Gg Ledang, Ml.
- 32.6.1 **Cyclosorus interruptus** (Willd.) H. Itô, **FMu1** 386, **P19** 191; *Cyclosorus gongyloides sensu* Holttum, **H45** 261; terrestrial; common in damp grassy places to 600 m.
- 32.7.1 **Macrothelpteris torresiana** (Gaudich.) Ching, **FMu1** 348, **P19** 179; *Thelypteris uliginosa* (Kunze) Ching, **H45** 241; terrestrial; open grassy places in the lowlands and mountains.
- 32.8.1 **Mesophlebion beccarianum** (Ces.) Holttum, **FMu1** 383; terrestrial; in forest at 200–1200 m; south of Peninsula.

- 32.8.2 **Mesophlebion chylamydophorum** (Rosenst. ex C.Chr.) Holttum, **FMu1** 384, **P19** 189; *Thelypteris chylamydophora* (Rosenst. ex C.Chr.) Ching, **H45** 246; terrestrial; lowlands forests, particularly in swamps.
- 32.8.3 **Mesophlebion crassifolium** (Blume) Holttum, **FMu1** 384, **P19** 190; *Thelypteris crassifolia* (Blume) Ching, **H45** 246; terrestrial; hill forest at 700–1800 m.
- 32.8.4 **Mesophlebion motleyanum** (Hook.) Holttum, **FMu1** 381; *Thelypteris motleyana* (Hook.) Holttum, **H45** 247; terrestrial; lowland and hill forest to 1200 m.
- 32.8.5 **Mesophlebion trichopodium** (C.Chr.) Holttum, **FMu1** 380, **P19** 286; *Thelypteris paleata* (Copel.) Holttum, **H45** 249; terrestrial; near streams in forest to 1000 m.
- 32.9.1 **Metathelypteris dayii** (Baker) Holttum, **FMu1** 352, **P19** 181; *Thelypteris singalanensis sensu* Holttum, **H45** 243 in part; terrestrial; on open banks in the highlands, Taiping Hills, Pk; Fraser's Hill, Cameron Highlands, Ph.
- 32.9.2 **Metathelypteris flaccida** (Blume) Ching, **FMu1** 351, **P19** 180; terrestrial; on exposed earth banks in the highlands; Taiping Hills, Pk, Cameron Highlands, Ph.
- 32.9.3 **Metathelypteris gracilescens** (Blume) Ching, **FMu1** 351; terrestrial; montane forest at 1500–2200 m; once collected in Cameron Highlands.
- 32.10.1 **Parathelypteris beddomei** (Baker) Ching, **FMu1** 371, **P19** 184; *Thelypteris beddomei* (Baker) Ching, **H45** 240; terrestrial; open places in the mountains at 1500–2000 m; Taiping Hills, Pk, Cameron Highlands, Ph.
- 32.11.1 **Pneumatopteris callosa** (Blume) Nakai, **FMu1** 419, **P19** 196; *Cyclosorus dicranogramma sensu* Holttum, **H45** 267; terrestrial; open places near mountain streams at 600–1750 m; Cameron Highlands, Ph.
- 32.11.2 **Pneumatopteris ecallosa** (Holttum) Holttum, **FMu1** 425, **P19** 197; *Cyclosorus ecallosa* Holttum, **H45** 272; terrestrial; near streams in montane forest at about 1500 m; Cameron Highlands, Genting Highlands, Ph; endemic.
- 32.11.3 **Pneumatopteris truncata** (Poir.) Holttum, **FMu1** 429, **P19** 198; *Cyclosorus truncata* (Poir.) Holttum, **H45** 266; shady places near streams to 1200 m.
- 32.12.1 **Pronephrium asperum** (C. Presl) Holttum, **FMu1** 512, **P19** 206; *Abacopteris multilineata* (Wall. ex Hook.) Ching var. *malayensis* Holttum, *nom. nud.*, **H45** 297; terrestrial; near streams in lowland and hill forest.

- 32.12.2 **Pronephrium glandulosum** (Blume) Holttum, **FMu1** 522, **P19** 207; *Cyclosorus glandulosus* (Blume) Ching, **H45** 278; terrestrial; near streams in forest to 800 m.
- 32.12.3 **Pronephrium menisciicarpon** (Blume) Holttum, **FMu1** 526, **P19** 208; *Abacopteris menisciicarpa* (Blume) Holttum, **H45** 290; terrestrial; lowland forest near streams.
- 32.12.4 **Pronephrium** × **parishii** (Bedd.) Holttum, **FMu1** 535; *Abacopteris triphylla* (Sw.) Ching var. *parishii* (Bedd.) Ching, **H43** 287; terrestrial; dry streams in lowland forest; Pk, Ph.
- 32.12.5 **Pronephrium peltatum** (Alderw.) Holttum var. **peninsulare** Holttum, **FMu1** 530; terrestrial; montane forest above 900 m; Main Range and Taiping Hills; endemic variety.
- 32.12.6 **Pronephrium repandum** (Fée) Holttum, **FMu1** 533, **P19** 209; *Abacopteris urophylla* (Mett.) Ching, **H45** 296; terrestrial; shady lowland and hill forest.
- 32.12.7 **Pronephrium rubicundum** (Alderw.) Holttum, **FMu1** 536, **P19** 213; *Abacopteris rubicunda* (Alderw.) Holttum, **H45** 292; terrestrial; lowland forest to 800 m.
- 32.12.8 **Pronephrium salicifolium** (Wall. ex Hook.) Holttum, **FMu1** 535, **P19** 211; *Abacopteris salicifolia* (Wall. ex Hook.) Holttum; **H45** 288; rheophyte; lowlands below 500 m.
- 32.12.9 **Pronephrium triphyllum** (Sw.) Holttum, **FMu1** 534, **P19** 210; *Abacopteris triphylla* (Sw.) Ching, **H45** 287; terrestrial; lowlands near partial shade.
- 32.13.1 **Pseudophegopteris paludosa** (Blume) Ching, **FMu1** 347, **P19** 178; *Thelypteris brunnea sensu* Ching, **H45** 240; terrestrial; montane forest at 1200–2000 m.
- 32.13.2 **Pseudophegopteris rectangularis** (Zoll.) Holttum, **FMu1** 346, **P19** 177; *Thelypteris oppositipinna* (Alderw.) Ching, **H43** 239; terrestrial; by mountain streams at 1000–1500 m.
- 32.14.1 **Sphaerostephanos hendersonii** Holttum, **FMu1** 493; terrestrial; montane forest at about 1500 m; Cameron Highlands, Ph.
- 32.14.2 **Sphaerostephanus heterocarpus** (Blume) Holttum, **FMu1** 457, **P19** 201; *Cyclosorus heterocarpus* (Blume) Ching, **H45** 269; shady places near streams; lowlands and mountains to 1500 m.
- 32.14.3 **Sphaerostephanos larutensis** (Bedd.) C. Chr., **FMu1** 489, **P19** 205; *Cyclosorus larutensis* (Bedd.) Ching, **H45** 284; terrestrial; forest near streams to 1000 m.

- 32.14.4      **Sphaerostephanos latebrosus** (Kunze *ex* Mett.) Holttum, **FMu1** 471; terrestrial; lowland and hill forest to 800 m.
- 32.14.5      **Sphaerostephanos norrisii** (Rosenst.) Holttum, **FMu1** 485; *Cyclosorus toppingii* [*non* (Copel.) Ching] Holttum, **H45** 280, terrestrial; montane forest at 1000–1500 m; Cameron Highlands, Ph.
- 32.14.6      **Sphaerostephanos peltochlamys** (C.Chr.) Holttum, **FMu1** 495; *Abacopteris peltochlamys* (C.Chr.) Holttum, **H45** 295; terrestrial; lowland forest; Kl.
- 32.14.7      **Sphaerostephanos penniger** (Hook.) Holttum, **FMu1** 461, **P19** 202; *Cyclosorus megaphyllus* (Mett.) Ching, **H45** 268; terrestrial; near streams in the hills.
- 32.14.8      **Sphaerostephanos polycarpus** (Blume) Copel., **FMu1** 448, **P19** 199; *Cyclosorus polycarpus* (Blume) Holttum, **H45** 283; terrestrial; common in open places near streams; lowlands and mountains to 1800 m.
- 32.14.9      **Sphaerostephanos porphyricola** (Copel.) Holttum, **FMu1** 472, **P19** 203; *Cyclosorus porphyricola* (Copel.) Ching, **H45** 271; terrestrial; near shady streams.
- 32.14.10a     **Sphaerostephanos pterosporus** (Alderw.) Holttum var. **altilobus** Holttum, **FMu1** 487; terrestrial; lower montane forest at 750–900 m; Pk; endemic variety.
- 32.14.10b    **Sphaerostephanos pterosporus** (Alderw.) Holttum var. **pterosporus**, **FMu1** 487; terrestrial; lowlands and hills to 700 m; widespread in the south.
- 32.14.11     **Sphaerostephanos unitus** (L.) Holttum, **FMu1** 477; *Cyclosorus unitus* (L.) Ching, **H43** 260; terrestrial; open places at low altitudes.
- 32.15.1      **Trigonospora ciliata** (Benth.) Holttum, **FMu1** 375, **P19** 185; *Thelypteris ciliata* (Wall.) Ching, **H45** 250; terrestrial; on rocks beside montane forest streams; north of Peninsula.

### 33. VITTARIACEAE

- 33.1.1      **Antrophyum callifolium** Blume, **H45** 605, **P19** 433; on rocks and tree trunks; lowland and hill forest.
- 33.1.2      **Antrophyum latifolium** Blume, **H45** 607, **P19** 436; on banks and rocks; montane forest.
- 33.1.3      **Antrophyum parvulum** Blume, **H45** 607, **C13** 207, **P19** 434; usually on limestone
- 33.1.4      **Antrophyum semicostatum** Blume, **H45** 607, **P19** 435; epiphyte; montane forest.



- 33.2.1 **Monogramma dareicarpa** Hook., **H45** 615; low level epiphyte; dark, damp lowland forest; Jh, Sp.
- 33.3.1 **Vaginularia trichoidea** Fée, **T03** 229; *Monogramma trichoidea* (Fée) J.Sm. ex Hook. & Baker, **H45** 616, **P19** 432; on trees and rocks in deep shade; to about 1000 m.
- 33.4.1 **Vittaria angustifolia** Blume, **H45** 610, **P19** 429; on trees and rocks; montane forest.
- 33.4.2 **Vittaria angustissima** Holttum, **H45** 610; epiphyte; Gg Kerbau, Pk, Fraser's Hill, Ph.
- 33.4.3a **Vittaria elongata** Sw. var. **angustifolia** Holttum, *nom. nud.*, **H45** 614; epiphyte; north of Malaya.
- 33.4.3b **Vittaria elongata** Sw. var. **elongata**, **H45** 614, **P19** 431; common epiphyte, occasionally on rocks; to 1200 m.
- 33.4.4a **Vittaria ensiformis** Sw. var. **ensiformis**, **H45** 613, **P19** 430; epiphyte; common on palm trunks with persistent leaf bases; throughout.
- 33.4.4a **Vittaria ensiformis** Sw. var. **latifolia** Holttum, *nom. nud.*, **H45** 614; epiphyte; Pk, Ph, NS, Jh.
- 33.4.5 **Vittaria flexuosa** Fée, **H45** 611; epiphyte; twice collected. Pn, Pk.
- 33.4.6 **Vittaria hirta** Fée, **H45** 609; epiphyte; lowland forest; once collected, Ph.
- 33.4.7 **Vittaria malayensis** Holttum, **H45** 609, **P19** 428; on trees at high altitudes; about 1500 m; Fraser's Hill, Cameron Highlands, Ph; endemic.
- 33.4.8 **Vittaria scolopendrina** (Bory) Thwaites, **H45** 611; on trees by rivers and in swamps.
- 33.4.9 **Vittaria sessilifrons** Miyam. & H. Ohba, **M43** 33; on mossy tree trunks near streams; forest at 200–700 m; Gg Tahan, Ph; endemic.

## 34. WOODSIACEAE

- 34.1.1 **Acystopteris tenuisecta** (Blume) Tagawa, **P19** 289; *Cystopteris tenuisecta* (Blume) Mett., **H45** 540; stream banks and roadsides; Cameron Highlands, Ph.
- 34.2.1 **Athyrium anisopterum** H. Christ, **P19** 290; *Athyrium macrocarpum* auct. non (Blume) Bedd., **H45** 550; on rocks in and near streams in montane forest; Cameron Highlands, Ph.

- 34.2.2 **Athyrium appendiculiferum** Alderw., **H45** 565; damp montane forests; about 1500 m; Cameron Highlands, Ph.
- 34.3.1 **Deparia boryana** (Willd.) M. Kato, **K03** 386, **P11**; *Athyrium boryanum* (Willd.) Tagawa, **H45** 567; in or near hill streams at 300 m–500 m; Pk.
- 34.3.2 **Deparia petersenii** (Kunze) M. Kato ssp. **deflexa** (Kunze) M. Kato, **K03** 425, **P11**; *Athyrium japonicum* (Thunb.) Copel., **H45** 551; *Lunathyrium japonicum* (Thunb.) Kurata, **P19** 291; roadside banks in light shade; Taiping Hills, Pk, Fraser's Hill, Ph.
- 34.4.1 **Diplaziopsis heterophlebia** (Mett. ex Baker) M.G. Price, **P11**; *Athyrium heterophlebium* (Mett. ex Baker) Copel., **H45** 549; *Diplazium heterophlebium* (Mett. ex Baker) Diels, **T03** 451; in forest near streams; about 1000 m; Ulu Sg Bertam, Ph.
- 34.5.1 **Diplazium accedens** Blume, **P19** 303; *Athyrium accedens* (Blume) Milde, **H45** 558; *Callipteris prolifera* (Lam.) Bory, **P11**; by shady streams in the mountains.
- 34.5.2 **Diplazium allantoideum** M.G. Price, **P24** 195, **P11**; *Diplazium silvaticum auct. non* (Bory) Sw., **P19** 307; *Athyrium pinnatum* (Blanco) Copel., **H45** 560; in forests to 1200 m.
- 34.5.3 **Diplazium amplissimum** (Baker) Diels, **H45** 638; *Athyrium amplissimum* (Baker) Holttum, **H45** 569; Cameron Highlands, Ph.
- 34.5.4 **Diplazium angustipinna** (Holttum) Holttum, **P19** 294; *Athyrium angustipinna* Holttum, **H43** 459; in shady hill forest at about 1000 m; Gg Batu Puteh, Pk, Fraser's Hill, Ph; endemic
- 34.5.5 **Diplazium angustisquamatum** (Holttum) Parris, **P08** 118, **P11**; *Athyrium angustisquamatum* Holttum, **H45** 570; twice collected; Genting Simpah, Fraser's Hill, Ph; endemic.
- 34.5.6 **Diplazium bantamense** Blume, **P19** 305; *Athyrium bantamense* (Blume) Milde, **H45** 558; usually in moist hill forest.
- 34.5.7a **Diplazium cordifolium** Blume var. **cordifolium**, **P19** 293; *Athyrium cordifolium* (Blume) Copel., **H45** 548; terrestrial; lowland and montane forest.
- 34.5.7b **Diplazium cordifolium** Blume var. **pariens** (Copel.) C. Chr., **P11**; terrestrial.
- 34.5.8 **Diplazium crenatoserratum** (Blume) T. Moore, **P19** 308; *Athyrium crenatoserratum* (Blume) Milde, **H45** 561; terrestrial; lowland and hill forest to 1000 m.
- 34.5.9 **Diplazium curtisii** (Holttum) Holttum, **H45** 637; *Athyrium curtisii* Holttum, **H43** 560; lowlands; Pk, Sl.

- 34.5.10 **Diplazium dilatatum** Blume, **P19** 316; *Athyrium dilatatum* (Blume) Milde, **H45** 574; near shaded hill streams; 400–1500 m; Fraser's Hill and Cameron Highlands, Ph.
- 34.5.11 **Diplazium donianum** (Mett.) Tardieu, **H45** 637; Fraser's Hill, Ph.
- 34.5.12 **Diplazium esculentum** (Retz.) Sw., **P19** 309; *Athyrium esculentum* (Retz.) Sw., **H43** 562; edible fern of open wet places in the lowlands to 800 m.
- 34.5.13 **Diplazium insigne** Holttum, **H45** 637; *Athyrium insigne* (Holttum) Holttum, **H45** 562; twice collected; Taiping Hills, Pk, Fraser's Hill, Ph; endemic.
- 34.5.14 **Diplazium kunstleri** Holttum, **P19** 310; *Athyrium kunstleri* (Holttum) Holttum, **H45** 564; near shady hill streams at about 1000 m; Ph, Sl, Jh; endemic.
- 34.5.15 **Diplazium latisquamatum** Holttum, **H45** 637; *Athyrium latisquamatum* (Holttum) Holttum, **H45** 563; montane forest near streams; 1000–1500 m; Cameron Highlands and Fraser's Hill, Ph.
- 34.5.16 **Diplazium malaccense** C. Presl, **P19** 297; *Athyrium malaccense* (C. Presl) Holttum, **H45** 552; lowland to mid-montane forest.
- 34.5.17 **Diplazium pallidum** (Blume) T. Moore, **P19** 301; *Athyrium montanum* (Alderw.) Holttum, **H45** 555; shady hill and montane forest.
- 34.5.18 **Diplazium polypodioides** Blume, **T03** 465; *Athyrium asperum* (Blume) Milde, **H45** 571; *Diplazium asperum* Blume, **P19** 313; wet forest edges to 1000 m.
- 34.5.19 **Diplazium prescottianum** (Wall. ex Hook.) T. Moore, **T03** 457; *Athyrium prescottianum* (Wall. ex Hook.) Holttum, **H45** 557; in forests; Pk, Sl, Sp.
- 34.5.20 **Diplazium procumbens** Holttum, **H45** 638; *Athyrium procumbens* (Holttum) Holttum, **H45** 572; streamsides in forest; Fraser's Hill, Ph; endemic.
- 34.5.21 **Diplazium riparium** Holttum, **P19** 300; *Athyrium riparium* (Holttum) Holttum, **H45** 554; stream banks in lowland forests.
- 34.5.22 **Diplazium simplicivenium** Holttum, **P19** 315; *Athyrium simplicivenium* (Holttum) Holttum, **H45** 573; shady forest valleys near streams; 400–1500 m; Pk, Ph.
- 34.5.23 **Diplazium sorzogonense** (C. Presl) C. Presl, **P19** 296; *Athyrium sorzogonense* (C. Presl) Milde, **H45** 552; drier spots in mid- to upper-elevation forests; 600–1400 m.

- 34.5.24a **Diplazium speciosum** Blume var. **major** Bedd., **H45** 560 in synonymy, **P11**; *Athyrium speciosum* (Blume) Milde var. *major* (Bedd.) Holttum, **H45** 560; terrestrial; montane forest; Gg Bubu, Pk; Fraser's Hill, Ph.
- 34.5.24b **Diplazium speciosum** Blume var. **speciosum**, **P19** 306; *Athyrium speciosum* (Blume) Milde, **H45** 559; semi-shade of mountain tops; Gg Tahan, Gg Ulu Kali, Ph.
- 34.5.25 **Diplazium subintegrum** Holttum, **P19** 302; *Athyrium subintegrum* (Holttum) Holttum, **H45** 557; shady montane forest at 1000–1500 m; Main Range and Taiping Hills.
- 34.5.26 **Diplazium subserratum** (Blume) T. Moore, **P19** 292; *Athyrium subserratum* (Blume) Milde, **H45** 546; near shady streams in hills; about 700 m.
- 34.5.27 **Diplazium tomentosum** Blume, **P19** 295; *Athyrium tomentosum* (Blume) T. Moore, **H45** 551; lowland and hill forest to 800 m.
- 34.5.28 **Diplazium velutinum** Holttum, **P19** 312; *Athyrium velutinum* (Holttum) Holttum, **H45** 567; in montane forest at about 1500 m; a few valleys in Cameron Highlands, Ph; endemic.
- 34.5.29 **Diplazium xiphophyllum** (Baker) C. Chr., **P19** 299; *Athyrium xiphophyllum* (Baker) Copel., **H45** 553; lowland and hill forest to 1000 m.
- 34.5.30 **Diplazium sp.**, **P19** 298; dry shady forest slopes; Main Range; endemic.

## 35. ARAUCARIACEAE

- 35.1.1 **Agathis borneensis** Warb., **FM10** 433; *Agathis loranthifolia* Salisb., **FMP5** 278; *Agathis dammara* (Lambert) L.G. Richard, **TFM1** 41; tree to 50 m tall; lowland to lower montane forest; north of Peninsula.
- 35.1.2 **Agathis flavescens** Ridl., **FMP5** 278, **TFM1** 43, **FM10** 438; tree to 12 m tall; upper montane forest; Gg Tahan, Ph; endemic.

## 36. CYCADACEAE

- 36.1.1 **Cycas rumphii** Miq., **FMP5** 284; cycad to 6 m tall; mostly rocky shores; widespread.
- 36.1.2 **Cycas siamensis** Miq., **FMP5** 285, **C13** 218; cycad to 5 m tall; on limestone; north of Malaya.

37. GNETACEAE
- 37.1.1 **Gnetum cuspidatum** Blume, **FMi4** 343; *Gnetum longispica* Ridl., **FMP5** 275; *Gnetum penangense* Ridl., **FMP5** 276; liana; lowland and hill forest; widespread.
- 37.1.2 **Gnetum globosum** Markgr., **M12** 108; scandent shrub; lowland forest; only known from type, Taman Negara, Ph; endemic.
- 37.1.3a **Gnetum gnemon** L. var. **brunonianum** (Griff.) Markgr., **FMi4** 340; *Gnetum brunonianum* Griff., **FMP5** 274; shrub to 3 m tall; lowland to montane forest at 1500 m; widespread.
- 37.1.3b **Gnetum gnemon** L. var. **gnemon**, **FMP5** 273, **FMi4** 340, **TFM1** 54; tree to 20 m tall; rocky coasts and islands, widely cultivated; mostly East Coast.
- 37.1.3c **Gnetum gnemon** L. var. **griffithii** (Parl.) Markgr., **FMi4** 340; shrub; lowland to montane forest; widespread.
- 37.1.3d **Gnetum gnemon** L. var. **tenerum** Markgr., **FMi4** 341; shrub to 3 m tall; lowland and hill forest; Ph southward.
- 37.1.4 **Gnetum gnemonoides** Brongn., **FMi4** 344; *Gnetum wrayi* Gamble, **FMP5** 276; liana; lowland forest; widespread.
- 37.1.5a **Gnetum latifolium** Blume var. **funiculare** (Blume) Markgr., **FMi4** 343; *Gnetum kingianum* Gamble, **FMP5** 276; large liana; lowland forest; widespread.
- 37.1.5b **Gnetum latifolium** Blume var. **latifolium**, **FMP5** 276, **FMi4** 342; large liana; hill forest; Pk, Ph.
- 37.1.6 **Gnetum macrostachyum** Hook.f., **FMP5** 274, **FMi4** 346; liana; lowland forest; widespread.
- 37.1.7 **Gnetum microcarpum** Blume, **FMi4** 346; *Gnetum campestre* (Ridl.) Gamble ex Ridl., **FMP5** 275; *Gnetum sylvestre* (Ridl.) Gamble ex Ridl., **FMP5** 275; slender liana; lowland and hill forest; widespread.
- 37.1.8 **Gnetum ridleyi** Gamble ex Markgr., **FMi4** 344; large liana; Telom, Ph; endemic.
- 37.1.9 **Gnetum tenuifolium** Foxw., **FMP5** 277, **FMi4** 342; slender liana; lowland forest; widespread.

## 38.           PODOCARPACEAE

- 38.1.1       **Dacrycarpus imbricatus** (Blume) de Laub. var. **patulus** de Laub., **FM10** 379; *Podocarpus imbricatus* Blume, **FMP5** 283, **TFM1** 51; tree 5 m–40 m tall; montane forest above 750 m; Kd, Pk, Ph, Sl.
- 38.2.1       **Dacrydium beccarii** Parl., **FMP5** 280, **TFM1** 46, **FM10** 366; shrub or tree to 20 m tall; montane forest, lower altitudes on poor soils; Kd, Kl, Pk, Ph, Sl, Ml, Jh.
- 38.2.2       **Dacrydium comosum** Corner, **TFM1** 46, **FM10** 370; shrub or small tree to 12 m tall; upper montane forest at 1440–2200 m; Ph, Sl; endemic.
- 38.2.3       **Dacrydium elatum** (Roxb.) Wall. ex Hook., **FMP5** 279, **TFM1** 46, **FM10** 363; *Dacrydium beccarii* Parl. var. *subelatum* Corner, **TFM1** 46; tree to 40 m tall; montane forests at 500–1500 m; Kd, Pn, Kl, Pk, Ph, Sl, Ml.
- 38.2.4       **Dacrydium medium** de Laub., **FM10** 368; shrub or gnarled tree to 20 m tall; montane forest at 960–2100 m; Kd, Kl, Pk, Ph.
- 38.3.1       **Falcatifolium falciforme** (Parl.) de Laub., **FM10** 372; *Dacrydium falciforme* (Parl.) Pilg., **FMP5** 280, **TFM1** 46; shrub or large tree to 36 m tall; montane forest; Tg, Ph.
- 38.4.1       **Nageia motleyi** (Parl.) de Laub., **FM10** 393; *Podocarpus motleyi* (Parl.) Dummer, **TFM1** 51; tree to 40 m tall; swampy lowland forest; Pk, Ph, Sl, Jh.
- 38.4.2       **Nageia wallichiana** (Presl) Kuntze, **FM10** 391; *Podocarpus blumei* Endl., **FMP5** 281; *Podocarpus wallichianus* Presl, **TFM1** 53; tree to 40 m tall; hill and montane forest; Kd, Kl, Pk, Ph, Sl, Jh.
- 38.5.1       **Podocarpus deflexus** Ridl., **FMP5** 283, **TFM1** 48, **FM10** 403; shrub or small tree to 10 m tall; upper montane forest; Gg Tahan, Ph.
- 38.5.2       **Podocarpus neriifolius** D. Don, **FMP5** 281, **TFM1** 51, **FM10** 400; tree to 40 m tall; hill and montane forest; Kd, Pn, Pk, Ph, Sl, Ml, Jh.
- 38.5.3       **Podocarpus polystachyus** R.Br. ex Endl., **FMP5** 282, **TFM1** 53, **FM10** 417; shrub or tree to 20 m tall, coastal vegetation, sometimes inland; Pk, Ph, Sl, Jh, Sp.
- 38.5.4       **Podocarpus ridleyi** (Wasscher) N.E. Gray, **FM10** 419; *Podocarpus neriifolius* D. Don var. *ridleyi* Wasscher, **TFM1** 51; tree 4–24 m tall; isolated mountain peaks; scattered; endemic.
- 38.5.5       **Podocarpus rumphii** Blume, **FM10** 415; tree to 40 m tall; montane forest; Genting Highlands, Ph/Sl.

- 38.5.6 **Podocarpus teysmanii** Miq., **FM10** 406; tree to 12 m tall; lowland forest; scattered.

## 39. ACANTHACEAE

- 39.1.1 **Acanthus ebracteatus** Vahl, **FMP2** 577; spreading shrub to 3 m tall; mangroves, tidal mud; widespread.
- 39.1.2 **Acanthus ilicifolius** L., **FMP2** 577; spreading shrub to 1.5 m tall; mangroves; commoner in the north.
- 39.1.3 **Acanthus volubilis** Wall., **FMP2** 577; trailing shrub; tidal mud; scattered.
- 39.2.1 **Andrographis paniculata** (Burm.f.) Wall. ex Nees, **FMP2** 582; herb to 1 m tall; waste ground; widespread, possibly only native in the far north.
- 39.2.2 **Andrographis laxiflora** (Blume) Lindau, **H05** 353; *Andrographis tenuiflora* T. Anderson, **FMP2** 582, **C13** 70; herb to 60 cm tall; on limestone; P. Langkawi, Kd.
- 39.3.1 **Asystasia gangetica** (L.) T. Anderson, **B31** 78; *Asystasia coromandeliana* Nees, **FMP2** 586; creeping or climbing herb; waste areas, sometimes cultivated; naturalized from India.
- 39.3.2 **Asystasia nemorum** Nees, **K09** 187; *Asystasia intrusa* Blume, **FMP2** 585; scrambling herb to 2 m tall; waste ground, roadsides; throughout.
- 39.4.1 **Barleria conspicua** Nees, **FMP2** 588; tall herb; once from Pn, endemic.
- 39.4.2 **Barleria prionitis** L., **FMP2** 587; prickly shrub to 75 cm tall; dry spots; Ps, Ml.
- 39.4.3 **Barleria siamensis** Craib var. **glabrescens** Ridl., **FMP2** 588, **C14** 71; herb to 30 cm tall; on limestone; P. Dayang Bunting (Langkawi); endemic variety.
- 39.5.1 **Chroesthes longifolia** (Wight) B. Hansen, **H04** 210; *Lepidagathis longifolia* Wight, **FMP2** 587; shrub to 2.5 m; lowland forest; widespread.
- 39.6.1 **Cosmianthemum knoxiifolium** (C.B. Clarke) B. Hansen, **H06** 195; *Gymnostachyum knoxiifolium* C.B. Clarke, **FMP2** 581; *Ptyssiglottis parviflora* (Ridl.) Ridl., **FMP2** 604; *Sphinctacanthus malayanus* Ridl., **FMP2** 607; shrub about 60 cm tall; hill forest; Sl, NS.
- 39.7.1 **Dicliptera rosea** Ridl., **FMP2** 608, **C14** 71; subshrub to 30 cm tall; on limestone; north of Malaya; endemic.
- 39.8.1 **Filetia bracteosa** C.B. Clarke, **FMP2** 584; shrub to 1 m tall; open spots in montane forest; Pk, Ph; endemic.

- 39.8.2 **Filetia glabra** Ridl., **FMP2** 584; shrub; montane forest; Gg Mengkuang Lebah, Sl; endemic.
- 39.8.3 **Filetia hirta** Ridl., **FMP2** 585; herb to 30 cm tall, rootstock slightly woody; clearings in the mountains; Ph, Sl; endemic.
- 39.8.4 **Filetia paniculata** C.B. Clarke, **FMP2** 584; shrub about 30 cm tall; Pk.
- 39.8.5 **Filetia ridleyi** C.B. Clarke, **FMP2** 585; herb; clearings in the mountains; Pk, Ph, Sl; endemic.
- 39.8.6 **Filetia scortechinii** C.B. Clarke, **FMP2** 584; spreading shrub; montane forest; Pk, Sl; endemic.
- 39.9.1 **Gymnostachyum ceylanicum** Arn. & Nees, **FMP2** 580; herb; P. Langkawi.
- 39.9.2a **Gymnostachyum decurrens** Stapf var. **decurrens**, **FMP2** 579, **C14** 71; short-stemmed herb; shady places, including limestone; scattered; endemic.
- 39.9.2b **Gymnostachyum decurrens** Stapf var. **robinsonii** (Ridl.) J.B. Imlay, **I02** 127; *Gymnostachyum robinsonii* Ridl., **FMP2** 579, **C14** 71; creeping herb ascending to 8 cm; on limestone; once from P. Datang Bunting (Langkawi); endemic.
- 39.9.3 **Gymnostachyum diversifolium** C.B. Clarke, **FMP2** 579, **C14** 71; creeping herb ascending to 15 cm tall; forests, sometimes on limestone; P. Langkawi, Kl, Pk; endemic.
- 39.9.4 **Gymnostachyum hirtistylum** C.B. Clarke, **FMP2** 580; herb to 30 cm tall; once from Pk.
- 39.9.5 **Gymnostachyum hirtum** Ridl., **R14** 474; short-stemmed herb to 30 cm tall; near Kuala Kangsar, Pk; endemic.
- 39.9.6 **Gymnostachyum insulare** Ridl., **FMP2** 582; herb to 60 cm tall; P. Langkawi; endemic.
- 39.9.7 **Gymnostachyum magis-nervatum** C.B. Clarke, **FMP2** 580; herb to 60 cm tall; wet places; Larut, Pk; endemic.
- 39.9.8 **Gymnostachyum magnum** C.B. Clarke, **FMP2** 581; shrub; lowland forest; Pk, NS; endemic.
- 39.9.9 **Gymnostachyum pallens** C.B. Clarke, **FMP2** 580; creeping shrub; Pk; endemic.
- 39.9.10 **Gymnostachyum ridleyi** C.B. Clarke, **FMP2** 581; large shrub; lowland forest; Pk, Sl; endemic.
- 39.9.11 **Gymnostachyum scortechinii** C.B. Clarke, **FMP2** 581; herb to 45 cm tall; Pk; endemic.



- 39.9.12 **Gymnostachyum simplicicaule** C.B. Clarke, **FMP2** 580; herb about 20 cm tall; Sg Raya, Pk; endemic.
- 39.10.1a **Hemigraphis brunelloides** (Lam.) Bremek. var. **brunelloides**, **B26** 90; *Hemigraphis confinis* T. Anderson var. *hirsuta* Ridl., **FMP2** 570; herb.
- 39.10.1b **Hemigraphis brunelloides** (Lam.) Bremek. var. **vahliana** Bremek., **B26** 91; herb; Ml.
- 39.10.2 **Hemigraphis confinis** T. Anderson, **FMP2** 569; herb to 60 cm tall; roadsides; NS, Ml.
- 39.10.3 **Hemigraphis hispidula** Craib, **FMP2** 569 '*hispidula*', **B26** 100; prostrate creeping herb; Kuala Aring, Kl.
- 39.10.4 **Hemigraphis platycarpus** C.B. Clarke, **FMP2** 570; herb to 30 cm tall; open grassy places; widespread.
- 39.10.5 **Hemigraphis primulifolia** (Nees) Fern.-Vill., **B26** 117, **T05** 128; herb to 10 cm tall; weed of damp shady places; Sp; naturalized from the Philippines.
- 39.10.6 **Hemigraphis ridleyi** C.B. Clarke, **FMP2** 569; creeping herb; open places; mostly in the north.
- 39.10.7a **Hemigraphis sumatrensis** (Heyne ex Roth) Boerl. ex Bremek. var. **rothiana** Bremek., **B26** 97; *Hemigraphis alternata auct. non* (Burm.f.) T. Anderson, **FMP2** 570 in part; slender herb to 30 cm tall, open places; widespread.
- 39.10.7b **Hemigraphis sumatrensis** (Heyne ex Roth) Boerl. ex Bremek. var. **sumatrensis**, **B26** 97; *Hemigraphis alternata auct. non* (Burm.f.) T. Anderson, **FMP2** 570 in part; slender herb to 30 cm tall; open places; widespread.
- 39.11.1 **Hygrophila meianthos** C.B. Clarke, **FMP2** 566; herb to 30 cm tall; wet grassy places; Ml, Sp.
- 39.11.2a **Hygrophila phlomoides** Nees var. **angusta** Ridl., **FMP2** 567; herb; wet lowland forest; Kl; endemic variety.
- 39.11.2b **Hygrophila phlomoides** Nees var. **phlomoides**, **FMP2** 567; herb to 1 m tall; common in wet places; widespread.
- 39.11.2c **Hygrophila phlomoides** Nees var. **roxburghii** C.B. Clarke, **FMP2** 567; small, often procumbent, herb; Pn.
- 39.11.3 **Hygrophila polysperma** (Nees) T. Anderson, **FMP2** 565; small procumbent herb to 20 cm tall; Ml.
- 39.11.4 **Hygrophila pusilla** Blume, **B03** 570; *Hygrophila saxatilis* Ridl., **FMP2** 566; tufted herb 8–15 cm tall; on rocks in rivers; Kl, Ph, Jh.

- 39.11.5 **Hygrophila ringens** (L.) R.Br. ex Steud., **N11** 39; *Hygrophila angustifolia* R.Br., **FMP2** 566; *Hygrophila quadrivalvis* Buch.-Ham., **FMP2** 566; *Hygrophila erecta* (Burm.f.) Hochr., **B31** 66, **K09** 189; herb to 1 m tall; damp waste ground; widespread.
- 39.11.6 **Hygrophila schulli** (Buch.-Ham.) M.R. Almeida & S.M. Almeida, **N11** 40; *Hygrophila spinosa* T. Anderson, **FMP2** 567; spiny herb to 1.5 m tall; waste ground; Sp; naturalized from India.
- 39.11.7 **Hygrophila stricta** (Vahl) Lindau; *Nomaphila stricta* (Vahl) Nees; **FMP2** 568 incl. vars. *minor* (C.B. Clarke) Ridl. and *corymbosa* (Blume) Ridl.; herb to 1 m tall; seasonally wet places, ricefields; widespread.
- 39.11.8 **Hygrophila subsessilis** C.B. Clarke, **FMP2** 567; herb to 30 cm tall; Ml; endemic.
- 39.12.1 **Hypoestes malaccensis** Wight, **FMP2** 610; herb to 30 cm tall; waste ground; Ml.
- 39.13.1 **Justicia alternifolia** C.B. Clarke, **FMP2** 601; shrub to 1 m tall; Ulu Slim, Pk; endemic.
- 39.13.2 **Justicia gendarussa** Burm.f., **G15** 589; *Gendarussa vulgaris* Nees, **FMP2** 593; shrub to 1.5 m; around villages, established as escape from cultivation.
- 39.13.3 **Justicia henicophylla** C.B. Clarke, **FMP2** 601 incl. vars. *caudata* C.B. Clarke & *scandens* C.B. Clarke, **C14** 72; herb to 1 m tall; often on limestone; Pk, Ph; endemic.
- 39.13.4 **Justicia inconspicua** Ridl., **FMP2** 602; tall straggling herb; East coast and islands; endemic.
- 39.13.5 **Justicia lancifolia** Ridl. ex S. Moore, **FMP2** 600; herb to 25 cm tall; lowland forest; Sl; endemic.
- 39.13.6 **Justicia maingayi** C.B. Clarke, **FMP2** 600; herb to 60 cm tall; Penang Hill; endemic.
- 39.13.7 **Justicia ochroleuca** Blume, **H11** 210; *Justicia patulinervis* C.B. Clarke, **FMP2** 595; *Justicia laetevirens* (non Vahl) Ridl., **FMP2** 596; herb to 60 cm tall; lowland forest; ?Pk, Ph.
- 39.13.8 **Justicia otophora** C.B. Clarke, **FMP2** 601; scandent herb; river sides; Pk, endemic.
- 39.13.9 **Justicia ovalis** Ridl., **FMP2** 600; herb to 45 cm tall; P. Tioman, endemic.
- 39.13.10 **Justicia procumbens** L., **G15** 597; *Rostellularia procumbens* (L.) Nees, **FMP2** 602; small herb; open sandy spots; Pn, NS.

- 39.13.11 **Justicia ptychostoma** Nees, **FMP2** 594 incl. vars. *angustifolia* C.B. Clarke, *auriculata* C.B. Clarke, *parvibracteata* C.B. Clarke & *rotundifolia* C.B. Clarke; herb to 30 cm tall; open dry places including limestone; north of Malaya; endemic.
- 39.13.12 **Justicia pubiflora** C.B. Clarke, **FMP2** 596; herb to 1 m tall; lowland and hill forest; Pk, Jh; endemic.
- 39.13.13 **Justicia quadrifaria** (Nees) T. Anderson, **G15** 593; *Calophanoides quadrifaria* (Nees) Ridl., **FMP2** 593; herb to 60 cm; common in rocky or sandy areas; widespread.
- 39.13.14 **Justicia remotifolia** Ridl., **FMP2** 600; slender; straggling herb to 60 cm tall; Temerloh, Ph; endemic.
- 39.13.15 **Justicia robinsonii** Ridl., **FMP2** 597, **C14** 73; shrubby herb; on limestone; P. Dayang Bunting (Langkawi); endemic.
- 39.13.16 **Justicia rupestris** Ridl., **FMP2** 595, **C14** 73; herb to 50 cm tall; on limestone; once from Bt Lagi, Ps; endemic.
- 39.13.17 **Justicia scortechinii** C.B. Clarke, **FMP2** 595; herb; hill forest; Maxwell's Hill, Pk; endemic.
- 39.13.18 **Justicia subalternans** C.B. Clarke, **FMP2** 601, **C14** 73; shrub to 1.5 m tall; on limestone; once from Kinta, Pk; endemic.
- 39.13.19 **Justicia subcymosa** C.B. Clarke, **FMP2** 596; herb to 1 m tall; forest, also on limestone; mostly in the north; endemic.
- 39.13.20 **Justicia sumatrana** C.B. Clarke, **FMP2** 600; bushy herb; montane forest; Kl, Pk.
- 39.13.21 **Justicia uber** C.B. Clarke, **FMP2** 599; shrub to 1.5 m tall; lowland forest, occasionally on limestone; widespread; endemic.
- 39.13.22 **Justicia valida** Ridl., **FMP2** 599, **C14** 73; shrublet to 60 cm tall; on limestone; Gg Keriang, Kd.
- 39.13.23 **Justicia vasculosa** Wall., **FMP2** 598; weak straggling herb to 30 cm tall; lowland forest; widespread.
- 39.13.24 **Justicia sp.**, **H12** 54; *Ptyssiglottis rubrolutea* (Ridl.) Ridl., **FMP2** 605; slender creeping herb; lowland forest; Kl; endemic.
- 39.14.1 **Lepidagathis incurva** Buch.-Ham. ex D. Don, **FMP2** 586; creeping wiry herb ascending to 1 m; open places, waste ground; common in the north.
- 39.14.2 **Lepidagathis macrantha** C.B. Clarke, **FMP2** 587; herb; Pk.

- 39.14.3 **Lepidagathis yappii** Ridl., **FMP2** 586; herb to 30 cm tall; montane forest; Gg Inas, Pk; endemic.
- 39.15.1 **Nelsonia canescens** (Lam.) Spreng., **B29** 248; *Nelsonia campestris* R.Br., **FMP2** 558; creeping herb; open heathy country; Ps, Kd, Pn, Ph.
- 39.16.1 **Pararuellia sumatrensis** (C.B. Clarke) Bremek. var. **ridleyi** (C.B. Clarke) Bremek., **B32** 28; *Aporuella sumatrensis* C.B. Clarke var. *ridleyi* C.B. Clarke, **FMP2** 564, **C14** 71; herb to 30 cm tall; on limestone; Gua Batu, Sl; endemic variety.
- 39.17.1a **Peristrophe acuminata** Nees var. **acuminata**, **FMP2** 609; herb to 1 m tall; waste ground; widespread.
- 39.17.1b **Peristrophe acuminata** Nees var. **salicifolia** (Miq.) Ridl., **FMP2** 609; herb to 1 m tall; waste ground; Pn, Pk.
- 39.17.2 **Peristrophe roxburghiana** (Schult.) Bremek., **K09** 189; *Peristrophe baphica* (Spreng.) Bremek., **B31** 80; *Peristrophe tinctoria* Nees, **FMP2** 609; herb to 1 m tall; shady waste ground; scattered along West Coast.
- 39.18.1 **Phialacanthus major** C.B. Clarke, **FMP2** 583; shrub to 2 m tall; montane forest; Gg Batu Puteh, Pk; endemic.
- 39.18.2 **Phialacanthus minor** C.B. Clarke, **FMP2** 583; shrub; montane forest; Pk; endemic.
- 39.18.3 **Phialacanthus pauper** (C.B. Clarke) Bremek., **B29** 256; *Staurogyne pauper* C.B. Clarke, **FMP2** 561; herb to 1 m tall; lowland forest; Larut, Pk; endemic.
- 39.18.4 **Phialacanthus wrayi** C.B. Clarke, **FMP2** 583; shrub to 1 m tall; montane forest; Gg Batu Puteh, Pk; endemic.
- 39.19.1 **Phlogacanthus brevis** C.B. Clarke, **FMP2** 578, **H12** 54; *Ptyssiglottis flava* (Ridl.) Ridl., **FMP2** 605; herb to about 1 m; swamp forest; Pk; endemic.
- 39.20.1 **Pseuderanthemum breviflos** (C.B. Clarke) Ridl., **FMP2** 590; subshrub to 20 cm tall; Gopeng, Pk; endemic.
- 39.20.2 **Pseuderanthemum candidum** (Ridl.) Ridl., **FMP2** 590; herb to 60 cm tall; by forest streams; Ulu Gombak, Sl; endemic.
- 39.20.3 **Pseuderanthemum caudifolium** (C.B. Clarke) Ridl., **FMP2** 590; shrub to 2 m tall; lowland forest; Pk; endemic.
- 39.20.4 **Pseuderanthemum crenulatum** (Lindl.) Radlk., **FMP2** 589; subshrub to 50 cm tall; lowland forest, also on limestone; widespread.
- 39.20.5 **Pseuderanthemum graciliflorum** (Nees) Ridl., **FMP2** 591, **H11** 213; shrub to 2 m; common in lowland forests; widespread.

- 39.20.6 **Pseuderanthemum hirtipistillum** Ridl., **FMP2** 589; subshrub to 60 cm tall; Tapah, Pk; endemic.
- 39.20.7 **Pseuderanthemum kingii** (C.B. Clarke) Ridl., **FMP2** 591; slender herb to 30 cm tall; damp lowland forest; Jh, Sp; endemic.
- 39.20.8 **Pseuderanthemum latifolium** (Vahl) B. Hansen, **H11** 213; herb.
- 39.20.9 **Pseuderanthemum lilacinum** Stapf, **FMP2** 591; dubious species described from plant grown at Kew collected from Batu Caves, Sl.
- 39.20.10 **Pseuderanthemum selangorensis** (C.B. Clarke) Ridl., **FMP2** 590; shrub; lowlands; Sl; endemic.
- 39.20.11 **Pseuderanthemum sylvestre** Ridl., **FMP2** 591; shrub; lowland forest; Sg Buloh, Sl; endemic.
- 39.20.12 **Pseuderanthemum teijsmannii** (T. Anderson) Ridl., **FMP2** 592; sprawling bush; lowland forest; scattered; endemic.
- 39.21.1 **Ptyssiglottis cuprea** (Ridl.) B. Hansen, **H12** 40; *Polytrema cuprea* Ridl., **FMP2** 607, **C14** 74; prostrate herb to 10 cm tall; on limestone; only known from near Ipoh, Pk; endemic.
- 39.21.2 **Ptyssiglottis isophylla** (C.B. Clarke) B. Hansen, **H12** 45; *Polytrema isophyllum* C.B. Clarke, **FMP2** 606; herb to 70 cm tall; Pk, Ph, Sl.
- 39.21.3 **Ptyssiglottis kunthiana** (Nees) B. Hansen, **H12** 42; *Polytrema vulgare* C.B. Clarke, **FMP2** 606; *Polytrema crenulatum* C.B. Clarke, **FMP2** 606; *Polytrema aequale* Ridl., **FMP2** 607 incl. var. *minor* Ridl.; herb to 40 cm; lowland forest to 200 m, often on limestone; widespread.
- 39.21.4 **Ptyssiglottis subcordata** (C.B. Clarke) S. Moore, **FMP2** 604, **H12** 32; *Polytrema repens* Ridl., **FMP2** 607; *Isoglossa subcordata* (C.B. Clarke) B. Hansen, **H05** 8; herb to 50 cm; hill forests; Pk; endemic.
- 39.21.5 **Ptyssiglottis chrysea** (Ridl.) Ridl., **FMP2** 605; creeping herb ascending to 15 cm; montane forest; Ulu Gombak, Sl; endemic.  
[**H12** excludes from *Ptyssiglottis*]
- 39.21.6 **Ptyssiglottis densiflora** (C.B. Clarke) Ridl., **FMP2** 604; decumbent subshrub to 20 cm tall; montane forest; Gg Tungol, Pk; endemic.  
[**H12** excludes from *Ptyssiglottis*]
- 39.21.7 **Ptyssiglottis radicans** (C.B. Clarke) S. Moore, **FMP2** 605; creeping herb; lowland forest; Ulu Selama, Pk; endemic.  
[**H12** excludes from *Ptyssiglottis*]
- 39.22.1 **Rhinacanthus nasutus** (L.) Kurz, **B03** 585; *Rhinacanthus communis* Nees, **FMP2** 603; shrub to 2 m tall; open places; chiefly in the north.

- 39.23.1 **Ruellia prostrata** Poir., **FMP2** 564; *Dipteracanthus prostratus* (Poir.) Nees, **B30** 16; creeping herb; sea shore; P. Song Song, Kd.
- 39.23.2 **Ruellia repens** L., **FMP2** 564; *Dipteracanthus repens* (L.) Hassk., **B32** 18; creeping herb; grassy places; common and widespread.
- 39.23.3 **Ruellia malasica** (C.B. Clarke) J.B. Imlay, **I02** 112; *Aporuella axillaris* C.B. Clarke, **FMP2** 565; *Acanthopale malasica* C.B. Clarke, **FMP2** 576; *Dipteracanthus ventricosus* Nees, **B32** 20; herb of limestone.
- 39.23.4 **Ruellia tuberosa** L., **M31** 132, **B03** 557; herb; commoner in the north; naturalized from the West Indies.
- 39.24.1 **Rungia laxiflora** C.B. Clarke, **H10** 206; *Justicia bracteata* Ridl., **FMP2** 597; *Justicia breviflos* Ridl., **FMP2** 597; *Justicia clarkeana* Ridl., **FMP2** 599; *Justicia microcarpa* Ridl., **FMP2** 599; *Justicia pectinella* Ridl., **FMP2** 598; *Justicia secundiflora* Ridl., **FMP2** 598; herb to 1 m tall; lowlands and mountains; widespread.
- 39.24.2 **Rungia minutiflora** C.B. Clarke, **FMP2** 602, **C14** 74; slender herb to 25 cm tall; on limestone; twice from P. Langkawi; endemic.
- 39.24.3 **Rungia pectinata** (L.) Nees, **FMP2** 603; herb to 15 cm tall; open sandy places; Kangar, Ps; endemic.
- 39.24.4 **Rungia selangorensis** (C.B. Clarke) B. Hansen, **H11** 213, **H10** 213; *Justicia selangorensis* C.B. Clarke, **FMP2** 596; robust herb; lowland forest; P. Langkawi, Sl; endemic.
- 39.24.5 **Rungia vegeta** (Ridl.) B. Hansen, **H11** 213, **H10** 213; *Justicia vegeta* Ridl., **FMP2** 596; large herb; montane forest; G. Mengkuang Lebah, Sl; endemic.
- 39.25.1 **Staurogyne arcuata** C.B. Clarke, **FMP2** 561, **B29** 184; small herb to 20 cm tall; montane forest; Pk, Ph.
- 39.25.2 **Staurogyne condensata** (Ridl.) Bremek., **B29** 206; *Staurogyne longifolia* (Nees) Kuntze var. *condensata* Ridl., **FMP2** 560; only known from type; Kuala Lebir, Kl; endemic.
- 39.25.3 **Staurogyne cremostachya** Bremek., **B29** 202; *Staurogyne comosa* (Wall.) Kuntze *nom. illeg.*, **FMP2** 560; herb to 40 cm tall; hill forest; Tg. Pn, Pk, Ph, Sl.
- 39.25.4 **Staurogyne griffithiana** (Nees) Kuntze, **FMP2** 561, **B29** 181; small herb to 20 cm tall; lowland forests; Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 39.25.5a **Staurogyne kingiana** C.B. Clarke var. *kingiana*, **FMP2** 560, **B29** 193; herb to 70 cm tall; lowland and hill forest; Kl, Tg, Pk, Ph, Jh, Sp.

- 39.25.5b **Staurogyne kingiana** C.B. Clarke var. **magnifolia** Bremek., **B29** 193; herb to 70 cm tall; Kl; endemic variety.
- 39.25.6 **Staurogyne lanceolata** (Blume) Kuntze var. **scabridula** Bremek., **B29** 208; herb to 30 cm tall; Ps, Kd; endemic variety.
- 39.25.7 **Staurogyne lasiobotrys** (Nees) Kuntze, **FMP2** 561, **B29** 195; herb to 60 cm tall; lowland and hill forest; Kd, Kl, Pn, Pk, Ph, NS.
- 39.25.8 **Staurogyne longifolia** (Nees) Kuntze, **FMP2** 560, **B29** 200; *Staurogyne lanceolata* auct. non (Blume) Kuntze, **FMP2** 559; *Staurogyne angustifolia* auct. non Wall., **FMP2** 560; herb to 50 cm tall; lowland forest to 300 m; Pk, Ph, Sl, NS, Ml, Jh.
- 39.25.9 **Staurogyne longispica** (Ridl.) Ridl., **FMP2** 563, **B29** 222; herb to 60 cm tall; montane forest; Sl, NS.
- 39.25.10a **Staurogyne malaccensis** C.B. Clarke var. **malaccensis**, **B29** 205; *Staurogyne malaccensis* C.B. Clarke, **FMP2** 559 in part; forest herb to 20 cm tall; Ml.
- 39.25.10b **Staurogyne malaccensis** C.B. Clarke var. **stenophylla**, **B29** 205; *Staurogyne malaccensis* C.B. Clarke, **FMP2** 559 in part; forest herb to 20 cm tall; Kd, Kl, Pn.
- 39.25.11 **Staurogyne merguensis** (T. Anderson) Kuntze, **FMP2** 562, **B29** 226; herb to 25 cm tall; lowland forest; Kd, Kl, Pk, Ph.
- 39.25.12 **Staurogyne racemosa** (Roxb.) Kuntze, **FMP2** 562, **B29** 232; herb to 45 cm tall; hill forest at 600–750 m; Penang Hill; endemic.
- 39.25.13 **Staurogyne scopulicola** Kiew, **K35** 245; prostrate herb; shaded sandstone cliff; Gg Keriong, Ph; endemic.
- 39.25.14a **Staurogyne setigera** (Nees) Kuntze var. **grandis** Bremek., **B29** 189; *Staurogyne setigera* (Nees) Kuntze, **FMP2** 559 in part; forest herb to 30 cm tall; Ph, Jh.
- 39.25.14b **Staurogyne setigera** (Nees) Kuntze var. **setigera**, **B29** 188; *Staurogyne setigera* (Nees) Kuntze, **FMP2** 559 in part; forest herb to 20 cm tall; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 39.25.15 **Staurogyne subglabra** C.B. Clarke, **FMP2** 562, **B29** 199; herb to 60 cm tall; usually montane forest at 1000–1500 m. Pk, Ph, Sl.
- 39.25.16 **Staurogyne viscida** (Ridl.) Bremek., **B29** 169; *Limnophila viscida* Ridl., **FMP2** 478; small herb to 15 cm tall, rice fields; Ps; endemic.
- 39.26.1 **Stenothyrsus ridleyi** C.B. Clarke, **FMP2** 568, **C14** 74; tall herb; on limestone; near Ipoh, Pk; endemic.

- 39.27.1 ***Strobilanthes albostrata*** Ridl., **FMP2** 574; herb to 30 cm tall; montane forest; Pk, Ph; endemic.
- 39.27.2 ***Strobilanthes bibracteata*** Blume, **FMP2** 572; herb to 1.5 m tall; montane forest; Pk.
- 39.27.3 ***Strobilanthes collina*** Nees, **FMP2** 575; herb to 1 m tall; montane forest; Pk northward.
- 39.27.4 ***Strobilanthes hirtisepala*** C.B. Clarke, **FMP2** 572; herb to 1.5 m tall; montane forest; Kd, Pk, Ph, Sl; endemic.
- 39.27.5 ***Strobilanthes latebrosa*** Ridl., **FMP2** 573; shrub to 2 m tall; lowland forest; Bt Tangga, NS; endemic.
- 39.27.6 ***Strobilanthes leucopogon*** Ridl., **FMP2** 575; large herb; P. Langkawi; endemic.
- 39.27.7 ***Strobilanthes maingayi*** C.B. Clarke, **FMP2** 571; shrubby herb to 1 m tall; mostly in hill forest; Pn, Pk, Ph, Sl, Sp.
- 39.27.8 ***Strobilanthes pachyphylla*** C.B. Clarke, **FMP2** 575; shrub to 1 m tall; limestone; once from Gg Mesah, Pk; endemic.
- 39.27.9 ***Strobilanthes palawanensis*** Elmer, **T10** 120; *Endopogon ridleyi* C.B. Clarke, **FMP2** 570; herb to 30 cm tall; lowland forest; Sp.
- 39.27.10 ***Strobilanthes pateriformis*** Lindau, **T09** 34; *Strobilanthes phoenicea* Ridl., **FMP2** 575; herb to 60 cm tall; lowland and hill forest to 1600 m, often near streams; Pk.
- 39.27.11 ***Strobilanthes pedicellata*** Ridl., **FMP2** 576; herb; montane forest; Ph; endemic.
- 39.27.12 ***Strobilanthes peninsularis*** Terao, **T10** 123; shrub to 90 cm; P. Langkawi.
- 39.27.13 ***Strobilanthes ruficapillis*** Ridl., **FMP5** 326; creeping herb ascending to 50 cm; Raub, Ph; endemic.
- 39.27.14 ***Strobilanthes ruficaulis*** Ridl., **FMP2** 573; herb to 30 cm tall; montane forest; Gg Berembun, Ph; endemic.
- 39.27.15 ***Strobilanthes rufocapitata*** C.B. Clarke, **FMP2** 574; shrubby creeper; on rocks in the mountains; Pk; endemic.
- 39.27.16 ***Strobilanthes rufopauper*** C.B. Clarke, **FMP2** 573; herb; montane forest; Pk, Ph; endemic.
- 39.27.17 ***Strobilanthes rufosepala*** C.B. Clarke, **FMP2** 573; decumbent herb to 50 cm tall; hill forest; Pn, Pk; endemic.



- 39.27.18 **Strobilanthes rufostrobilata** C.B. Clarke, **FMP2** 573; herb to 30 cm tall; Pk; endemic.
- 39.27.19 **Strobilanthes scabrida** Ridl., **FMP2** 574; herb to 30 cm tall; montane forest; Ph, Sl; endemic.
- 39.27.20 **Strobilanthes sylvestris** Ridl., **FMP2** 575; herb to 60 cm tall; lowland forest; Pk; endemic.
- 39.27.21 **Strobilanthes vulpina** Ridl., **FMP2** 574; herb to 30 cm tall; montane forest; Ph; endemic.
- 39.28.1a **Thunbergia alata** Boj. ex Sims ssp. *alata*, **B30** 42; *Thunbergia alata* Boj. ex Sims, **FMP2** 557 in part; herbaceous vine; waste places; naturalized from Africa.
- 39.28.1b **Thunbergia alata** Boj. ex Sims ssp. *reticulata* (Hochst. ex Nees) Bremek., **B30** 42; *Thunbergia alata* Boj. ex Sims, **FMP2** 557 in part; herbaceous vine; waste places; naturalized from Africa.
- 39.28.2 **Thunbergia crispula** Bremek., **B30** 53; *Thunbergia fragrans* Roxb. var. *javanica* (Gaertn.) C.B. Clarke, **FMP2** 557 in part; climber; sometimes on limestone; Kl, Pk, Ph, Sl; endemic.
- 39.28.3 **Thunbergia dasychlamys** Bremek., **B30** 53; climber; only known from Sp; endemic.
- 39.28.4 **Thunbergia grandiflora** (Roxb. ex Rottl.) Roxb., **FMP2** 557, **B30** 45; liana; Sp; naturalized from South Asia.
- 39.28.5 **Thunbergia hebecocca** Bremek., **B30** 56; *Thunbergia fragrans* Roxb. var. *javanica* (Gaertn.) C.B. Clarke, **FMP2** 557 in part; climber; P. Langkawi, Kl, Pn; endemic.
- 39.28.6 **Thunbergia laurifolia** Lindl., **FMP2** 556, **B30** 47; stout liana; forests and open country; Kd, Kl, Pg, Pk, Ph, Ml, Sp.
- 39.28.7 **Thunbergia trachychlamys** Bremek., **B30** 52; climber; Ps, Pk; endemic.
- 39.29.1 **Thysanostigma odontites** (Ridl.) B. Hansen, **H09** 228; *Justicia odontites* Ridl., **FMP2** 598; *Justicia trichodes* Ridl., **R14** 475; *Justicia johorensis* J. Sinclair, **S25** 18; herb about 60 cm tall; lowland forests; Sl, Jh; endemic.

The following species have also been recorded from the Malay Peninsula: *Clinacanthus nutans* (Burm.f.) Lindau (*Clinacanthus burmanni* Nees, **FMP2** 592), *Ecbolium ligustrinum* (Vahl) Vollesen (*Ecbolium linneanum* Kurz, **FMP2** 608) and *Ruellia amoena* Nees [**FMP5** 325] are occasional escapes from gardens, *Peristrophe paniculata* (Forssk.) Brummitt (*Peristrophe bicalyculata* (Retz.) Nees, **FMP2** 610) has not been found south of the Thai border, and *Elytraria acaulis* (L.f.) Lindau var. *lyrata* (Nees) Bremek. [**B29** 250] appears to have died out in the Singapore Botanic Gardens where it once occurred as a lawn weed.

## 40. ACERACEAE

- 40.1.1 **Acer laurinum** Hassk., **D23** 396; *Acer caesium* (Reinw. ex Blume) Kosterm., **TFM2** 1; *Acer niveum* Blume, **FM14** 3; tree to 30 m tall, usually smaller; lower montane forest, twice recorded from lowland peat swamp; Kl, Ph, Sl, Jh.

## 41. ACTINIDIACEAE

- 41.1.1 **Actinidia callosa** Lindl. var. **pubescens** Dunn, **FM14** 39; rambling shrub, liane to 30 m; montane rain forest; once collected.
- 41.1.2 **Actinidia latifolia** (Gardner & Champ.) Merr., **FM14** 39, **TFM4** 1; *Actinidia championi* Benth., **FMP1** 206; trailing shrub or liana to 20 m; hill forest; Pk, Sl, Jh.
- 41.2.1 **Saurauia fragrans** Hoogland, **TFM4** 3; *Saurauia tristyla* DC., **FMP1** 207 in part; small tree to 12 m tall; lowland and hill forest; Ph, Sl, NS.
- 41.2.2 **Saurauia leprosa** Korth., **TFM4** 4; *Saurauia cauliflora* var. *calycina* King, **FMP1** 208; small tree to 12 m tall; lowland forest to 800 m; Pk, Ph, Sl.
- 41.2.3 **Saurauia mahmudii** Hoogland, **TFM4** 4; small tree to 6 m tall; montane forest above 1500 m, often near streams; known only from Cameron Highlands, Ph; endemic.
- 41.2.4 **Saurauia malayana** Hoogland, **TFM4** 4; small tree to 12 m tall; disturbed lower montane forest 1100–1500 m; restricted to the Cameron Highlands, Ph; endemic.
- 41.2.5 **Saurauia nepaulensis** DC., **TFM4** 5; shrub or small tree to 10 m tall; secondary montane forest above 1400 m; Cameron Highlands, Ph; possibly not native but escaped from cultivation.
- 41.2.6 **Saurauia nudiflora** DC., **FMP1** 207, **TFM4** 5; small tree to 12 m tall; lowland and hill forest; Kd, Pk, Ph, Sl.
- 41.2.7 **Saurauia pentapetala** (Jack) Hoogland, **TFM4** 5; *Saurauia tristyla* DC., **FMP1** 207 in part; small tree to 15 m tall; lowland and hill forest to 1100 m; common throughout.
- 41.2.8 **Saurauia roxburghii** Wall., **TFM4** 7; *Saurauia tristyla* DC., **FMP1** 207 in part; shrub or small tree to 12 m tall; mostly in disturbed hill forest, to 1250 m; Kl, Tg, Pk, Ph, Sl.
- 41.2.9 **Saurauia rubens** Ridl., **FMP1** 208, **TFM4** 7; small tree to 12 m tall; montane forest; Tg, Ph; endemic.

41.2.10 **Saurauia vulcani** Korth., **TFM4** 7; *Saurauia grandis* Ridl., **FMP1** 207; shrub or tree to 20 m tall; secondary montane forest 750–1700 m; Ph.

## 42. AIZOACEAE

42.1.1 **Sesuvium portulacastrum** (L.) L., **FMP1** 866, **FM4** 272; creeping succulent herb; on sandy or muddy beaches near the tide line; throughout.

42.2.1 **Trianthema portulacastrum** L., **FM4** 274; herb to 50 cm tall; weed of cultivation, roadsides; scattered.

## 43. ALANGIACEAE

43.1.1a **Alangium ebenaceum** (C.B. Clarke) Harms var. **ebenaceum**, **FMP1** 893, **TFM1** 57; tree to 20 m tall; lowland forest; Tg and Pk southward.

43.1.1b **Alangium ebenaceum** (C.B. Clarke) Harms var. **tutela** (Ridl.) Kochummen, **TFM1** 57; *Alangium tutela* Ridl., **FMP1** 894; small tree; lowland forest; Ph, Jh, Sp; endemic variety.

43.1.2 **Alangium griffithii** (C.B. Clarke) Harms, **TFM1** 58; *Alangium uniloculare* (Griff.) King, **FMP1** 894; tree to 25 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, Jh.

43.1.3 **Alangium kurzii** Craib, **TFM1** 58; *Alangium begoniifolium auct. non* (Roxb.) Baill., **FMP1** 894; tree to 20 m tall; lowland forest; Kd, Pn, Pk, Sl, NS.

43.1.4 **Alangium nobile** (C.B. Clarke) Harms, **FMP1** 892, **TFM1** 58; tree to 20 m tall; lowland forest; Kd, Pn, Kl, Sl, NS, Ml.

43.1.5 **Alangium ridleyi** King, **FMP1** 893, **TFM1** 59; tree to 30 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml; endemic.

43.1.6 **Alangium rotundifolium** (Hassk.) Bloemb., **TFM1** 60; *Alangium rotundatum* Ridl., **FMP5** 312; tree to 15 m tall; hill and montane forest; Kd, Pk, Ph, Jh.

43.1.7 **Alangium salviifolium** (L.f.) Wangerin, **TFM1** 57; *Alangium lamarckii* Thwaites, **FMP1** 892; scandent shrub or small tree; lowland forest; Pk, Sp.

## 44. AMARANTHACEAE

44.1.1 **Achyranthes aspera** L., **FMP3** 8, **FM4** 88, **T16** 38; erect herb to 2 m tall; roadsides, waste ground; throughout.

- 44.1.2 **Achyranthes bidentata** Blume, **FMi4** 88, **T16** 40; erect herb to 1.5 m tall; weed at the hill stations; Ph; naturalized from other parts of Asia.
- 44.2.1 **Allmania nodiflora** (L.) R.Br. ex Wight, **FMP3** 5 incl. vars. *esculenta* Ridl. & *procumbens* Ridl., **FMi4** 74, **M47** 34; herb to 80 cm tall; weed, particularly of sandy sites; scattered.
- 44.3.1 **Alternanthera bettzichiana** (Regel) Voss, **T16** 52; *Alternanthera ficoidea* (L.) R.Br. ex Roem. & Schult. var. *bettzichiana* (Regel) Backer, **FMi4** 93; red-leaved herb 20–50 cm tall; waste places, escape from cultivation; Sp; naturalized from tropical America.
- 44.3.2 **Alternanthera philoxeroides** (Mart.) Griseb., **FMi4** 93, **C26** 661, **M47** 36; aquatic herb creeping or floating; in stagnant shallow water; Sp; naturalized from tropical America.
- 44.3.3 **Alteranthera sessilis** (L.) DC., **FMP3** 10, **FMi4** 92, **T16** 49, **M47** 38; fleshy prostrate herb; common weed; throughout.
- 44.4.1 **Amaranthus caudatus** L., **FMP3** 6, **FMi4** 80; herb 0.3–1.5 m tall; waste places.
- 44.4.2 **Amaranthus lividus** L., **FMi4** 77, **T16** 17; *Amaranthus blitum* L., herb 5–80 cm tall; weed of cultivation, waste places; naturalized.
- 44.4.3 **Amaranthus spinosus** L., **FMP3** 6, **FMi4** 78, **T16** 9, **M47** 42; herb 15–100 cm tall; common weed; throughout; naturalized from tropical America.
- 44.4.4 **Amaranthus tricolor** L., **FMi4** 77, **T16** 15; *Amaranthus gangeticus* L., **FMP3** 6; *Amaranthus mangostanus* L., **FMP3** 6; herb to 2.5 m tall; waste places, roadsides to 700 m.
- 44.4.5 **Amaranthus viridis** L., **FMP3** 7, **T16** 19; *Amaranthus gracillis* Desf., **FMi4** 76, **M44** 40; herb 10–75 cm tall; common weed of cultivation; throughout.
- 44.5.1 **Celosia argentea** L., **FMP3** 5, **FMi4** 73, **T16** 3, **M47** 44; herb to 1.5 m tall; weed of cultivation, waste places; throughout; naturalized possibly from Asia.
- 44.6.1 **Cyathula prostrata** (L.) Blume, **FMP3** 7, **FMi4** 82, **T16** 26; herb to 50 cm tall; common in lightly shaded places, villages etc.; throughout.
- 44.7.1 **Deeringia amaranthoides** (Lam.) Merr., **FMi4** 71; *Deeringia celosioides* R.Br., **FMP3** 4; scandent shrub 2–6 m tall; on rocks including limestone.
- 44.7.2 **Deeringia polysperma** (Roxb.) Moq., **FMi4** 72, **C14** 75; *Deeringia indica* Zoll. ex Moq., **FMP3** 5; erect herb or shrub to 2 m tall; most often on limestone, shaded cliff bases; scattered.
- 44.8.1 **Gomphrena celosioides** Mart., **FMi4** 96, **T16** 53, **M47** 46; herb 10 cm–25 cm tall; waste places; Sp; naturalized from tropical America.

- 44.8.2 **Gomphrena globosa** L., **FMP3** 10, **FMi4** 95, **T16** 55; herb 15–60 cm tall; waste places; naturalized from tropical America.
- 44.9.1 **Psilotrichopsis curtisii** (Oliv.) C.C. Towns., **T15** 465; *Aerva curtisii* Oliv., **FMP3** 8 ‘*Aerua*’, **FMi4** 86; straggling herb to 30 cm tall; on rocks in lowland forest, 150–1000 m; Pk; endemic.
- 44.10.1 **Psilotrichum ferrugineum** (Roxb.) Moq., **FMi4** 90; *Psilotrichum trichotomum* Blume, **FMP3** 8; herb 5–50 cm tall; dry open places in the hills; Pk, Sl.
45. ANACARDIACEAE
- 45.1.1 **Anacardium occidentale** L., **FMP1** 526, **FMi8** 421; tree to 12m; sandy places, usually near the sea; East Coast in particular; naturalized from tropical America.
- 45.2.1 **Androtium astylum** Stapf, **FMi8** 420, **TFM4** 13; small tree to 10 m tall; lowland swamp; once from Kluang Forest Reserve, Jh.
- 45.3.1 **Bouea macrophylla** Griff., **FMP1** 520, **FMi8** 468, **TFM4** 14; tree rarely to 36 m; lowland and hill forest; Tg, Pn, Pk, Ph, Ml, Sp.
- 45.3.2 **Bouea oppositifolia** (Roxb.) Meisn., **FMi8** 466, **TFM4** 14; *Bouea microphylla* Griff., **FMP1** 519; tree to 33 m tall; lowland forest to 700 m; widespread.
- 45.4.1 **Buchanania arborescens** (Blume) Blume, **FMi8** 415, **TFM4** 16; *Buchanania lucida* Blume, **FMP1** 518 incl. var. *laxiflora* Ridl.; tree to 27 m tall; common on sandy and rocky coasts and riverbanks; throughout.
- 45.4.2 **Buchanania sessifolia** Blume, **FMP1** 519 ‘*sessilifolia*’, **FMi8** 418, **TFM4** 16; small to medium tree; lowland forest to 750 m; throughout.
- 45.5.1 **Camposperma auriculatum** (Blume) Hook.f., **FMP1** 534 incl. var. *wallichii* (King) Ridl., **FMi8** 529, **TFM4** 18; *Camposperma oxyrhachis* Engl., **FMP1** 534; big tree to 33 m tall; lowland and montane forest to 1600 m, often in swampy places; widespread.
- 45.5.2 **Camposperma coriaceum** (Jack) Hallier f. ex Steenis, **FMi8** 530, **TFM4** 20; *Camposperma griffithii* March., **FMP1** 534; tree to 40 m tall; often gregarious in peat swamp forests; Tg, Pk, Ph, Sl, Ml, Jh, ?Sp.
- 45.5.3 **Camposperma squamatum** Ridl., **FMi8** 532, **TFM4** 20; tree to 30 m tall; both swampy and dry lowland forest to 1200 m; Kl, Tg, Ph, Sl, Jh, Sp.
- 45.6.1 **Dracontomelon dao** (Blanco) Merr. & Rolfe, **FMi8** 470, **TFM4** 20; *Dracontomelon mangiferum* (Blume) Blume, **FMP1** 543; big buttressed tree to 36 m tall; lowland forest, often near rivers; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS.

- 45.7.1 ***Drimycarpus luridus*** (Hook.f.) Ding Hou, **FMi8** 520, **TFM4** 21; *Swintonia lurida* (Hook.f.) King, **FMP1** 533; *Semecarpus glabra* Ridl., **FMP5** 303; tree to 20 m tall; lowland and hill forest to 1000 m; Tg, Pn, Pk, Sl, NS, MI.
- 45.8.1 ***Gluta aptera*** (King) Ding Hou, **FMi8** 452, **TFM4** 24; *Melanorrhoea aptera* King, **FMP1** 531; *Melanorrhoea inappendiculata* King, **FMP1** 531; tree to 40 m tall; lowland and hill forest to 1200 m, often on ridge crests; Kl, Tg, Pn, Pk, Ph, Sl, Jh.
- 45.8.2 ***Gluta beccarii*** (Engl.) Ding Hou, **FMi8** 452, **TFM4** 24; tree to 36 m tall; on steep granitic ridges at 600 m; Tg, MI.
- 45.8.3 ***Gluta capituliflora*** Ding Hou, **FMi8** 458, **TFM4** 24; tree to 30 m tall; hill forest 100–1000 m; Kl, Tg; endemic.
- 45.8.4 ***Gluta curtisii*** (Oliv.) Ding Hou, **FMi8** 454, **TFM4** 25; *Melanorrhoea curtisii* Oliv., **FMP1** 530; tree to 34 m tall; hill forest 250–1200 m, commonly on ridges; Kd, Kl, Pn, Pk, Ph, Sl, Jh; endemic.
- 45.8.5 ***Gluta elegans*** (Wall.) Hook.f., **FMP1** 527, **FMi8** 461, **TFM4** 25; tree to 27 m tall; lowland forest to 300 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl.
- 45.8.6 ***Gluta lanceolata*** Ridl., **FMP1** 527, **FMi8** 458, **TFM4** 28; tree to 30 m tall; lowland rain forest to 450 m; Kd, Pn, Pk; endemic.
- 45.8.7 ***Gluta macrocarpa*** (Engl.) Ding Hou, **FMi8** 454, **TFM4** 28; *Melanorrhoea macrocarpa* Engl., **FMP1** 530; tree to 30 m tall; lowland and hill forest to 1200 m; Kd, Kl, Tg, Pk, Ph, Sl.
- 45.8.8 ***Gluta malayana*** (Corner) Ding Hou, **FMi8** 455, **TFM4** 28; tree to 45 m tall; lowland forest, including swamps; Kd, Tg, Pk, Ph, Sl, Jh.
- 45.8.9 ***Gluta pubescens*** (Ridl.) Ding Hou, **FMi8** 450, **TFM4** 28; *Melanorrhoea pubescens* Ridl., **FMP1** 530; tree to 40 m tall; lowland forest, including swamps, to 400 m; Kl, Tg, Ph, NS, MI, Jh.
- 45.8.10 ***Gluta renghas*** L., **FMP1** 527 'benghas', **FMi8** 463, **TFM4** 29; tree to 30 m tall; riverside tree of tidal freshwater reaches; P. Lankawi, Kl, Tg, Ph, Jh.
- 45.8.11 ***Gluta tavoyana*** Wall. ex Hook.f., **FMi8** 459, **TFM4** 29; tree to 36 m tall; lowland forest to 300 m; Kl, Pn, Jh.
- 45.8.12 ***Gluta torquata*** (King) Tardieu, **FMi8** 455, **TFM4** 29; *Melanorrhoea torquata* King, **FMP1** 531; tree to 30 m tall; lowland forest; Kd, Pk, Sl, Jh.
- 45.8.13 ***Gluta velutina*** Blume, **FMi8** 461, **TFM4** 30; *Gluta coarctata* Hook.f., **FMP1** 527; large shrub or stilt-rooted tree to 20 m tall; banks of tidal rivers; Kd, Pk, Ph, Sl, Jh.

- 45.8.14      **Gluta wallichii** (Hook.f.) Ding Hou, **FMi8** 456, **TFM4** 30; *Melanorrhoea wallichii* Hook.f., **FMP1** 529; *Melanorrhoea woodsiana* Hook.f., **FMP1** 530; big tree to 45 m tall; lowland and hill forest to 1000 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 45.8.15      **Gluta wrayi** King, **FMP1** 528, **FMi8** 456, **TFM4** 30; *Gluta virosa* Ridl., **FMP1** 528; tree to 30 m tall; lowland forest; Kl, Tg, Pn, Pk, Sl.
- Mangifera* - Kostermans and Bompard (**K63**) have recently resurrected many of the *Mangifera* species synonymized in the revisions of Ding Hou (**FM**) and Kochummen (**TFM**). I have generally followed the broader species concept of these authors.
- 45.9.1      **Mangifera caesia** Jack, **FMP1** 525, **FMi8** 458, **K63** 149; *Mangifera kemanga* Blume, **FMP1** 525, **K63** 153; tree to 36 m tall; lowland forest to 450 m, also cultivated; Kd, Kl, Tg, Pn, Pk, Ph, Ml, Jh.
- 45.9.2      **Mangifera foetida** Lour., **FMP1** 524, **FMi8** 435, **TFM4** 35, **K63** 159; tree to 36 m tall; lowland and hill forest to 600 m, also cultivated; throughout.
- 45.9.3      **Mangifera gedebe** Miq., **K63** 29; tree to 30 m tall; marshy spots; Ps.
- 45.9.4      **Mangifera gracilipes** Hook.f., **FMP1** 523, **FMi8** 433, **TFM4** 35, **K63** 47; tree to 30 m tall; lowland forest; Tg, Pk, Ph, Sl, Ml, Jh; endemic.
- 45.9.5      **Mangifera griffithii** Hook.f., **FMP1** 521, **FMi8** 430, **TFM4** 35, **K60** 42; *Mangifera microphylla* Griff. ex Hook.f., **FMP1** 521, **K63** 49; *Mangifera sclerophylla* Hook.f., **FMP1** 521; tree to 40 m tall; wet lowland forest to 360 m; Kd, Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 45.9.6      **Mangifera lagenifera** Griff., **FMP1** 525, **FMi8** 433, **TFM4** 36, **K63** 157; tree to 40 m tall; lowland rain forest to 150 m, also in cultivation; Pk, Ph, NS, Ml, Jh, Sp.
- 45.9.7      **Mangifera laurina** Blume, **K63** 120; *Mangifera longipes* Griff., **FMP1** 523, **FMi8** 428; tree to 35 m tall; lowland forest; Kl, Pk, Sl, Jh, Sp.
- 45.9.8      **Mangifera leschenaultii** Marchand, **K63** 166; tree to 30 m tall; lowland forest; Pk.
- 45.9.9      **Mangifera macrocarpa** Blume, **FMP1** 524, **FMi8** 439, **TFM4** 37, **K63** 157; tree to 33 m tall; lowland forest to 700 m; Kl, Tg, Pk, Ph, NS, Ml.
- 45.9.10      **Mangifera magnifica** Kochummen, **TFM4** 37, **K63** 75; big tree reaching 54 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 45.9.11      **Mangifera odorata** Griff., **FMP1** 524, **FMi8** 437, **TFM4** 37, **K63** 167; *Mangifera oblongifolia* Hook.f., **FMP1** 523, **K63** 113; tree to 24 m tall; lowland forest, more often in cultivation; Kl, Pn, Tg, Pk, Ph, NS, Ml, Jh, Sp.

- 45.9.12 **Mangifera orophila** Kosterm., **K63** 138; *Mangifera sp. B*, **TFM4** 40; tree to 30 m tall; lower montane forest 1000–1500 m; Fraser's Hill & Cameron Highlands, Ph.
- 45.9.13 **Mangifera paludosa** Kosterm., **K63** 41; tree to 30 m tall; freshwater swamp forest; Ph, MI, Sp.
- 45.9.14 **Mangifera parvifolia** Boerl. & Koord., **FMi8** 431, **K63** 39; tree to 29 m tall; lowland rain forest; Tg, Sp.
- 45.9.15 **Mangifera pentandra** Hook.f., **FMP1** 522, **FMi8** 426, **TFM4** 38, **K63** 36; *Mangifera lanceolata* Ridl., **FMP1** 522; tree to 24 m tall; forest near the sea, in villages; Ps, Kd, Pk, Ph, Sl, MI, Jh, Sp.
- 45.9.16 **Mangifera quadrifida** Jack, **FMP1** 522, **FMi8** 429, **TFM4** 38 incl. var. *longipetiolata* (King) Kochummen, **K63** 68; *Mangifera maingayi* Hook.f., **FMP1** 522, **K63** 178; *Mangifera longipetiolata* King, **FMP1** 522, **K63** 66; tree to 40 m tall; lowland rain forest to 900m; Kd, Kl, Tg, Pk, Ph, Sl, MI, Jh, Sp.
- 45.9.17 **Mangifera subsessilifolia** Kosterm., **K63** 180; *Mangifera sp. A*, **TFM4** 39; tree to 28 m tall; lowland forests; Kd, Pn, Kl, Ph, NS, Jh, Sp.
- 45.9.18 **Mangifera superba** Hook.f., **FMP1** 525, **FMi8** 439, **TFM4** 39, **K63** 144; tree to 27 m tall; cultivated, rarely wild in lowland forest; Kd, Pk, Ph, NS, MI, Jh; endemic.
- 45.9.19 **Mangifera swintonioides** Kosterm., **K63** 80; tree to 40 m tall; wet lowland forest; Pk, Ph, Jh.

Additionally, **K63** list [page number] the following species all based on single, sterile collections: *Mangifera applanata* Kosterm. [64], *Mangifera blommesteinii* Kosterm. [146], *Mangifera bullata* Kosterm. [175], *Mangifera rufocostata* Kosterm. [116], *Mangifera torquenda* Kosterm. [60].

- 45.10.1 **Melanochyla angustifolia** Hook.f., **FMP1** 541, **FMi8** 496, **TFM4** 41; tree to 27 m tall; lowland forest to 600 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, MI, Jh.
- 45.10.2 **Melanochyla auriculata** Hook.f., **FMP1** 540, **FMi8** 495, **TFM4** 41; tree to 24 m tall; lowland forest; Kl, Ph, NS, MI, Jh, Sp.
- 45.10.3 **Melanochyla bracteata** King, **FMP1** 540, **FMi8** 496, **TFM4** 42; buttressed or stilt-rooted tree to 39 m tall; lowland swampy forest; Tg, Pn, Pk, Ph, Sl, Jh, Sp.
- 45.10.4 **Melanochyla caesia** (Blume) Ding Hou, **FMi8** 498, **TFM4** 42; *Melanochyla kunstleri* King, **FMP1** 539, **FMi8** 499; *Melanochyla tomentosa* Hook.f. var. *glabrescens* Koord. & Valeton, **FMP1** 539; *Melanochyla maingayi* Hook.f., **FMP1** 540; tree to 30 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS, Jh.



- 45.10.5 **Melanochyla fasciculiflora** Kochummen, **TFM4** 42; shrub to 5 m tall; lowland forest; only known from Rengam F.R., Jh; endemic.
- 45.10.6 **Melanochyla fulvinervis** (Blume) Ding Hou, **FMi8** 493, **TFM4** 42; *Melanochyla rugosa* King, **FMP1** 540; tree to 28 m tall; lowland forest, occasional in the hills to 1350 m; Kl, Th, Pk, Ph, Sl, NS, Jh.
- 45.10.7 **Melanochyla nitida** King, **FMP1** 541, **FMi8** 496, **TFM4** 43; tree to 18 m tall; lowland forest, including swamps, to 360 m; Pn, Pk; endemic.
- 45.10.8 **Melanochyla tomentosa** Hook.f., **FMP1** 539, **FMi8** 498, **TFM4** 43; *Melanochyla densiflora* King, **FMP1** 539, **FMi8** 497; tree to 33 m tall, usually smaller; lowland to montane forest; Kd, Pk, Sl, MI, Jh.
- 45.10.9 **Melanochyla sp. A**, **TFM4** 44; small tree to 12 m tall; lowland forest at 300 m; once from Taman Negara, Ph; endemic.
- 45.11.1 **Parishia insignis** Hook.f., **FMP1** 536, **FMi8** 545, **TFM4** 45; *Parishia pubescens* Hook.f., **FMP1** 535; *Parishia rosea* Ridl., **FMP1** 536, **C14** 77; very tall tree reaching 60 m; lowlands to 300 m, including swamps and on limestone; Kd, Kl, Pn, Pk, Ph, MI, Jh, Sp.
- 45.11.2 **Parishia maingayi** Hook.f., **FMP1** 535, **FMi8** 543, **TFM4** 45; tree to 30 m tall; lowland and hill forest to 600 m, mainly on ridge crests; Tg, Pk, Ph, Sl, Jh, Sp.
- 45.11.3 **Parishia paucijuga** Engl., **FMP1** 536, **FMi8** 544, **TFM4** 46; tree to 40 m tall; lowland and hill forest to 400 m; Tg, Pn, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 45.12.1 **Pentaspadon curtisii** (King) Corner, **FMi8** 524, **C14** 77, **TFM4** 47; *Microstemon curtisii* King, **FMP1** 537; tree to 36 m tall; on limestone; P. Langkawi.
- 45.12.2 **Pentaspadon motleyi** Hook.f., **FMP1** 538, **FMi8** 524, **TFM4** 47; *Pentaspadon officinalis* Holmes ex King, **FMP1** 537; tree to 36 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, NS, Jh.
- 45.12.3 **Pentaspadon velutinus** Hook.f., **FMi8** 523, **TFM4** 47; *Microstemon velutina* (Hook.f.) Engl., **FMP1** 537; big tree to 48 m tall; lowland and hill forest, often by streams; Kl, Pk, Ph, Sl, NS, MI.
- 45.13.1 **Pistacia malayana** M.R. Hend., **FMi8** 547, **C14** 77, **TFM4** 48; small tree to 6 m tall; restricted to limestone at 150–350 m; Kl, Pk, Ph, Sl; endemic.
- 45.14.1 **Rhus nodosa** Blume; **FMi8** 539, **TFM4** 50; *Rhus perakensis* Scort., **FMP1** 538; slender woody climber or scrambling shrub to 15 m long; near rocky streams in the lowlands; Pk, Ph.
- 45.14.2 **Rhus succedanea** L., **FMi8** 539, **TFM4** 50; tree to 40 m tall; lower montane forest at about 1400 m; Fraser's Hill & Cameron Highlands, Ph.

- 45.15.1 **Semecarpus cochinchinensis** Engl., **FMP1** 542, **FMi8** 516, **TFM4** 51; *Semecarpus glomerulatus* Ridl., **FMP1** 542 'glomerata', **C14** 78; shrub or small tree 8–15 m tall; limestone hills; Ps, P. Langkawi, Kd.
- 45.15.2 **Semecarpus curtisii** King, **FMP1** 542, **FMi8** 511, **TFM4** 51; *Semecarpus curtisii* King var. *brevipetiolatus* M.R. Hend., **FMP5** 302 'brevipetiolata'; shrub or small tree to 12 m tall; lowland forest; Ps, Kd, Ph, Sl, NS, Jh, ?Sp.
- 45.15.3 **Semecarpus lucens** King, **FMP1** 543, **FMi8** 513, **TFM4** 51; tree to 21 m tall; lowland and hill forest to 900 m; Pk, Sl.
- 45.15.4 **Semecarpus prainii** King, **FMP5** 303, **FMi8** 509, **TFM4** 52; tree to 15 m tall; lowland forest; Pk, Ph.
- 45.15.5 **Semecarpus rufovelutinus** Ridl., **FMi8** 513, **TFM4** 52; small tree to 9 m tall; lowland forest; Ph, Jh.
- 45.15.6 **Semecarpus trengganuensis** Kochummen, **TFM4** 52; shrub to 3 m tall; lowland forest; Tg, Ph; endemic.
- 45.15.7 **Semecarpus velutinus** King, **FMP1** 541, **FMi8** 517, **TFM4** 52; tree to 18 m tall; lowland forest; Tg, Pk, Sl, Ml, Jh.
- There is also one doubtful record of *Semecarpus heterophyllus* Blume [**FMP5** 302, **FMi8** 512] from Sp.
- 45.16.1 **Spondias cytherea** Sonn., **FMi8** 481, **TFM4** 53; tree to 40 m tall; lowland forest incl. limestone, often cultivated; Kd, Kl, Tg, Pk, Ph, Sl.
- 45.16.2 **Spondias pinnata** (L.f.) Kurz, **FMi8** 483, **TFM4** 54; tree 20–25 m tall; lowland forest incl. limestone, often cultivated; Kd, Pk, P. Langkawi.

Kostermans [**K62**] argues that true *Spondias pinnata* does not occur in Malasia. Malayan specimens identified as such represent *Spondias malayana* Kosterm. and *Spondias acida* Blume, though he only cites one sterile specimen of the latter from Gg Baling, Kd. He also states that *Spondias cytherea* is only found in Malaya as a cultivated tree, which he calls *Evia dulcis* (Parkinson) Kosterm.

- 45.17.1 **Swintonia floribunda** Griff., **FMi8** 445, **TFM4** 55 incl. var. *penangiana* (King) Kochummen; *Swintonia puberula* H. Pearson, **FMP1** 532; *Swintonia penangiana* King, **FMP1** 533; large tree to 45 m tall; lowland and hill forest to 1000 m; Kd, Kl, Pn, Ph, Sl, NS, Jh.
- 45.17.2 **Swintonia robinsonii** Ridl., **FMP1** 532, **FMi8** 444, **TFM4** 55; small gnarled tree to 12 m tall; mountain ridges at 1050–1650 m; Kl, Tg, Ph; endemic.
- 45.17.3 **Swintonia schwenkii** (Teijsm. & Binn.) Teijsm. & Binn., **FMP1** 533, **FMi8** 443, **TFM4** 57; very tall trees reaching 50 m; lowland and hill forest to 700 m; Kd, Tg, Pn, Ph, Sl, NS, Ml, Jh, Sp.

45.17.4 **Swintonia spicifera** Hook.f., **FMP1** 532, **FM18** 445, **TFM4** 57; tree to 45 m tall; lowland and hill forest to 500 m; Kd, Pn, Pk, NS, MI, Jh; endemic.

45.17.5 **Swintonia whitmorei** (Kochummen) Kosterm., **K61** 347; *Mangifera whitmorei* Kochummen, **TFM4** 39; tree to 30 m tall; lowland forest at 150 m; only known from type, Upper Pk; endemic.

#### 46. ANCISTROCLADACEAE

46.1.1 **Ancistrocladus tectorius** (Lour.) Merr., **FM14** 251; *Ancistrocladus pinangianus* Planch., **FMP1** 251; trailing shrub or liana; sandy places, often near the sea; widespread.

#### 47. ANISOPHYLLEACEAE

47.1.1 **Anisophyllea apetala** Scort. ex King, **FMP1** 702, **FM15** 478, **TFM4** 305; small tree to 14 m tall; lowland and hill forest to 600 m; Tg, Pk, Sl, Jh.

47.1.2 **Anisophyllea corneri** Ding Hou, **FM15** 478, **TFM4** 305; tree to 30 m tall; lowland and hill forest to 1000 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh.

47.1.3 **Anisophyllea curtisii** King, **FMP1** 702, **FM15** 477, **TFM4** 305; tree to 33 m tall; lowland and hill forest; Pn, Pk, Jh.

47.1.4 **Anisophyllea disticha** (Jack) Baill., **FMP1** 701, **FM15** 479, **TFM4** 307; shrub or small pagoda tree to 7 m tall; lowland to montane forest; common throughout.

47.1.5 **Anisophyllea grandis** (Benth.) Burkill, **FM15** 477, **TFM4** 307; *Anisophyllea gaudichaudiana* Baill., **FMP1** 702; tree to 30 m tall; lowland and hill forest to 700 m; Kd, Pn, Pk; endemic.

47.1.6 **Anisophyllea griffithii** Oliv., **FMP1** 702, **FM15** 476, **TFM4** 307; tree to 36 m tall; hill forests, often on ridges; Kd, Kl, Tg, Pn, Pk, Ph, Sl, MI, Jh, Sp.

47.1.7 **Anisophyllea reticulata** Kochummen, **W30** 268, **TFM4** 307; tree to 21 m tall; lowland forest; only known from type, Ulu Endau, Ph; endemic.

47.1.8 **Anisophyllea scortechinii** King, **FMP1** 701, **FM15** 479, **TFM4** 309; small tree to 10 m tall; lowland forest; Kd, Tg, Pn, Pk, Ph, Jh.

47.2.1 **Combretocarpus rotundatus** (Miq.) Danser, **FM15** 480, **TFM4** 317; tree to 25 m tall; peat swamp forest; once collected near Air Hitam, Jh.

## 48. ANNONACEAE

- 48.1.1 **Alphonsea boniana** Finet & Gagnep., **L13** 54, **K19** 86; tree to 15 m tall; lowland forest; once from near Jeli, Kl.
- 48.1.2 **Alphonsea cylindrica** King, **FMP1** 99, **S24** 385, **TFM1** 67, **K19** 88; tree to 13 m tall; lowland forest; Kd, Pk, Sl.
- 48.1.3 **Alphonsea elliptica** Hook.f. & Thomson, **S24** 388, **TFM1** 67, **K19** 88; *Alphonsea maingayi* Hook.f. & Thomson var. *elliptica* (Hook.f. & Thomson) Ridl., **FMP1** 98; tree to 25 m tall; lowland forest; Tg, Ph, Sl, NS, MI, Jh.
- 48.1.4 **Alphonsea javanica** Scheff., **TFM1** 67, **K19** 88; tree 10–30 m tall; lowland forest; Jh.
- 48.1.5 **Alphonsea johorensis** J. Sinclair, **S24** 386, **TFM1** 67, **K19** 88; tree to 20 m tall; lowland swamp forest; S.E. Jh.
- 48.1.6 **Alphonsea kingii** J. Sinclair, **S24** 386, **TFM1** 67, **K19** 103; *Xylopiya dicarpa* (*non* Hook.f. & Thomson) King, **FMP1** 91 in part; tree to 8 m tall; lowland forest; Pk; endemic.
- 48.1.7 **Alphonsea lucida** King, **FMP1** 98, **S24** 387, **TFM1** 67, **K19** 94; shrub to 3 m tall; lowland forest; Pk, Ph; endemic.
- 48.1.8 **Alphonsea maingayi** Hook.f. & Thomson, **FMP1** 98, **S24** 384, **TFM1** 67, **K19** 96; tree to 20 m tall; lowland forest; Pk, Sl, NS, MI, Jh, Sp; endemic.
- 48.1.9 **Alphonsea malayana** P. Kessler, **K19** 97; *Alphonsea sp. C*, **TFM1** 67; tree 10–20 m tall; hill tops at 1000–2000 m; Ph; endemic.
- 48.1.10 **Alphonsea sp. A**, **TFM1** 67, tree to 35 m tall; once from Kd; endemic.
- 48.1.11 **Alphonsea sp. B**, **TFM1** 66; tree; lowland swamp forest; Tg, Ph, Jh; endemic.
- 48.1.12 **Alphonsea sp. D**, **TFM1** 66; small tree; once from Gg Inas, Kd; endemic.
- 48.2.1a **Anaxagorea javanica** Blume var. **dipetala** Corner, **S24** 349, **TFM1** 68; small tree; lowland and hill forest; Jh; endemic variety.
- 48.2.1b **Anaxagorea javanica** Blume var. **javanica**, **S24** 347, **TFM1** 68; *Anaxagorea scortechinii* King, **FMP1** 62; *Mitrephora crassipetala* Ridl., **FMP1** 74; small tree to 6 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, ?Sp.
- 48.2.1c **Anaxagorea javanica** Blume var. **tripetala** Corner, **S24** 349, **TFM1** 68; small tree; lowland and hill forest; Kd, Tg, Pk, Sl.
- 48.3.1 **Artabotrys costatus** King, **FMP1** 43, **S24** 255; liana to 25 m long; lowland forest; Pk, NS, Sp.

- 48.3.2 **Artabotrys crassifolius** Hook.f. & Thomson, **FMP1** 40, **S24** 249; stout woody climber; lowland forest; Tg, Pk, Ph, Sl, Ml, Sp.
- 48.3.3 **Artabotrys gracilis** King, **FMP1** 42, **S24** 258; liana to 25 m long; lowland forest; Pk.
- 48.3.4 **Artabotrys grandifolius** King, **FMP1** 39, **S24** 253; liana to 25 m long; lowland forest; Kd, Pk, Ph; endemic.
- 48.3.5 **Artabotrys lowianus** Scort. ex King, **FMP1** 41, **S24** 251; stout woody climber; only known from Pk; endemic.
- 48.3.6 **Artabotrys maingayi** Hook.f. & Thomson, **FMP1** 259, **S24** 259; liana to 25 m long; lowland forest; Pk, Ml, Sp; endemic.
- 48.3.7 **Artabotrys oblongus** King, **FMP1** 41, **S24** 254; liana to 23 m long; only known from type, Larut, Pk; endemic.
- 48.3.8 **Artabotrys oxycarpus** King, **FMP1** 41, **S24** 250; liana to 25 m long; lowland forest; only known from Pk; endemic.
- 48.3.9 **Artabotrys pleurocarpus** Maingay ex Hook.f. & Thomson, **FMP1** 39, **S24** 251; liana; lowland forest; Kd, Pk, Ml; endemic.
- 48.3.10 **Artabotrys scortechinii** King, **FMP1** 39, **S24** 253; liana; once each from P. Langkawi and Pk; endemic.
- 48.3.11 **Artabotrys suaveolens** (Blume) Blume, **FMP1** 42, **S24** 256; liana; common in lowland forest; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.3.12 **Artabotrys venustus** King, **FMP1** 40, **S24** 252; liana to 25 m long; lowland to lower montane forest; Pk, Ph, NS, Ml, Jh.
- 48.3.13 **Artabotrys wrayi** King, **FMP1** 40, **S24** 248; woody climber; lowland forest; Pk, Jh, Sp; endemic.
- 48.4.1 **Cananga latifolia** (Hook.f. & Thomson) Finet & Gagnep., **S24** 326, **TFM1** 70; *Canangium latifolium* (Hook.f. & Thomson) Ridl., **FMP1** 44; tree to 20 m tall; Ps, P. Langkawi.
- 48.4.2 **Cananga odorata** (Lam.) Hook.f. & Thomson, **S24** 324, **TFM1** 70; *Canangium scortechinii* King, **FMP1** 43; tree to 33 m tall; forest margins; NS northwards.
- 48.5.1 **Cyathocalyx carinatus** (Ridl.) J. Sinclair, **S24** 241, **TFM1** 71; *Drepananthus carinatus* Ridl., **FMP1** 38; small tree; lowland forest; Pk, Sl.
- 48.5.2 **Cyathocalyx olivaceus** (King) J. Sinclair, **S24** 242, **TFM1** 71; *Xylopia olivacea* King, **FMP1** 94; small tree; lowland and hill forest; only known from Pk; endemic.

- 48.5.3 **Cyathocalyx pahangensis** (M.R. Hend.) J. Sinclair, **S24** 240, **TFM1** 71; *Drepananthus pahangensis* M.R. Hend., **H31** 49; tree to 10 m tall; lowland forest; Tg, Ph, Jh; endemic.
- 48.5.4 **Cyathocalyx pruniferus** (Maingay ex Hook.f. & Thomson) J. Sinclair, **S24** 239, **TFM1** 71; *Drepananthus pruniferus* Maingay ex Hook.f. & Thomson, **FMP1** 37; tree to 23 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh; endemic.
- 48.5.5 **Cyathocalyx ramuliflorus** (Maingay ex Hook.f. & Thomson) Scheff., **S24** 243, **TFM1** 71; *Drepananthus ramuliflorus* Maingay ex Hook.f. & Thomson, **FMP1** 38; tall tree; lowland forest; Ml, Sp.
- 48.5.6 **Cyathocalyx ridleyi** (King) J. Sinclair, **S24** 237, **TFM1** 71; *Xylopia ridleyi* King, **FMP1** 95; small tree; damp lowland forest; Ph, Jh, Sp.
- 48.5.7 **Cyathocalyx scortechinii** (King) J. Sinclair, **S24** 244, **TFM1** 71; *Xylopia scortechinii* King, **FMP1** 94; tree to 23 m tall; lowland to lower montane forest; Pk, Ph; endemic.
- 48.5.8 **Cyathocalyx sumatranus** Scheff., **S24** 236, **TFM1** 71; *Xylopia curtisii* King, **FMP1** 90; tree to 23 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph, NS, Sp.
- 48.6.1 **Cyathostemma acuminatum** King, **FMP1** 28, **S24** 227; woody climber; only known from type, Pk; endemic.
- 48.6.2 **Cyathostemma argenteum** (Blume) J. Sinclair, **S24** 220; woody climber; lowland forest; Ph, Sl.
- 48.6.3 **Cyathostemma excelsum** (Hook.f. & Thomson) J. Sinclair, **S24** 226; *Uvaria excelsa* Wall. ex King, **FMP1** 34; large woody climber reaching 30 m; lowland and hill forest; Pn, Pk, Ph, Sl.
- 48.6.4 **Cyathostemma hookeri** King, **FMP1** 28, **S24** 223; woody climber to 25 m high; lowland and hill forest; Pn, Pk, Sp.
- 48.6.5 **Cyathostemma micranthum** (A. DC.) J. Sinclair, **S24** 225; *Uvaria micrantha* (A. DC.) Hook.f. & Thomson, **FMP1** 33; woody climber; lowland forest; P. Langkawi, Pn, Pk, Ph, Ml, Jh.
- 48.6.6 **Cyathostemma viridiflorum** Griff., **FMP1** 27 incl. var. *scortechinii* (King) Ridl., **S24** 221; woody climber to 25 m tall; swampy lowland forest; Ps, Pk, Ph, NS, Ml, Jh, Sp; endemic.
- 48.6.7 **Cyathostemma wrayi** King, **FMP1** 27, **S24** 224; woody climber to 20 m tall; lowlands, sometimes on limestone; Pn, Pk, Ph, Sl.
- 48.7.1 **Dendrokingstonia nervosa** (Hook.f. & Thomson) Rauschert, **R08** 555; *Kingstonia nervosa* Hook.f. & Thomson, **FMP1** 100, **S24** 184, **TFM1** 76; tree to 15 m tall; lowland forest; Pk, Ph, Sl, NS, Ml.

- 48.8.1 **Desmos chinensis** Lour., **FMP1** 46, **S24** 266; scandent shrub; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, ?Sp.
- 48.8.2 **Desmos cochinchinensis** Lour., **FMP1** 45, **S24** 264; climber or scandent shrub; lowland forest; Kd, Pn, Kl, Pk, Ph.
- 48.8.3a **Desmos dasymaschalus** (Blume) Safford var. **dasymaschalus**, **FMP1** 46, **S24** 69; shrub to 8 m tall; lowland forest; throughout.
- 48.8.3b **Desmos dasymaschalus** (Blume) Safford var. **wallichii** (Hook.f. & Thomson) Ridl., **FMP1** 47, **S24** 270; shrub to 8 m tall; lowland forest; Ps, Pn, Kl, Tg, Pk, Ph, Jh, Sp.
- 48.8.4 **Desmos dumosus** (Roxb.) Safford, **FMP1** 46, **S24** 268; scandent shrub; lowland forest; Kl, Pk, Ph, Sl, Ml, Jh, Sp.
- 48.8.5 **Desmos dunalii** (Hook.f. & Thomson) Safford, **FMP1** 45, **S24** 263; liana to 30 m long; lowland forest; Pn, Pk, Ph, Ml.
- 48.8.6 **Desmos filipes** (Ridl.) Ridl., **FMP1** 47, **S24** 271; shrub 3–6 m tall; hill forest; Pk, NS, Sl.
- 48.8.7 **Desmos teysmannii** (Boerl.) Merr., **S24** 264; climbing shrub; once from Pk.
- 48.9.1 **Disepalum longipes** King, **J17** 373; *Disepalum anomalum* auctt. plur., non Hook.f., **FMP1** 63, **S24** 332, **TFM1** 73; tree to 8 m tall; hill forest on ridges; Pk, Jh.
- 48.9.2 **Disepalum pulchrum** (King) J. Sinclair, **S24** 333 incl. var. *angustifolium* (King) J. Sinclair, **TFM1** 73, **J17** 367; *Polyalthia pulchra* King, **FMP1** 57 incl. var. *angustifolia* King, tree to 14 m tall; montane forest at 1200–1900 m; Kl, Pk, Ph, Sl; endemic.
- 48.10.1 **Ellipeia cuneifolia** Hook.f. & Thomson, **FMP1** 35, **S24** 230; liana to 50 m tall; lowland and hill forest; Pk, Sl, Ml, Sp.
- 48.11.1 **Enicosanthum congregatum** (King) Airy Shaw, **S24** 194, **TFM1** 74; *Polyalthia congregata* King, **FMP1** 60; tree to 20 m tall; lowland forest, sometimes on limestone; Pk, Sl; endemic.
- 48.11.2 **Enicosanthum cupulare** (King) Airy Shaw, **S24** 188, **TFM1** 74; *Griffithia cupularis* King, **FMP1** 26; tree to 17 m tall; lowland forest; Tg, Pk; endemic.
- 48.11.3 **Enicosanthum fuscum** (King) Airy Shaw, **S24** 189, **TFM1** 74; *Griffithia fusca* King, **FMP1** 26; tree to 20 m tall; lowland and hill forest; Pk, Ph; endemic.
- 48.11.4 **Enicosanthum macranthum** (King) J. Sinclair, **S24** 190, **TFM1** 74; *Polyalthia macrantha* King, **FMP1** 58; tree to 23 m tall; Pk; endemic.

- 48.11.5 **Enicosanthum magnoliiflorum** (Hook.f. & Thomson) Airy Shaw, **S24** 187, **TFM1** 74; *Griffithia magnoliipetala* Maingay ex King, **FMP1** 26; tree to 17 m tall; lowland forest; Pk, Ph, Sl, Ml.
- 48.11.6 **Enicosanthum membranifolium** J. Sinclair, **S24** 191, **TFM1** 74; tree to 12 m tall; lowland forest; P. Langkawi, Pn, Kl, Sl.
- 48.11.7 **Enicosanthum praestigiosum** J. Sinclair, **S24** 192, **TFM1** 74; tree about 15 m tall; lowland freshwater swamp forest; S.E. Jh; endemic.
- 48.12.1 **Fissistigma fulgens** (Hook.f. & Thomson) Merr., **S24** 353; *Melodorum fulgens* Hook.f. & Thomson, **FMP1** 83; large liana; lowland forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 48.12.2 **Fissistigma hypoglaucom** (Miq.) Merr., **S24** 352; *Melodorum hypoglaucom* Miq., **FMP1** 86; large woody creeper; lowland forest; Pk.
- 48.12.3 **Fissistigma kingii** (Boerl.) Burkill, **S24** 358; *Melodorum kingii* Boerl., **FMP1** 85; liana; lowland forest; Pk, Ph, Sl, Ml, Jh.
- 48.12.4 **Fissistigma lanuginosum** (Hook.f. & Thomson) Merr., **S24** 357; *Melodorum lanuginosum* Hook.f. & Thomson, **FMP1** 86; liana; lowland forest; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.12.5a **Fissistigma latifolium** (Dunal) Merr. var. **latifolium**, **S24** 359; *Melodorum latifolium* (Dunal) Hook.f. & Thomson, **FMP1** 85; liana; lowland and hill forest; Pk.
- 48.12.5b **Fissistigma latifolium** (Dunal) Merr. var. **ovoideum** (King) J. Sinclair, **S24** 359; *Melodorum latifolium* (Dunal) Hook.f. & Thomson var. *ovoideum* King, **FMP1** 85; liana; lowland and hill forest; Pn, Tg, Pk, Sl, NS, Ml, Jh, Sp.
- 48.12.6 **Fissistigma litseifolium** (King) Merr., **S24** 351; *Melodorum litseifolium* King, **FMP1** 83; liana; lowland forest; Tg, Pk; endemic.
- 48.12.7 **Fissistigma manubriatum** (Hook.f. & Thomson) Merr., **S24** 355; *Melodorum manubriatum* Hook.f. & Thomson, **FMP1** 84; stout liana to 30 m long; lowland and hill forest; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.12.8 **Fissistigma rubiginosum** (A. DC.) Merr., **S24** 361; *Melodorum rubiginosum* (A. DC.) Hook.f. & Thomson, **FMP1** 88; liana; lowland forest; P. Langkawi, Pn, Pk, Ph.
- 48.13.1 **Friesodielsia affinis** (Hook.f. & Thomson) D. Das, **V17** 357; *Oxymitra affinis* Hook.f. & Thomson, **S24** 450; liana; lowland forest; Pn, Pk, Ml, Jh.
- 48.13.2 **Friesodielsia alpina** (J. Sinclair) Steenis, **V17** 358; *Oxymitra alpina* J. Sinclair, **S24** 455; scandent shrub; montane forest; only known from type, Maxwell's Hill, Pk; endemic.



- 48.13.3 **Friesodielsia argentea** (J. Sinclair) Steenis, **V17** 358; *Oxymitra argentea* J. Sinclair, **S24** 461; scandent shrub; lowland forest, recorded from limestone; Kl, Tg, Pk.
- 48.13.4 **Friesodielsia biglandulosa** (Blume) Steenis, **V17** 358; *Oxymitra biglandulosa* (Blume) Scheff., **FMP1** 81; liana to 35 m high; lowland forest; Pk, Sl, Ml, Sp.
- 48.13.5 **Friesodielsia borneensis** (Miq.) Steenis, **V17** 358; *Oxymitra borneensis* Miq. var. *sumatrana* Miq., **S24** 458; liana; lowland forest; Jh, Sp.
- 48.13.6 **Friesodielsia calycina** (King) Steenis, **V17** 358; *Oxymitra calycina* King, **FMP1** 81, **S24** 451; liana; climbing to 13 m; lowland and hill forest; Pn, Pk, ?Sp; endemic.
- 48.13.7 **Friesodielsia discolor** (Craib) D. Das, **V17** 359; *Oxymitra fornicata* Hook.f. & Thomson var. *glabra* Ridl., **FMP1** 80; *Oxymitra discolor* Craib; **S24** 457; liana; lowland forest; P. Langkawi, Ml.
- 48.13.8 **Friesodielsia excisa** (Miq.) Steenis, **V17** 359; *Oxymitra excisa* Miq., **S24** 452; liana; lowland forest; once from Sg Sembawang, Sp.
- 48.13.9 **Friesodielsia filipes** (Hook.f. & Thomson) Steenis, **V17** 359; *Oxymitra filipes* Hook.f. & Thomson, **FMP1** 80, **S24** 454; liana; lowland and hill forest; Kl, Pk, Ph, Sl, Ml, Jh; endemic.
- 48.13.10 **Friesodielsia glauca** (Hook.f. & Thomson) Steenis, **V17** 359; *Oxymitra glauca* Hook.f. & Thomson, **FMP1** 82, **S24** 460; liana; lowland and hill forest; Kd, Pn, Kl, Pk, Ph, Ml, Jh, Sp.
- 48.13.11 **Friesodielsia kingii** (J. Sinclair) Steenis, **V17** 360; *Oxymitra affinis* (non Hook.f. & Thomson) King, **FMP1** 79; *Oxymitra kingii* J. Sinclair, **S24** 453; scandent shrub; lowland forest; Pk, Ph, Jh.
- 48.13.12 **Friesodielsia latifolia** (Hook.f. & Thomson) Steenis, **V17** 360; *Oxymitra latifolia* Hook.f. & Thomson, **FMP1** 81, **S24** 456; liana to 20 m long; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.14.1 **Goniothalamus calycinus** J. Sinclair, **S24** 440, **TFM1** 76; tree to 7 m tall; hill forest; Tg; endemic.
- 48.14.2 **Goniothalamus curtisii** King, **FMP1** 68, **S24** 439, **TFM1** 76; tree to 10 m tall; lowland to lower montane forest, including limestone; Kl, Pk, Ph, Sl; endemic.
- 48.14.3 **Goniothalamus fulvus** Hook.f. & Thomson, **FMP1** 68, **S24** 428, **TFM1** 75; shrub; lowland forest; Tg, Ph, Ml, Jh; endemic.
- 48.14.4 **Goniothalamus giganteus** Hook.f. & Thomson, **FMP1** 65, **S24** 431, **TFM1** 75; tree to 23 m tall; hill forest; Kd, Pn, Pk, Ph, NS.

- 48.14.5 **Goniothalamus holttumii** J. Sinclair, **S24** 429, **TFM1** 75; tree to 10 m tall; montane forest; only known from Fraser's Hill, Ph; endemic.
- 48.14.6 **Goniothalamus macranii** Craib, **S24** 429, **TFM1** 75; tree to 7 m tall; lowland forest; Ph, Sl, Jh.
- 48.14.7 **Goniothalamus macrophyllus** (Blume) Hook.f. & Thomson, **FMP1** 66, **S24** 446, **TFM1** 76; shrub to 5 m tall; common in lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.14.8 **Goniothalamus malayanus** Hook.f. & Thomson, **FMP1** 66, **S24** 432, **TFM1** 75; tree to 16 m tall; lowland forest; Pk, Ph, Sl, Ml, Jh, Sp.
- 48.14.9 **Goniothalamus montanus** J. Sinclair, **S24** 443, **TFM1** 76; shrub or tree to 7 m tall; montane forest; Ulu Brang, Tg, and Cameron Highlands, Ph; endemic.
- 48.14.10 **Goniothalamus ridleyi** King, **FMP1** 68, **S24** 437, **TFM1** 76; tree to 23 m tall; lowland to montane forest; Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 48.14.11 **Goniothalamus rotundisepalus** M.R. Hend., **S24** 435, **TFM1** 75; shrub to 2 m tall; lowland and hill forest; Kl; endemic.
- 48.14.12 **Goniothalamus scortechinii** King, **FMP1** 67, **S24** 441, **TFM1** 76; tree to 7 m tall; hill forest; Pn, Kl, Pk, Ph, Sl.
- 48.14.13 **Goniothalamus subevenius** King, **FMP1** 64, **S24** 427, **TFM1** 75, **C13** 82; shrub or small tree; lowland forest, probably on limestone; Pk.
- 48.14.14 **Goniothalamus tapis** Miq., **FMP1** 67, **S24** 444, **TFM1** 76; tree to 10 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Jh, Sp.
- 48.14.15 **Goniothalamus tenuifolius** King, **FMP1** 64 incl. var. *arborescens* King, **S24** 434, **TFM1** 75; *Goniothalamus caudifolius* Ridl., **FMP1** 65; *Goniothalamus kunstleri* King, **FMP1** 67; tree to 7 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml; endemic.
- 48.14.16 **Goniothalamus tortilipetalus** M.R. Hend., **S24** 436, **TFM1** 76; tree to 6 m tall; lowland forest; Kl, Pk, Ph, Sl, Ml.
- 48.14.17 **Goniothalamus umbrosus** J. Sinclair, **S24** 445, **TFM1** 76; shrub to 3 m tall; lowland forest; Pn, Kl, Tg; endemic.
- 48.14.18 **Goniothalamus undulatus** Ridl., **S24** 434, **TFM1** 75; tree to 6 m tall; once from Bt Bayor, Kl.
- 48.14.19 **Goniothalamus uvarioides** King, **FMP1** 69, **S24** 442, **TFM1** 76; *Goniothalamus pendulifolius* Ridl., **FMP5** 287; shrub to 5 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl.

- 48.14.20 **Goniothalamus wrayi** King, **FMP1** 65, **S24** 438, **TFM1** 76; shrub to 4 m tall; hill forest; Pk, Sl.
- 48.15.1 **Marsypopetalum pallidum** (Blume) Kurz, **S24** 372, **TFM1** 77; shrub to 3 m tall; lowland forest; Ml, Jh.
- 48.16.1 **Meiogyne monosperma** (Hook.f. & Thomson) Heusden, **V07** 502; *Cananga monosperma* Hook.f. & Thomson, **FMP1** 44; *Oncodostigma monosperma* (Hook.f. & Thomson) J. Sinclair, **S24** 275, **TFM1** 82; tree to 20 m tall; lowland forest; Kd, Kl, Pk, Ph, Sl, Ml, Jh.
- 48.16.2 **Meiogyne virgata** (Blume) Miq., **S24** 277, **TFM1** 77, **V07** 495; *Cyathocalyx virgatus* (Blume) King, **FMP1** 36; tree to 20 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 48.17.1 **Melodorum aberrans** (Maingay ex Hook.f. & Thomson) J. Sinclair, **S24** 369; *Sphaerocoryne aberrans* (Maingay ex Hook.f. & Thomson) Ridl., **FMP1** 61; climbing shrub; lowland forest; Pk, Ph, NS, ?Sp.
- 48.17.2 **Melodorum siamense** (Scheff.) Bân, **V11** 686; *Rauwenhoffia siamensis* Scheff., **FMP1** 89, **S24** 228; scandent shrub; lowland forest; Kl, Pk, Ph.
- 48.18.1 **Mezzettia parviflora** Becc., **V03** 222; *Mezzettia leptopoda* (Hook.f. & Thomson) Oliv., **FMP1** 100, **S24** 327, **TFM1** 78; *Mezzettia curtisii* King, **FMP1** 101, **S24** 330; *Mezzettia herveyana* Oliv., **FMP1** 101, **S24** 328, **TFM1** 78; tree to 40 m tall; lowland forest to 300 m; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.18.2 **Mezzettia umbellata** Becc., **TFM1** 79, **V03** 220; tree to 21 m tall; lowland forest; twice from Sl.
- 48.19.1 **Mezzettiopsis creaghii** Ridl., **K16** 71; *Orophea palawanensis* Elmer, **S24** 398, **TFM1** 83; tree to 16 m tall; lowland and hill forest; Ph, Ml.
- 48.20.1 **Milium amplexicaulis** Ridl., **FMP1** 97, **S24** 380, **TFM1** 79, **C14** 82; small tree; frequently on limestone; Kd, Kl, Pk; endemic.
- 48.20.2 **Milium longipes** King, **FMP1** 96, **S24** 379, **TFM1** 79; tree to 10 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Ml, Sp.
- 48.20.3 **Milium parviflora** Ridl., **FMP1** 97, **S24** 380, **TFM1** 79, **C14** 82; small tree; limestone; Ps. P. Langkawi; endemic.
- 48.21.1 **Mitrella kentii** (Blume) Miq., **S24** 365; *Melodorum elegans* Hook.f. & Thomson, **FMP1** 88; *Melodorum pisocarpum* Hook.f. & Thomson, **FMP1** 88; liana; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp.
- 48.22.1 **Mitrephora maingayi** Hook.f. & Thomson, **FMP1** 73, **S24** 464, **TFM1** 80; tree to 15 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh.

- 48.22.2 **Mitrephora vulpina** C.E.C. Fisch., **S24** 465, **TFM1** 80; tree to 20 m tall; hill forest; Pk, Sl.
- 48.23.1 **Monocarpia marginalis** (Scheff.) J. Sinclair, **S24** 273, **TFM1** 80; *Cyathocalyx maingayi* Hook.f. & Thomson, **FMP1** 37; tree to 20 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 48.24.1 **Neo-Uvaria acuminatissima** (Miq.) Airy Shaw, **S24** 422, **TFM1** 82; tree to 15 m tall; lowland forest; Pn, Ph, Sl.
- 48.24.2 **Neo-Uvaria foetida** (Maingay ex Hook.f. & Thomson) Airy Shaw, **S24** 422, **TFM1** 82; *Popowia foetida* Maingay ex Hook.f. & Thomson, **FMP1** 76; large tree; lowland forest; Tg, NS, Ml.
- 48.25.1 **Orophea chrysantha** P.J.A. Kessler, **K16** 35; tree, 12 m tall; hill forest at 350 m; only known from type, Sg Anak Ketil, Kl; endemic.
- 48.25.2 **Orophea cuneiformis** King, **FMP1** 72, **S24** 394, **TFM1** 83, **C14** 83; tree to 13 m tall; restricted to limestone; Pk.
- 48.25.3 **Orophea enterocarpa** Maingay ex Hook.f. & Thomson, **FMP1** 70, **S24** 392, **TFM1** 83, **K16** 44; tree to 9 m tall; lowland forest to 500 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 48.25.4 **Orophea fusca** Craib, **K16** 57; small tree to 4 m tall; once collected, location uncertain.
- 48.25.5 **Orophea hastata** King, **FMP1** 71, **S24** 397, **TFM1** 83, **K16** 68; tree to 13 m tall; lowland forest; Kl, Pk, Ph, Sl, ?Sp.
- 48.25.6 **Orophea hirsuta** King, **FMP1** 70, **S24** 395, **TFM1** 83, **K16** 61; tree to 4 m tall; limestone; Ps, Kd, Kl, Pk.
- 48.25.7 **Orophea maculata** Scort. ex King, **FMP1** 71, **S24** 393, **TFM1** 83, **K16** 38; tree to 10 m tall; usually on limestone; Ph, Pk, Sl; endemic.
- 48.25.8 **Orophea malayana** P.J.A. Kessler, **K18** 509; tree to 8 m tall; on limestone hills; Kl, Pk, Ph; endemic.
- 48.25.9 **Orophea polycarpa** A. DC., **S24** 395, **TFM1** 83, **K16** 58; *Orophea gracilis* King, **FMP1** 71; tree to 10 m tall; limestone; Ps, Kl, Pk, Ph.
- 48.26.1 **Phaeanthus crassipetalus** Becc., **S24** 376, **TFM1** 84; *Phaeanthus lucidus* Oliv., **FMP1** 96; small tree; lowland forest; Kd, Pn, Pk, Ph, Sl.
- 48.26.2 **Phaeanthus ophthalmicus** (Roxb. ex G. Don) J. Sinclair, **S24** 374, **TFM1** 84; *Phaeanthus nutans* Hook.f. & Thomson, **FMP1** 95; small shrub; lowland forest; Kl, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

- 48.27.1 **Platymitra macrocarpa** Boerl., **K17** 475; *Platymitra siamensis* Craib, **S24** 400, **TFM1** 84; tree to 35 m tall; lowland forest; P, Langkawi, Kd, Pk, Sl, NS, Jh.
- 48.28.1 **Polyalthia angustissima** Ridl., **FMP1** 53, **S24** 286, **TFM1** 86; slender tree to 7 m tall; lowland forest; Jh, Sp; endemic.
- 48.28.2 **Polyalthia asteriella** Ridl., **FMP1** 53, **S24** 309, **TFM1** 87; *Polyalthia simiarum* (Hook.f. & Thomson) Hook.f. & Thomson var. *parvifolia* King, **FMP1** 61; tree to 12 m tall; lower montane forest; Kd, Pk.
- 48.28.3 **Polyalthia brunneifolia** J. Sinclair, **S24** 301, **TFM1** 86; shrub to 4 m tall; lowland and hill forest; Kl, Pk, Ph, Sl, NS, Jh; endemic.
- 48.28.4 **Polyalthia bullata** King, **FMP1** 55, **S24** 300, **TFM1** 86; shrub 2–3 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh.
- 48.28.5a **Polyalthia cauliflora** Hook.f. & Thomson var. **beccarii** (King) J. Sinclair, **S24** 294; *Polyalthia beccarii* King, **FMP1** 50; shrub or small tree; lowland forest; Tg, Ph, NS, Ml, Jh, Sp.
- 48.28.5b **Polyalthia cauliflora** Hook.f. & Thomson var. **cauliflora**, **FMP1** 51, **S24** 292, **TFM1** 86; shrub or small tree; lowland forest; Pk, Ph, Sl, Ml, Jh, Sp.
- 48.28.5c **Polyalthia cauliflora** Hook.f. & Thomson var. **desmantha** (Hook.f. & Thomson) J. Sinclair, **S24** 295; *Polyalthia desmantha* (Hook.f. & Thomson) Ridl., **FMP1** 49; shrub or small tree; lowland forest; Pn, Pk, Ph, NS, Ml, Jh.
- 48.28.5d **Polyalthia cauliflora** Hook.f. & Thomson var. **wrayi** (Hemsl.) J. Sinclair, **S24** 296; *Polyalthia wrayi* (Hemsl.) Ridl., **FMP1** 49; small tree; lowland forest; Pk; endemic variety.
- 48.28.6 **Polyalthia cinnamomea** Hook.f. & Thomson, **FMP1** 51, **S24** 286, **TFM1** 87; *Polyalthia velutinoso* Ridl., **FMP1** 56; tree to 20 m tall; lowland forest; Ps, Kd, Pn, Kl, Tg, Ph, Sl, NS, Ml, Jh.
- 48.28.7 **Polyalthia chrysotricha** Ridl., **FMP1** 57, **S24** 302, **TFM1** 86; tree to 10 m tall; lowland and hill forest; Ph, Sl; endemic.
- 48.28.8 **Polyalthia clavigera** King, **S24** 318, **TFM1** 87; *Polyalthia glomerata* King, **FMP1** 59; tree to 15 m tall; lowland and hill forest; Pn, Pk, Ph, Sl, NS, Sp.
- 48.28.9 **Polyalthia dumosa** King, **FMP1** 54, **S24** 297, **TFM1** 86; shrub; montane forest; Tg, Pk; endemic.
- 48.28.10 **Polyalthia glabra** (Hook.f. & Thomson) J. Sinclair, **S24** 315, **TFM1** 87; *Polyalthia curtisii* Ridl., **FMP1** 59; tree to 13 m tall; lowland forest; once each from Pn and Ml; endemic.

- 48.28.11 ***Polyalthia glauca*** (Hassk.) F. Muell., **S24** 321, **TFM1** 88, **R27** 209; tree to 45 m tall; swampy lowland forest; Tg, Pk, Ph, Sl, Jh, Sp.
- 48.28.12 ***Polyalthia hirtifolia*** J. Sinclair, **S24** 300, **TFM1** 86; *Polyalthia hirta* [non (Miq.) Diels] Ridl., **FMP1** 54; small tree; lowland forest; only known from type, Pn; endemic.
- 48.28.13 ***Polyalthia hookeriana*** King, **FMP1** 58, **S24** 312, **TFM1** 87; tree to 25 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Jh, Sp; endemic.
- 48.28.14 ***Polyalthia hypogaea*** King, **FMP1** 61, **S24** 315, **TFM1** 87; tree to 30 m tall; hill forest; Kd, Tg, Pk, Ph, Sl, NS, Jh; endemic.
- 48.28.15 ***Polyalthia hypoleuca*** Hook.f. & Thomson, **FMP1** 53, **S24** 320, **TFM1** 88, **R27** 227; tree to 30 m tall; lowland forest and peat swamps; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.28.16 ***Polyalthia jenkinsii*** (Hook.f. & Thomson) Hook.f. & Thomson, **S24** 305, **TFM1** 88; tree to 20 m tall; lowland forest; P. Langkawi, Pn, Pk, Ph, Ml, Sp.
- 48.28.17 ***Polyalthia lateriflora*** (Blume) King, **FMP1** 59, **S24** 310, **TFM1** 88; tree to 20 m tall; lowland to lower montane forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.28.18 ***Polyalthia lateritia*** J. Sinclair, **S24** 290, **TFM1** 86; shrub or tree to 13 m tall; lowland forest; Kl, Pk, Ph, Ml; endemic.
- 48.28.19 ***Polyalthia macropoda*** King, **FMP1** 60, **S24** 316, **TFM1** 87; tree to 15 m tall; lowland and hill forest; Pn, Pk, Ph, Sl, Jh, Sp; endemic.
- 48.28.20a ***Polyalthia motleyana*** (Hook.f.) Airy Shaw var. **glabrescens** Airy Shaw, **S24** 305; *Polyalthia oblonga* King, **FMP1** 57 in part; small tree to 4 m tall; lowland to lower montane forest; Pn, Sl, Jh.
- 48.28.20b ***Polyalthia motleyana*** (Hook.f.) Airy Shaw var. **motleyana**, **S24** 303; small tree to 4 m tall; hill forest; once from Gg Bintang, Kd.
- 48.28.20c ***Polyalthia motleyana*** (Hook.f.) Airy Shaw var. **oblonga** (King) J. Sinclair, **S24** 304; *Polyalthia oblonga* King, **FMP1** 57 in part; small tree to 4 m tall; lowland to lower montane forest; Pk, Sl.
- 48.28.21 ***Polyalthia obliqua*** Hook.f. & Thomson, **FMP1** 55, **S24** 290, **TFM1** 86; slender tree to 10 m tall; lowland and hill forest, also limestone; Kl, Ph, Sl, NS, Ml.
- 48.28.22 ***Polyalthia pachyphylla*** King, **FMP1** 59, **S24** 308, **TFM1** 87; tree to 30 m tall; only known from Larut, Pk, endemic.
- 48.28.23 ***Polyalthia parviflora*** Ridl., **FMP1** 54 in part, **S24** 299, **TFM1** 86; small tree; lowland forest; Ps, P. Langkawi.
- 48.28.24 ***Polyalthia pumila*** Ridl., **FMP1** 53, **S24** 289, **TFM1** 86; shrub to 1 m tall; hill forest; Pk, Jh; endemic.

- 48.28.25 ***Polyalthia rumphii*** (Blume) Merr., **S24** 306, **TFM1** 89; *Polyalthia kunstleri* King; **FMP1** 55; *Polyalthia canangioides* (Miq.) Boerl., **FMP1** 56; *Polyalthia scortechinii* King, **FMP1** 56; tree to 15 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.28.26 ***Polyalthia sclerophylla*** Hook.f. & Thomson, **FMP1** 58, **S24** 311, **TFM1** 87; tree to 16 m tall; lowland forest; Pk, Ph, NS, Ml, Jh, Sp.
- 48.28.27 ***Polyalthia stenopetala*** (Hook.f. & Thomson) Ridl., **FMP1** 50, **S24** 285, **TFM1** 86; tree to 10 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 48.28.28 ***Polyalthia suberosa*** (Roxb.) Thwaites, **S24** 298, **TFM1** 86; shrub; lowland forest; once from Kl.
- 48.28.29 ***Polyalthia sumatrana*** (Miq.) Kurz, **FMP1** 52, **S24** 319, **TFM1** 91, **R25** 220; tree to 24 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.
- 48.28.30 ***Polyalthia* sp. A**, **TFM1** 91; tree to 30 m tall; lowland forest; Ph, Sl, Jh; endemic.
- 48.28.31 ***Polyalthia* sp. B**, **TFM1** 91; tree to 25 m tall; lowland forest; Ph; endemic.
- 48.29.1 ***Popowia fusca*** King, **FMP1** 76, **S24** 471, **TFM1** 92; tree to 15 m tall; lowland forest; Pk, Ph, Sp; endemic.
- 48.29.2 ***Popowia pauciflora*** Maingay ex Hook.f. & Thomson, **FMP1** 75, **S24** 470, **TFM1** 92; tree, only known from type, Ml; endemic.
- 48.29.3 ***Popowia perakensis*** King, **FMP1** 76, **S24** 473, **TFM1** 92; shrub to 5 m tall; hill forest; Pk; endemic.
- 48.29.4 ***Popowia pisocarpa*** (Blume) Endl., **S24** 468, **TFM1** 91; *Popowia ramosissima* Hook.f. & Thomson, **FMP1** 75; tree to 7 m tall; lowland forest; common throughout.
- 48.29.5a ***Popowia tomentosa*** Maingay ex Hook.f. & Thomson var. **crinita** J. Sinclair, **S24** 475, **TFM1** 92; tree; lowland and hill forest; Tg, Pk, Sl, NS; endemic variety.
- 48.29.5b ***Popowia tomentosa*** Maingay ex Hook.f. & Thomson var. **tomentosa**, **FMP1** 77, **S24** 474, **TFM1** 92; tree; lowland and hill forest; Pn, Pk, Ml, Sp.
- 48.29.6 ***Popowia velutina*** King, **FMP1** 77, **S24** 472, **TFM1** 92; tree; lowland forest; only known from Gopeng, Pk; endemic.
- 48.30.1 ***Pseuduvaria cerina*** J. Sinclair, **S24** 419, **TFM1** 92; shrub; hill forest; once from Bukit Bauk, Tg; endemic.
- 48.30.2 ***Pseuduvaria galatea*** J. Sinclair, **S24** 414, **TFM1** 92; tree to 8 m tall; lowland forest; ?Ph, Jh; endemic.

- 48.30.3a **Pseuduvaria macrophylla** (Oliv.) Merr. var. **cymosa** J. Sinclair, **S24** 410; small tree; lowland and hill forest; Pk, Sl; endemic variety.
- 48.30.3b **Pseuduvaria macrophylla** (Oliv.) Merr. var. **macrophylla**, **S24** 408, **TFM1** 93; *Mitrephora macrophylla* Oliv., **FMP1** 74; small tree; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml.
- 48.30.3c **Pseuduvaria macrophylla** (Oliv.) Merr. var. **sessilicarpa** J. Sinclair, **S24** 412; small tree; lowland forest; Jh; endemic variety.
- 48.30.4 **Pseuduvaria monticola** J. Sinclair, **S24** 408, **TFM1** 93; tree to 5 m tall; montane forest; Ph, Sl.
- 48.30.5 **Pseuduvaria nervosa** J. Sinclair, **S24** 416, **TFM1** 93; tree; hill forest; once from Ulu Brang, Tg; endemic.
- 48.30.6 **Pseuduvaria rugosa** (Blume) Merr., **S24** 412, **TFM1** 92; tree to 7 m tall; lowland forest; Ps, Pn, Kl, Pk, Ph, Ml.
- 48.30.7a **Pseuduvaria setosa** (King) J. Sinclair var. **major** J. Sinclair, **S24** 406, **TFM1** 93; shrub to 3 m tall; lowland forest; only known from type, Tembeling, Ph; endemic variety.
- 48.30.7b **Pseuduvaria setosa** (King) J. Sinclair var. **setosa**, **S24** 405, **FMP1** 93; *Orophea setosa* King, **FMP1** 70; shrub to 3 m tall; lowland forest including limestone; Kd, Kl, Pk, Ph, Sl.
- 48.30.8 **Pseuduvaria taipingensis** J. Sinclair, **S24** 406, **TFM1** 93; small tree; hill forest; only known from Maxwell's Hill, Pk; endemic.
- 48.31.1 **Pyramidanthe prismatica** (Hook.f. & Thomson) J. Sinclair, **S24** 362; *Melodorum cylindricum* Hook.f. & Thomson, **FMP1** 84; *Melodorum prismaticum* Hook.f. & Thomson, **FMP1** 87; *Melodorum maingayi* Hook.f. & Thomson, **FMP1** 87; liana; lowland and hill forest; Kd, Pn, Pk, Ml, Sp.
- 48.32.1 **Sageraea elliptica** (A. DC.) Hook.f. & Thomson, **FMP1** 25, **S24** 181, **TFM1** 93; small tree; lowland forest; Kd, Pn, Tg, NS, Ml, Jh.
- 48.32.2 **Sageraea lanceolata** Miq., **FMP1** 25, **S24** 182, **TFM1** 93; small tree; lowland forest; Ph.
- 48.33.1 **Stelechocarpus burahol** Hook.f. & Thomson, **V08** 433; tree to 25 m tall; once from Jh.
- 48.33.2 **Stelechocarpus cauliflorus** (Scheff.) R.E. Fr., **S24** 183, **TFM1** 93, **V08** 435; *Stelechocarpus nitidus* King, **FMP1** 24; tree to 12 m tall; lowland forest; Ps, Pn, Kd, Tg, Pk, Ph, Sl, Jh.



- 48.34.1 **Trivalvaria macrophylla** (Blume) Miq., **S24** 196, **TFM1** 94; *Popowia nervifolia* Maingay ex Hook.f., **FMP1** 77; tree to 13 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph, Sl, Ml, Sp.
- 48.34.2 **Trivalvaria nervosa** (Hook.f. & Thomson) J. Sinclair, **S24** 197, **TFM1** 94; *Popowia nervosa* (Hook.f. & Thomson) Ridl., **FMP1** 78; tree to 13 m tall; lowland forest; Kd, Kl, Pk, Ph, Ml, Jh; endemic.
- 48.34.3 **Trivalvaria pumila** (King) J. Sinclair, **S24** 198, **TFM1** 74; *Popowia pumila* (King) Ridl., **FMP1** 78; shrub 2–3 m tall; lowland forest; Tg, Pk, Ph, Sl, Ml, Jh.
- 48.35.1 **Uvaria cordata** (Dunal) Alston, **S24** 207; *Uvaria macrophylla* Roxb., **FMP1** 30; woody climber; lowland forest; throughout.
- 48.35.2 **Uvaria curtisii** King, **FMP1** 32, **S24** 206; large woody climber; lowland forest; Pn, Pk, Ph, Jh, Sp; endemic.
- 48.35.3a **Uvaria grandiflora** Roxb. ex Hornem. var. **grandiflora**, **S24** 202; *Uvaria purpurea* Blume, **FMP1** 31; climbing; shrub; lowland forest; throughout.
- 48.35.3b **Uvaria grandiflora** Roxb. ex Hornem. var. **tuberculata** (King) J. Sinclair, **S24** 203; climbing shrub; lowland forest; Pk; endemic variety.
- 48.35.4 **Uvaria hirsuta** Jack, **FMP1** 31, **S24** 203; woody climber to 15 m high; lowland forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.35.5 **Uvaria javana** Dunal, **S24** 216; *Uvaria dulcis* auct. non Dunal, **FMP1** 30; large woody climber to 33 m high; lowland and hill forest; Pn, Pk, NS, Ml, Jh.
- 48.35.6 **Uvaria larep** Miq., **FMP1** 29; woody climber 7–14 m long; lowland forest; Pk.
- 48.35.7 **Uvaria leptopoda** (King) R.E. Fr., **S24** 212; *Uvariella leptopoda* (King) Ridl., **FMP1** 35; liana to 20 m or more high; lowland forest; Pk, Ml, Jh, Sp; endemic.
- 48.35.8 **Uvaria lobbiana** Hook.f. & Thomson, **FMP1** 30, **S24** 208; *Uvaria subrepanda* Wall., **FMP1** 34; large climber reaching 50 m or more; lowland forest; Pn, Pk, Ph, Sl, Ml, Sp.
- 48.35.9 **Uvaria pauci-ovulata** Hook.f. & Thomson, **FMP1** 32, **S24** 217; stout woody climber; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp; endemic.
- 48.35.10 **Uvaria rufa** Blume, **S24** 211; *Uvaria ridleyi* King, **FMP1** 32; *Uvaria astrosticta* Miq., **FMP1** 34; woody climber; lowland forest; Ps, Kd, Pn, Pk, Ph.
- 48.35.11 **Uvaria scortechinii** King, **FMP1** 33, **S24** 218; scrambling shrub; only known from type, Pk; endemic.

- 48.36.1 **Xylopia caudata** Hook.f. & Thomson, **FMP1** 93, **S24** 339, **TFM1** 95; tree to 16 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.36.2 **Xylopia elliptica** Maingay ex Hook.f. & Thomson, **FMP1** 92, **S24** 342, **TFM1** 95; tree to 20 m tall; lowland forest; Kd, Pn, Tg, Pk, Ml; endemic.
- 48.36.3a **Xylopia ferruginea** (Hook.f. & Thomson) Hook.f. & Thomson var. **ferruginea**, **FMP1** 93, **S24** 343, **TFM1** 95; tree to 20 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 48.36.3b **Xylopia ferruginea** (Hook.f. & Thomson) Hook.f. & Thomson var. **oxyantha** (Hook.f. & Thomson) J. Sinclair, **S24** 345, **TFM1** 96; *Xylopia oxyantha* Hook.f. & Thomson, **FMP1** 90; tree to 20 m tall; lowland forest; Ph, Sl, NS, Jh, Sp.
- 48.36.4a **Xylopia fusca** Maingay ex Hook.f. & Thomson var. **fusca**, **FMP1** 92, **S24** 337, **TFM1** 96; tree to 30 m tall; swampy lowland forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 48.36.4b **Xylopia fusca** Maingay ex Hook.f. & Thomson var. **sessiliflora** Kochummen & Whitmore, **TFM1** 97; tree; dry lowland forest; Kd, NS, Jh; endemic variety.
- 48.36.5 **Xylopia magna** Maingay ex Hook.f. & Thomson, **FMP1** 93, **S24** 338, **TFM1** 97; tree to 20 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Sp; endemic.
- 48.36.6a **Xylopia malayana** Hook.f. & Thomson var. **malayana**, **FMP1** 91, **S24** 340, **TFM1** 98; *Xylopia pustulata* Hook.f. & Thomson, **FMP1** 91; tree to 20 m tall; lowland forest; Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 48.36.6b **Xylopia malayana** Hook.f. & Thomson var. **obscura** Kochummen, **TFM1** 98; tree; lowland forest; Tg, Ph, Jh; endemic variety.
- 48.36.7 **Xylopia stenopetala** Oliv., **FMP1** 92, **S24** 342, **TFM1** 98; tree to 20 m tall; hill forest; Pn, Ph, Sl.
- 48.36.8 **Xylopia subdehiscens** (King) J. Sinclair, **S24** 345, **TFM1** 95; *Alphonsea subdehiscens* King, **FMP1** 98; tree to 7 m tall; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, Jh; endemic.

#### 49. APOCYNACEAE

- 49.1.1 **Aganosma marginata** (Roxb.) G.Don, **FMP2** 365, **M61** 469; climbing shrub; open country; widespread.
- 49.1.2 **Aganosma wallichii** G.Don, **M61** 478; *Aganosma calycina* A. DC., **FMP2** 365; immense climber; lowland forest; Pk, Sl, Jh.

- 49.2.1 **Alstonia angustifolia** Wall. ex A. DC., **FMP2** 348, **TFM2** 8 incl. var. *latifolia* King & Gamble, **M15** 26; *Alstonia latifolia* (King & Gamble) Ridl., **FMP2** 347; small tree about 10 m tall; often in seasonal swamps in the lowlands; Pn, Ph, Sl, Ml, Jh, Sp.
- 49.2.2 **Alstonia angustiloba** Miq., **FMP2** 347, **TFM2** 9, **M15** 24, **K57** 521; *Alstonia pneumatophora* Back. ex L.G. den Berger var. *petiolata* Monach., **TFM2** 11; big tree to 45 m tall, 3 m girth; lowlands and hills to 700 m; common throughout Malay Peninsula.
- 49.2.3 **Alstonia macrophylla** Wall. ex G. Don, **FMP2** 347, **TFM2** 9, **M15** 28; *Alstonia pangkorensis* King & Gamble, **FMP2** 348; tree to 30 m tall; mostly in hill forest; Kd, Kl, Tg, Pn, Pk, Sl.
- 49.2.4 **Alstonia pneumatophora** Back. ex L.G. den Berger, **TFM2** 11, **M15** 25; tree to 40 m; lowland swamps or hill forest; Pk, Ph, Sl, NS.
- 49.2.5 **Alstonia rostrata** C.E.C. Fisch., D.J. Middleton *pers. comm.*; *Alstonia undulifolia* Kochummen & K.M. Wong, **K57** 513; tree to 30 m; dipterocarp forest at 300–1000 m; Kd, Kl, Ph.
- 49.2.6a **Alstonia scholaris** (L.) R.Br. var. *scholaris*, **FMP2** 346, **TFM2** 11, **M15** 23; tree to over 36 m tall; lowlands to mountains at 1000 m, including secondary forest; Kd, Kl, Tg, Ph, Sl, Ml, Jh.
- 49.2.6b **Alstonia scholaris** (L.) R.Br. var. *velutina* Monach., **TFM2** 11, **M15** 24; hairy-leaved form; collected once, Tekal, Ph.
- 49.2.7 **Alstonia spatulata** Blume, **FMP2** 346, **TFM2** 12, **M15** 25; small tree; most frequently in wet lowland forests; Kl, Tg, Pk, Ph, Sl, Ml, Jh.
- 49.3.1 **Alyxia angustifolia** Ridl., **FMP2** 333, **M16** 385; shrub or climber; rocky slopes and ridges usually in mountains; Kl, Ph, Sl; endemic.
- 49.3.2a **Alyxia oleifolia** King & Gamble var. *oleifolia*, **FMP2** 333, **M16** 384; liana; montane forest at 1100–2000 m; Pk, Ph, Sl.
- 49.3.2b **Alyxia oleifolia** King & Gamble var. *tenuifolia* Ridl., **FMP2** 333, **M16** 385; liana; montane forest at 1500–2000 m; Ph, Sl.
- 49.3.3 **Alyxia pilosa** Miq., **FMP2** 332, **M16** 382; climber; lowland and montane forest; Pk, Ph, Sl, Ml, Jh, Sp.
- 49.3.4a **Alyxia reinwardtii** Blume var. *insularis* Markgr., **M16** 387; scandent shrub; Pk, Ml, Jh; endemic variety.
- 49.3.4b **Alyxia reinwardtii** Blume var. *lucida* (Wall.) Markgr., **M16** 389; *Alyxia lucida* Wall.; **FMP2** 332; slender climber; often coastal; Kd, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

- 49.3.4c **Alyxia reinwardtii** Blume var. **meiantha** (Stapf) Markgr., **M16** 389; *Alyxia forbesii* King & Gamble, **FMP2** 334; slender climber; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 49.3.4d **Alyxia reinwardtii** Blume var. **pumila** (Hook.f) Markgr., **M16** 388; *Alyxia pumila* Hook.f., **FMP2** 333; slender climber; hills and mountains; Kd, Ph, Ml.
- 49.3.4e **Alyxia reinwardtii** Blume var. **reinwardtii**, **M16** 388; slender climber; Ph, Jh.
- 49.3.5 **Alyxia schlechteri** Lév., D.J. Middleton *pers. comm.*; *Alyxia calcicola* Markgr., **M16** 405; scandent shrub; limestone hills; Kl, Ph, Sl.
- 49.3.6 **Alyxia scortechinii** King & Gamble, **FMP2** 334, **M16** 394; *Alyxia selangorica* King & Gamble, **FMP2** 334; liana; lowland and montane forest; Pk, Ph, Sl.
- 49.4.1 **Anodendron axillare** Merr., **M39** 42; climber; once from Sg Krian, Pk.
- 49.4.2 **Anodendron candolleianum** Wight, **FMP2** 362, **M39** 47; liana; lowland forest; P. Langkawi, Pn, Pk, Sl, Ml.
- 49.4.3 **Anodendron coriaceum** (Blume) Miq., **M39** 48; climber; Pk.
- 49.4.4 **Anodendron gracile** (King & Gamble) D.J. Middleton, **M39** 50, *Cleghornia gracilis* King & Gamble, **FMP2** 363, **X01** 20; liana; hill forest at 1000–1300 m; Kl, Pk, Ph.
- 49.4.5 **Anodendron lanceolatum** King & Gamble, **FMP2** 362, **M39** 64; climber; Tapah, Pk.
- 49.4.6 **Anodendron paniculatum** A. DC., **FMP2** 361, **M39** 54; robust climber; open areas; Ps, Pn.
- 49.4.7 **Anodendron pauciflorum** Hook.f., **FMP2** 362, **M39** 58; climber; hill forest; Pn, Pk.
- 49.4.8 **Anodendron tubulosum** (Ridl.) D.J. Middleton, **M38** 89, **M39** 61; *Micrechites tubulosa* Ridl., **FMP5** 321; climber; montane forest; Pk, Sl.
- 49.4.9 **Anodendron wrayi** King & Gamble, **FMP2** 362, **M39** 63; *Trachelospermum obtusifolium* Ridl., **FMP5** 321, **W34** 96; liana; lower montane forest at 1200–1600 m; Pk, Ph; endemic.
- 49.5.1 **Beaumontia multiflora** Teijsm. & Binn., **R33** 27; large woody climber; only known from Batu Caves, Sl.
- 49.5.2 **Beaumontia murtonii** Craib, **R33** 31; large woody climber; collected once at Genting Simpah, Sl.

- 49.6.1 **Catharanthus roseus** (L.) G. Don; **M13** 150, **P20** 3; *Lochnera rosea* (L.) Rchb. ex Endl., **FMP2** 340; herb; seashores and waste sandy places; widespread; naturalized from Madagascar.
- 49.7.1 **Cerbera manghas** L., **TFM2** 12; *Cerbera lactaria* Buch.-Ham. ex D. Dietr., **FMP2** 339; small tree; rocky and sandy coasts; widespread.
- 49.7.2 **Cerbera odollam** Gaertn., **FMP2** 339, **TFM2** 12; small tree; mangrove swamps and muddy coasts; widespread.
- 49.8.1 **Chilocarpus costatus** Miq., **FMP2** 326, **M13** 161; stout liana; lowland and hill forest to 1000 m; Tg, Pn, Pk, Ph, Sl, Ml, Jh.
- 49.8.2 **Chilocarpus decipiens** Hook.f., **FMP2** 327, **M13** 164; slender liana; lowland forest; Pk, Ph, Sl, NS, Ml, Jh.
- 49.8.3 **Chilocarpus denudatus** Blume, **M13** 164; *Chilocarpus atroviridis* Blume, **FMP2** 327; slender climber; forest to 1000 m; Pk, Sl, Ml.
- 49.8.4 **Chilocarpus embelioides** King & Gamble, **FMP2** 327, **M13** 162; scandent shrub; Tg, Pk.
- 49.8.5 **Chilocarpus minutiflorus** King & Gamble, **FMP2** 328, **M13** 164; climber; Pk.
- 49.8.6 **Chilocarpus nigrescens** King & Gamble, **FMP2** 328, **M13** 161; liana; only known from Penang Hill; endemic.
- 49.8.7 **Chilocarpus obtusifolius** Merr., **M13** 163; climber; peat swamp forest; Jh.
- 49.8.8 **Chilocarpus tuberculatus** Markgr., **M13** 164; scandent shrub; Pk.
- 49.8.9 **Chilocarpus vernicosus** Blume, **M13** 161; *Chilocarpus cantleyi* King & Gamble, **FMP2** 328; *Chilocarpus enervis* Hook.f., **FMP2** 327; liana; lowland and hill forest, including swamps; Pk, Sl, Ml, Jh, Sp.
- 49.9.1 **Chonemorpha fragrans** (Moon) Alston, **R04** 36; *Chonemorpha macrophylla* (Roxb.) G. Don, **C05** 49; stout liana; lowland forest to 200 m; Pk.
- 49.9.2 **Chonemorpha penangensis** Ridl., **FMP2** 360, **C05** 51, **R04** 44; liana; lowlands to 300 m; Pn, Pk, Ph, Ml; endemic.
- 49.9.3 **Chonemorpha verrucosa** (Blume) D.J. Middleton, **M35** 455; *Rhynchodia wallichii* (DC.) Benth., **FMP2** 361, **TFM2** 6; liana; lowland forest; P. Langkawi, Pk, Ph.
- 49.10.1 **Cleghornia malaccensis** (Hook.f.) King & Gamble, **FMP2** 363, **X01** 21; forest liana; Pk, Sl, Ml.

- 49.11.1 **Dyera costulata** (Miq.) Hook.f., **FMP2** 345, **M54** 190, **TFM2** 13; *Dyera laxiflora* Hook.f., **FMP2** 345; huge lactiferous tree to more than 60 m; lowland forests, sometimes swamps; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 49.12.1 **Epigynum auritum** (C.K. Schneid.) Tsiang & P.T. Li, D.J. Middleton *pers. comm.*; *Trachelospermum curtisii* King & Gamble, **FMP2** 366, **W34** 73; liana; Pn, Pk.
- 49.12.2 **Epigynum curtisii** King & Gamble, **FMP2** 367; climber; hill forest; Penang Hill; endemic.
- 49.12.3 **Epigynum griffithianum** Wight, D.J. Middleton *pers. comm.*; *Epigynum perakense* King & Gamble, **FMP2** 366; climber; lowland forest; Kd, Pk.
- 49.12.4 **Epigynum maingayi** Hook.f., **FMP2** 367; climber; open forest; Pk, Ph, Sl, NS, Ml; endemic.
- 49.12.5 **Epigynum ridleyi** King & Gamble, **FMP2** 367; slender climber; lowland forest; Sl; endemic.
- 49.13.1 **Holarrhena curtisii** King & Gamble, **TFM2** 4, **D10** 6; *Holarrhena pulcherrima* Ridl., **FMP2** 349; *Holarrhena densiflora* Ridl., **FMP2** 349; shrub to 2.5 m; lowland forest to 400 m; Ps, Kd.
- 49.14.1 **Hunteria zeylanica** (Retz.) Gardn. *ex* Thwaites, **TFM2** 16, **M19** 169; *Hunteria corymbosa* Roxb., **FMP2** 335; small tree to 15 m tall; lowlands and hills to 540 m; Kd, Tg, Pk, Ph, Sl, NS.
- 49.15.1 **Ichnocarpus frutescens** (L.) W.T. Aiton, **FMP2** 364, **M38** 77; *Ichnocarpus ovatifolius* A. DC., **FMP2** 364; straggling climber to 20 m; forests, often near river banks.
- 49.15.2 **Ichnocarpus polyanthus** (Blume) P.I. Forst., **M38** 82; *Micrechites scortechinii* (King & Gamble) Ridl., **FMP2** 368; climber; Kd.
- 49.15.3 **Ichnocarpus serpyllifolius** (Blume) P.I. Forst., **M38** 85; *Micrechites brachypetala* Ridl., **FMP2** 368; *Micrechites furcata* Ridl., **FMP2** 368; *Micrechites tenuifolia* Ridl., **FMP2** 369; liana or creeper; lowland forest; widespread.
- 49.16.1 **Kibatalia arborea** (Blume) G. Don, **TFM2** 18, **R33** 43; tree to 36 m; lowland and hill forest to 600 m; Ph, Sl.
- 49.16.2 **Kibatalia laurifolia** (Ridl.) Woodson, **R33** 60; small tree to 20 m; once collected, Pk.
- 49.16.3 **Kibatalia maingayi** (Hook.f.) Woodson, **TFM2** 18, **R33** 69; *Vallisneria maingayi* Hook.f., **FMP2** 351; tree to 27 m; lowland forests; Pn, Pk, Ph, Sl, NS, Ml, Jh.

- 49.16.4 **Kibatalia villosa** Rudjiman, **R33** 82; tree to 30 m; once collected, Rengam F. R., Jh.
- 49.17.1 **Kopsia alba** Ridl. ex M.R. Hend., **H34** 78; shrub to 5 m tall; rocky forest, once from limestone; Kl and P. Tioman, Ph; endemic.
- 49.17.2 **Kopsia deverrei** L. Allorge, **A10** 93; small tree to 8 m; lowland and hill forest; Jh; endemic.
- 49.17.3 **Kopsia fruticosa** (Ker Gawl.) A. DC., **M14** 422; possibly native, widely cultivated.
- 49.17.4 **Kopsia griffithii** King & Gamble, **FMP2** 337 incl. var. *paucinervia* King & Gamble, **TFM2** 19, **M12** 421; shrub or small tree; lowlands to 1000 m; Pk, Sl, NS, Ml, Jh.
- 49.17.5 **Kopsia lapidilecta** Sleesen, **V16** 137, **M14** 423; shrub or small tree; once collected, Jh.
- 49.17.6 **Kopsia larutensis** King & Gamble, **FMP2** 337, **TFM2** 19, **M14** 423; shrub or small tree to 8 m; Kd, Kl, Pk.
- 49.17.7 **Kopsia macrophylla** Hook.f., **FMP2** 338, **TFM2** 19, **M14** 423; *Kopsia ridleyana* King & Gamble, **FMP2** 338; small tree to 6 m; Kl, Tg, Pk, Ph, NS, Ml, Jh; endemic.
- 49.17.8 **Kopsia majumdarii** M. G. Gangop. & Chakrab., **G04** 59; small tree to 9 m tall; lowland forest; Pk, only known from type; endemic.
- 49.17.9 **Kopsia pauciflora** Hook.f., **FMP2** 337, **TFM2** 19, **M14** 422; shrub or small tree to 7 m; Kl, Tg, Pk, Ph, Sl, NS, Ml.
- 49.17.10 **Kopsia profunda** Markgr., **M14** 424; *Kopsia mitrephora* Sleesen, **TFM2** 19 (Malayan plants only); shrub or small tree; known only from Tg; endemic.
- 49.17.11 **Kopsia scortechinii** King & Gamble, **FMP2** 337, **TFM2** 20, **M14** 421; small tree to 15 m; Gg Bujang Melaka, Pk.
- 49.17.12 **Kopsia singapurensis** Ridl., **FMP2** 336, **TFM2** 19, **M14** 421; small tree to 5 m; common in lowland swamp forest; Pk, Ph, Sl, NS, Jh, Sp.
- 49.17.13 **Kopsia teoi** L. Allorge, **A09** 97; shrub to 4 m tall; lowland forest; Jh; endemic.
- 49.17.14 **Kopsia terenganensis** L. Allorge & C. Wiart, **A11** 434; shrub 1.5–3 m tall; only known from type, Dungun, Tg; endemic.
- 49.18.1 **Leuconotis eugeniifolia** A. DC., **FMP2** 329, **M13** 155; climber; lowland forest margins; Pn southward.
- 49.18.2 **Leuconotis griffithii** Hook.f., **FMP2** 329, **M13** 156; forest climber; Kl southward; endemic.

- 49.18.3 **Leuconotis maingayi** Dyer *ex* Hook.f., **FMP2** 329, **M13** 156; climber; lowland forest margins; Pk southward; endemic.
- 49.19.1 **Melodinus coriaceus** Oliv., **FMP2** 331, **M13** 153; big climber; hill forests; Pn, Pk, Ml.
- 49.19.2 **Melodinus micranthus** Hook.f., **FMP2** 331, **M13** 154; lowland forest climber; Pn, NS, Ml, Jh, Sp.
- 49.19.3 **Melodinus monogynus** Roxb., **FMP2** 330, **M13** 152; large climber, beautiful fragrant plant; hill forest; Pn, Pk.
- 49.19.4 **Melodinus orientalis** Blume, **FMP2** 330, **M13** 154; *Melodinus citriformis* King & Gamble, **FMP2** 331; large climber; hill forests; Kl, Pn, Pk, Ph, Jh.
- 49.19.5 **Melodinus perakensis** King & Gamble, **FMP2** 331, **M13** 153; climber; on limestone hills 100–300 m; Pk; endemic.
- 49.20.1 **Neisosperma oppositifolium** (Lam.) Fosberg & Sachet, **M17** 243; *Ochrosia borbonica* *auct. non* Gmel., **FMP2** 340; *Ochrosia oppositifolia* (Lam.) K. Schum., **TFM2** 20; small tree to 10 m; on rocky and sandy shores; Pk, Jh, Sp.
- 49.21.1 **Parameria densiflora** Oliv., **FMP2** 359, **M40** 75; climber; hill forest; Penang Hill.
- 49.21.2 **Parameria laevigata** (A.L. Juss.) Moldenke, **B03** 234; *Parameria glandulifera* (Wall. *ex* G. Don) Benth. *ex* Kurz, **FMP2** 358; large climber; lowland forest; Pn, Pk, Ph, Sl, NS, Ml, Sp.
- 49.21.3 **Parameria polyneura** Hook.f., **FMP2** 359, **M40** 80; climber; lowland forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.
- 49.22.1 **Parsonsia alboflavescens** (Dennst.) Mabb., **M02** 532; *Parsonsia spiralis* Wall. *ex* G. Don, **FMP2** 350; *Parsonsia helicandra* Hook. & Arn., **TFM2** 6; vine; climbing on bushes, often near the sea; widespread.
- 49.22.2 **Parsonsia kunstleri** King & Gamble, **FMP2** 350; vine; Chanderi, Pk; endemic.
- 49.22.3 **Parsonsia penangiana** King & Gamble, **FMP2** 351; *Artia penangiana* (King & Gamble) Pichon, **TFM2** 6; vine; Pn.
- 49.22.4 **Parsonsia stenocarpa** King & Gamble, **FMP2** 351; vine; lowland forests; Gopeng, Pk; endemic.
- 49.23.1 **Pottsia laxiflora** (Blume) Kuntze, **TFM2** 6; *Pottsia cantoniensis* Hook. & Arn., **FMP2** 352; large climber; Pn, Pk, Ml.
- 49.24.1 **Rauvolfia sumatrana** Jack, **FMP2** 336, **M18** 166; *Rauvolfia reflexa* Teijsm. & Binn., **TFM2** 21; tree up to 20 m; lowland forest; Pk.



- 49.24.2 **Rauvolfia verticillata** (Lour.) Baill., **TFM2** 21, **M18**; 160; *Rauvolfia perakensis* King & Gamble, **FMP2** 335; shrub 2–3 m tall; lowlands, hills and mountains; Kd, Kl, Pk, Ph, Sl.
- 49.25.1 **Spirolobium cambodianum** Baill., **TFM2** 5; *Holarrhena pauciflora* Ridl., **FMP2** 349; small shrub; open sandy places; Ps, P, Langkawi, Ph.
- 49.26.1 **Strophanthus caudatus** (L.) Kurz, **B16** 54; *Strophanthus dichotamus* DC., **FMP2** 354; shrub or climber; forest margins to 900 m; Pk, Sl, Ml, Jh, Sp.
- 49.26.2 **Strophanthus perakensis** Scort. ex King & Gamble, **FMP2** 355, **B16** 119; climber; type only Malayan collection; Dipang, Pk.
- 49.26.3 **Strophanthus singaporianus** (Wall. ex G. Don) Gilg, **B16** 139; *Strophanthus brevicaudatus* Wight, **FMP2** 356; shrub or climber; Ml, Sp.
- 49.26.4 **Strophanthus wallichii** A. DC., **FMP2** 355, **B16** 151; shrub or climber; lowland forest; Ps, P, Langkawi.
- 49.27.1 **Tabernaemontana corymbosa** Roxb. ex Wall., **TFM2** 23, **L17** 138; *Ervatamia corymbosa* (Roxb. ex Wall.) King & Gamble, **FMP2** 341 incl. var. *pubescens* King & Gamble; *Tabernaemontana hirta* Hook.f., **TFM2** 23; *Ervatamia hirta* (Hook.f.) King & Gamble, **FMP2** 342; *Ervatamia pauciflora* auct. non Blume, **FMP2** 342 incl. var. *minor* Ridl.; *Ervatamia jasminiflora* Ridl., **FMP2** 342, **TFM2** 23; shrub or small tree to 10 m; lowland and hill forest to 900 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 49.27.2 **Tabernaemontana crispa** Roxb. ex Wall., **L17** 145; *Ervatamia corymbosa* var. *kelsallii* King & Gamble, **FMP2** 342; *Ervatamia curtisii* King & Gamble, **FMP2** 344, **TFM2** 23; *Ervatamia cylindricarpa* King & Gamble, **FMP2** 344; *Tabernaemontana cylindricarpa* (King & Gamble) Merr., **TFM2** 23; small shrub to 2 m, lowland and hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh.
- 49.27.3 **Tabernaemontana dichotoma** Roxb. ex Wall., **L17** 149; *Ervatamia polyneura* King & Gamble, **FMP2** 341; *Tabernaemontana polyneura sensu* Whitmore, **TFM2** 23; shrub or small tree to 12 m; in montane forest at 750–1500 m; Kl, Pk, Ph, Sl, Ml.
- 49.27.4 **Tabernaemontana divaricata** (L.) R.Br. ex Roem. & Schult., **L17** 153; *Ervatamia coronaria* (Jacq.) Stapf, **FMP2** 342; shrub to 2 m; possibly only a garden escape.
- 49.27.5 **Tabernaemontana macrocarpa** Jack, **L17** 165; *Tabernaemontana sphaerocarpa* auct. non Blume, **TFM2** 23; small tree to 25 m tall; understorey of lowland forest; to 1000 m; Kd, Jh.

- 49.27.6 **Tabernaemontana pauciflora** Blume, **L17** 182; *Tabernaemontana malaccensis* Hook.f., **TFM2** 23; *Ervatamia malaccensis* (Hook.f.) King & Gamble, **FMP2** 343; shrub to 2 m; lowland forest to 600 m, often on streambanks; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 49.27.7 **Tabernaemontana peduncularis** Wall., **TFM2** 23, **L17** 187; *Ervatamia peduncularis* (Wall.) King & Gamble, **FMP2** 343; shrub to 5 m; forest understorey to 1700 m; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.
- 49.28.1 **Urceola brachysepala** Hook.f., **FMP2** 357, **M40** 84; *Urceola maingayi* Hook.f., **FMP2** 357; big climber; lowland and hill forest to 1000m; Pn, Pk, Ph, Sl, Ml, Jh, Sp.
- 49.28.2 **Urceola elastica** Roxb., **FMP2** 356, **M40** 86; stout climber; lowland forest; Pn, Kl, Pk, Sl, NS, Ml.
- 49.28.3 **Urceola lucida** (Wall. ex G. Don) Benth. ex Kurz, **FMP2** 358, **M40** 94; stout climber; lowland and hill forest to 950 m; P. Langkawi, Pn, Pk, Ml, Sp.
- 49.28.4 **Urceola maingayi** D.J. Middleton, **M40** 95; climber; twice from Ph; endemic.
- 49.28.5 **Urceola micrantha** (Wall. ex G. Don) D.J. Middleton, **M36** 762, **M40** 97; *Ecdysanthera micrantha* (Wall. ex G. Don) Hook.f., **FMP2** 360; *Ecdysanthera multiflora* King & Gamble, **FMP2** 360; *Urceola montana* M.R. Hend., **H35** 108; large climbing shrub; lowland and hill forest to 1500 m; once each from Pk, Ph and Sl.
- 49.28.6 **Urceola rosea** (Hook. & Arn.) D.J. Middleton, **M37** 765, **M40** 94; *Ecdysanthera rosea* Hook. & Arn., **FMP5** 320; slender climber; lowland and hill forest; Ps, Pk, Ph, Sl.
- 49.28.7 **Urceola torulosa** Hook.f., **FMP2** 358, **M40** 110; *Urceola malaccensis* Hook.f., **FMP2** 357; climber; lowland forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 49.29.1 **Vallariopsis lancifolia** (Hook.f.) Woodson, **TFM2** 4, **R33** 89; *Vallaris lancifolia* Hook.f., **FMP2** 352; climber; swamp forest; Pn, Kl, Pk, Sl, Ml.
- 49.30.1 **Willughbeia angustifolia** (Miq.) Markgr., **M14** 414, **M36** 4; *Willughbeia flavescens* Dyer ex Hook.f. var. *rufescens* Ridl., **FMP2** 325; *Urnularia rufescens* (Dyer ex Hook.f.) Stapf ex S. Moore, **M12** 409; large liana reaching 60 m in length; lowland forest; Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp.
- 49.30.2 **Willughbeia edulis** Roxb., **FMP2** 323, **M36** 11; *Willughbeia coriacea* Wall., **FMP2** 323, **M14** 412; *Willughbeia firma* Blume, **FMP2** 323; *Willughbeia dulcis* Ridl., **FMP2** 325, **M14** 414; stout liana to 30 m long; lowland forests; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 49.30.3 **Willughbeia flavescens** Dyer ex Hook.f., **FMP2** 325, **M36** 12; *Urnularia flavescens* (Dyer ex Hook.f.) Stapf, **M14** 409; *Melodinus cymosus* Ridl., **FMP2** 331; liana to 30 m long; lowland forest; Pn, Pk, Ph, Sl, Ml, Jh, Sp.

- 49.30.4 **Willughbeia grandiflora** Dyer *ex* Hook.*f.*, **FMP2** 322, **M14** 411, **M36** 14; stout liana; lowland swamp forest; Sl, Jh, ?Sp.
- 49.30.5 **Willughbeia oblonga** Dyer *ex* Hook.*f.*, **FMP2** 323, **M14** 411, **M36** 16; liana; lowland forest; ?Kd, Sl, Ml, Jh; endemic.
- 49.30.6 **Willughbeia tenuiflora** Dyer *ex* Hook.*f.*, **FMP2** 325, **M14** 412, **M36** 18; big liana; lowland forests; Kd, Kl, ?Pn, Pk, Sl, NS, Ml, Jh, Sp.
- 49.31.1 **Wrightia dubia** (Sims) Spreng., **N03** 172, **TFM2** 24; *Strophanthus jackianus* Wall. *ex* G.Don, **FMP2** 355; shrub to 3 m; Kd, Pn, Ph.
- 49.31.2a **Wrightia laevis** Hook.*f.* ssp. **laevis**, **FMP2** 353, **N03** 137, **TFM2** 24; small tree to 15 m; hill forest; Kl, Pk, Ph, Sl, NS, Jh, Sp.
- 49.31.2b **Wrightia pubescens** R.Br. ssp. **laniti** (Blanco) Ngan, **N03** 153, **TFM2** 23; *Wrightia javanica* A. DC., **FMP2** 353; small tree to 7 m; Ps, Kd, Tg, Pn, Pk.
- 49.31.3 **Wrightia religiosa** (Teijsm. & Binn.) Benth., **FMP2** 353, **N03** 159, **TFM2** 24; shrub to 2 m; P. Langkawi, Ps; often cultivated elsewhere.

## 50. AQUIFOLIACEAE

- 50.1.1 **Ilex baasiana** B.C. Stone & Kiew, **S67** 195; epiphytic shrub with tuberous roots; montane forest at about 1500 m; Gg Ulu Kali, Ph; endemic.
- 50.1.2 **Ilex cymosa** Blume, **FMP1** 442, **TFM3** 3; tree; lowland forest including swamps and secondary forest; widespread.
- 50.1.3 **Ilex epiphytica** King, **FMP1** 439, **TFM3** 5; small tree or shrubby epiphyte; montane forest; widespread in the mountains; endemic.
- 50.1.4 **Ilex glomerata** King, **FMP1** 439, **TFM3** 5; shrub or small tree; montane forest; Tg, Pk.
- 50.1.5 **Ilex grandiflora** Ridl., **FMP1** 439, **TFM3** 5; shrub or small tree; high montane forest; Pk, Ph, Jh; endemic.
- 50.1.6 **Ilex illustris** Ridl., **FMP1** 439, **TFM3** 8; shrub or small tree; montane forest, occasionally in the lowlands; Tg, Pk, Ph; endemic.
- 50.1.7 **Ilex kelsallii** Ridl., **FMP5** 298, **TFM3** 2; small tree; montane forest; ?Pk, Ph.
- 50.1.8 **Ilex macrophylla** Hook.*f.*, **FMP1** 442, **TFM3** 8; *Ilex venulosa* var. *nervulosa* Loes., **FMP1** 442; smallish tree; lowland well-drained forest; widespread. S. Andrews informs me that *Ilex venulosa* var. *nervulosa* should probably be recognized as a distinct species.

- 50.1.9 **Ilex maingayi** Hook.f., **FMP1** 440, **TFM3** 8; small to medium-sized tree; swampy lowland rain forest, humose soils on limestone; south and west of Malaya; endemic.
- 50.1.10 **Ilex malaccensis** Loes., **FMP1** 437, **TFM3** 8; shrub, small tree or woody climber; lowland forest, more frequently in the mountains; widespread.
- 50.1.11 **Ilex micrococca** Maxim., **TFM3** 2; small spreading tree; montane forest; once at Fraser's Hill, Ph.
- 50.1.12 **Ilex myrtilis** Ridl., **FMP1** 438, **TFM3** 2; much-branched shrub; montane forest; Ph, Sl; endemic.
- 50.1.13 **Ilex patens** Ridl., **FMP1** 440, **TFM3** 3; small tree; montane forest; Kd, Ph, Sl; endemic.
- 50.1.14 **Ilex pauciflora** Ridl., **FMP1** 441, **TFM3** 3; small tree; only known from Penang Hill; endemic.
- 50.1.15 **Ilex polyneura** (Hand.-Mazz.) S.Y. Hu, **TFM3** 2; small spreading tree; montane forest; once from the Cameron Highlands, Ph.
- 50.1.16 **Ilex praetermissa** Kiew, **TFM3** 3; small shrub to 1.5 m tall; quartzite ridges; only known from Klang Gates, Sl; endemic.
- 50.1.17 **Ilex sclerophylla** Hook.f., **FMP1** 440, **TFM3** 2; small tree; montane forest; Ulu Brang, Tg, Gg Ledang, Jh; endemic.
- 50.1.18 **Ilex sclerophylloides** Loes., **FMP1** 440, **TFM3** 9; small tree; locally common in montane forest; Kd, Pk, Jh.
- 50.1.19 **Ilex tahanensis** Kiew, **TFM3** 3; *Ilex rupicola* (*non* H.B.K.) Ridl., **FMP1** 439; small shrub; Gg Rabong, Kl, and Gg Tahan, Ph; endemic.
- 50.1.20 **Ilex triflora** Blume, **FMP1** 438 incl. var. *longifolia* Ridl., **TFM3** 9; *Ilex polyphylla* Ridl., **FMP1** 438; straggling bush to 5 m tall; common in montane forest; widespread.

## 51. ARALIACEAE

- 51.1.1 **Aralia dasphylla** Miq., **TFM3** 16, **FMi9** 17; small prickly tree to 10 m tall; hill forest; Pn, Pk, Ph, Sl, NS.
- 51.1.2 **Aralia montana** Blume, **TFM3** 15, **FMi9** 22; *Aralia armata* (Wall.) Seem., **FMP1** 873; *Aralia thomsonii* Seem., **FMP1** 873; prickly shrub; lowland and montane forest; widespread.

- 51.1.3 ***Aralia scandens*** (Merr.) T.D. Ha. **TFM3** 15, **FMI9** 19; *Aralia ferox* auct. non Miq.; **FMP1** 873; scandent prickly shrub; lowland and montane forest, often near streams; PK, Ph, Sl.
- 51.2.1 ***Arthropphyllum alternifolium*** Maingay ex Ridl., **FMP1** 886. **TFM3** 17. **FMI9** 67; shrub to 2 m tall; montane forest above 900 m; Ph, Sl, Ml, Jh; endemic.
- 51.2.2 ***Arthropphyllum angustifolium*** Ridl., **FMP1** 885, **FMI9** 56; *Arthropphyllum montanum* Ridl. var. *angustifolium* (Ridl.) B.C. Stone, **TFM3** 17; shrub or small tree to 5 m tall; hill forest; Gg Keledang, Pk.
- 51.2.3 ***Arthropphyllum diversifolium*** Blume, **FMI9** 60. **TFM3** 17; *Arthropphyllum ovatifolium* Jungh. & de Vriese, **FMP1** 885; *Arthropphyllum congestum* Ridl., **FMP1** 887; sparsely-branched tree to 14 m tall; forest margins or secondary forest in lowlands and hills; abundant throughout.
- 51.2.4 ***Arthropphyllum maingayi*** Philipson, **TFM3** 17, **FMI9** 64; *Arthropphyllum pinnatum* auct. non (Lam.) C.B. Clarke, **FMP1** 886; shrub to 2 m tall; hill forest; Pn, Sl, NS, Jh.
- 51.2.5 ***Arthropphyllum montanum*** Ridl., **FMP1** 886. **TFM3** 17 incl. var. *ovatum* (Ridl.) B.C. Stone, **FMI9** 65; *Arthropphyllum nitidum* Ridl., **FMP1** 886; *Arthropphyllum ovatum* Ridl., **FMP1** 886; small tree to 8 m tall; hill forest at 250-1500 m; Kd, Kl, Tg, Pk, Ph, Sl; endemic.
- 51.2.6 ***Arthropphyllum stonei*** A.-L. Lim, **L21** 263; tree to 7 m tall; montane forest; Ph, Sl; endemic.
- 51.3.1 ***Brassaiopsis elegans*** Ridl., **FMP1** 888, **TFM3** 19, **FMI9** 95; slender erect shrub to 2 m tall; lower montane forest at 800 m; Ph, Sl; endemic.
- 51.3.2 ***Brassaiopsis glomerulata*** (Blume) Regel, **TFM3** 19, **FMI9** 94; tree to 10 m tall; montane forest; Ph, NS.
- 51.3.3 ***Brassaiopsis minor*** B.C. Stone, **TFM3** 19, **FMI9** 93; shrub; lowland and lower montane forest to 1100 m; collected twice in Tg; endemic.
- 51.3.4 ***Brassaiopsis polyacantha*** (Wall.) R.N. Banerjee, **TFM3** 20, **FMI9** 93; *Brassaiopsis palmata* Kurz, **FMP1** 887; thorny sparsely-branched tree to 13 m tall; hill and lower montane forest above 500 m; Kd, Pk, Ph, Sl.
- 51.3.5 ***Brassaiopsis simplex*** (King) B.C. Stone, **TFM3** 20, **FMI9** 93; *Wardenia simplex* King, **FMP1** 887; prickly shrub to 5 m tall; open bamboo forest in lowlands and hills to 800 m; known from three collections. Pk, Sl; endemic.
- 51.4.1 ***Dendropanax lancifolius*** (Ridl.) Ridl., **FMP1** 884, **TFM3** 22, **FMI9** 101; tree to 14 m tall; hill forest 300-1500 m; Ulu Batang Padang and Gg Kledang Saiong, Pk.

- 51.4.2 **Dendropanax maingayi** King, **FMP1** 884, **TFM3** 22, **FM19** 101; slender shrub to 1.5 m tall; montane forest on exposed ridges and summits; Kd, Pk, Ph, Ml, Jh; endemic.
- 51.5.1 **Eleutherococcus malayanus** (M.R. Hend.) B.C. Stone, **S49** 395, **FM19** 554; *Acanthopanax malayanus* M.R. Hend., **TFM3** 14, **FM19** 103; tree to 17 m tall; montane forest at 1300–1800 m; Kl, Ph.
- 51.6.1 **Gastonia serratifolia** (Miq.) Philipson, **FM19** 68; *Gastonia papuana* Miq., **TFM3** 23; tree to 20 m tall; only known from P. Pisang, Jh.
- 51.7.1 **Macropanax dispermus** (Blume) Kuntze, **FM19** 86; tree to 18 m tall; montane forest.
- 51.7.2 **Macropanax maingayi** (C.B. Clarke) Philipson, **FM19** 87; *Hederopsis maingayi* C.B. Clarke, **FMP1** 888, **TFM3** 23; *Hederopsis major* Ridl., **TFM3** 24; tree to 15 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl, Ml.
- 51.8.1 **Schefflera actinophylla** (Endl.) Harms, **TFM3** 31; *Brassaia singaporensis* Ridl., **FMP1** 883; shrub or tree, terrestrial or epiphytic; lowland forest; Sp; probably introduced.
- 51.8.2 **Schefflera aff. beccariana** rom., **TFM3** 31; epiphytic shrub; lowland swamp forest; Jh; endemic.
- 51.8.3 **Schefflera biternata** (C.B. Clarke) Harms, **FMP1** 881, **TFM3** 28; scrambling shrub; hill forest; Pn, Pk, ?Ml; endemic.
- 51.8.4 **Schefflera cephalotes** (C.B. Clarke) Harms, **FMP1** 875, **TFM3** 31; *Schefflera capitellata* Ridl., **FMP1** 876; shrub, usually epiphytic; hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Sp; endemic.
- 51.8.5 **Schefflera elliptica** (Blume) Harms, **TFM3** 29; *Schefflera venulosa auct. non* (Wight & Arn.) Harms, **FMP1** 880 in part, incl. var. *curtisii* Ridl.; *Schefflera micrantha* [non (C.B. Clarke) Gamble] (Miq.) Ridl., **FMP1** 881; *Schefflera 'calcicola'* Frodin *ined.*, **TFM3** 31; climber or straggling shrub, often epiphytic; lowland and hill forest, also mangroves and on limestone; Ps, Kd, Kl, Tg, Pn, Pk, Sl, Ml, Jh, Sp.
- 51.8.6 **Schefflera hullettii** (King) R. Vig., **FMP1** 877, **TFM3** 32; *Schefflera scortechinii* (King) R. Vig., **FMP1** 876; *Schefflera elegans* (Ridl.) Ridl., **FMP1** 878; epiphytic shrub or climber; lowland and hill forest; Kd, Kl, Pn, Ph, Jh, Sp.
- 51.8.7 **Schefflera heterophylla** (Wall. ex G. Don) Harms, **FMP1** 881, **TFM3** 28; *Schefflera curtisii* (King) Ridl., **FMP1** 882; scrambling shrub; lowland forest, including that on limestone; Kd, Tg, Pn, Pk, Ph, Sl, Jh; endemic.
- 51.8.8 **Schefflera lanceolata** Ridl., **TFM3** 28, **FMP3** 875; climber; rocks near the sea, mangrove; Tg, Ph, Sp; endemic.

- 51.8.9            **Schefflera latifoliolata** (King) R. Vig., **FMP1** 877 '*latifoliata*', **TFM3** 32; *Schefflera pergamacea* [non (Blume) R. Vig.] (Hassk.) Ridl., **FMP1** 876; shrub, terrestrial or epiphytic; montane forest; Pk, Ph; endemic.
- 51.8.10          **Schefflera 'longicaudata'** Frodin *ined.*, **TFM3** 30; *Schefflera scandens* [non (Blume) R. Vig.] (Seem.) Ridl., **FMP1** 878; slender creeper to 2 m long; lowland and hill forest; Pk, Sl; endemic.
- 51.8.11          **Schefflera lurida** (King) Ridl., **FMP1** 875, **TFM3** 28; slender epiphytic creeper or shrub; lower montane forest; Pk, Ph; endemic.
- 51.8.12          **Schefflera 'nanocephala'** Frodin *ined.*, **TFM3** 31; terrestrial or epiphytic tree to 6 m tall; montane forest; Pk, Ph, Sl; endemic.
- 51.8.13          **Schefflera nervosa** (King) R. Vig., **FMP1** 879, **TFM3** 29; shrub or small tree; montane forest; Tg, Pk, Ph; endemic.
- 51.8.14          **Schefflera oxyphylla** (Miq.) R. Vig., D. G. Frodin *pers. comm.*; *Schefflera subulata* (Miq.) R. Vig., **FMP1** 878, **TFM3** 30; *Schefflera klossii* Ridl., **FMP1** 876; *Schefflera subracemosa* Ridl., **FMP1** 878; epiphytic climber; lowland and hill forest; Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.
- 51.8.15a         **Schefflera ridleyi** (King) R. Vig. var. **polyandra** (Ridl.) Frodin, **TFM3** 29; *Scheffleropsis polyandra* (Ridl.) Ridl., **FMP1** 879; epiphytic shrub; montane forest; Pk; endemic.
- 51.8.15b         **Schefflera ridleyi** (King) R. Vig. var. **ridleyi**, **FMP1** 879, **TFM3** 29, *Schefflera musangensis* M.R. Hend., **H33** 105; epiphytic shrub, occasionally epilithic; lowland and hill forest, also in mangroves; Kl, Tg, Pk, Ph, Ml, Jh, Sp; endemic.
- 51.8.16          **Schefflera roxburghii** Gamble, **FMP1** 880, **TFM3** 30; *Schefflera venulosa auct. non* (Wight & Arn.) Harms, **FMP1** 880 in part; scandent shrub; Pn, ?Ml; dubiously native.
- 51.8.17          **Schefflera simulans** Craib, **TFM3** 28; *Schefflera affinis* [non Baill.] (King) R. Vig., **FMP1** 879; terrestrial or epiphytic shrub to 3 m tall; montane forest; Pk.
- 51.8.18          **Schefflera singalensis** (Miq.) R. Vig., **FMP1** 877 '*singalagensis*', **TFM3** 30; epiphytic shrub or liana; lowland and hill forest; Pk, Ph.
- 51.8.19          **Schefflera singularis** B.C. Stone, **TFM3** 28; shrub or climber; montane forest; known only from Gg Ulu Kali, Ph; endemic.
- 51.8.20          **Schefflera subintegra** Craib, D. G. Frodin *pers. comm.*; *Tupidanthus calypratus auct. non* Hook.f. & Thomson, **FMP1** 889; *Schefflera pueckleri auct. non* (K. Koch) Frodin, **TFM3** 31 (Malayan specimens); small tree or woody climber; montane forest; Pk, Ph.

- 51.8.21 **Schefflera tomentosa** (Blume) Harms, **FMP1** 877; *Schefflera farinosa* [non (Teijsm. & Binn.) P.M.W. Dakkus] (Blume) Merr., **TFM3** 29; shrub or climber, terrestrial or epiphytic; lowland forest, including swamps and on limestone; Pk, Ph, Sl, Jh; endemic.
- 51.8.22 **Schefflera tristis** (King) Ridl., **FMP1** 875, **TFM3** 29; terrestrial or epiphytic shrub to 3 m tall; montane forest; Tg, Pk, Ph; endemic.
- 51.8.23 **Schefflera wrayi** (King) R. Vig., **FMP1** 882, **TFM3** 30; small tree; upper montane forest at 2100 m; Pk, Ph; endemic.
- 51.8.24 **Schefflera yatesii** Merr., **TFM3** 32; scandent shrub; lowland forest; Kl, Tg. D. G. Frodin informs me that there are more *Schefflera* species awaiting description in Malaya.
- 51.9.1 **Trevesia burckii** Boerl., **TFM3** 33, **FMi9** 97; *Trevesia cheirantha* (C.B. Clarke) Kuntze, **FMP1** 882; prickly shrub or small tree to 10 m tall; lowland forest; Kd, Tg, Pn, Pk, Ph, Sl, Ns, Ml, Jh, Sp.
- 51.9.2 **Trevesia rufosetosa** Ridl., **FMP1** 883, **TFM3** 33, **FMi9** 97; prickly-stemmed shrub; montane forest; Fraser's Hill, Ph, Semangkok Pass, Sl; endemic. This species should be in *Brassaiopsis* (M. Jebb *pers. comm.*).

## 52. ARALIDIACEAE

- 52.1.1 **Aralidium pinnatifidum** (Jungh. & de Vriese) Miq., **FMP1** 895, **TFM3** 34, **FMi9** 16; shrub or small tree to 10 m tall; lowland and hill forest to 1250 m; throughout.

## 53. ARISTOLOCHIACEAE

- 53.1.1 **Aristolochia curtisii** King, **FMP3** 18, **FMi10** 89; slender climber to 5 m high; lowland forest; Pn.
- 53.1.2 **Aristolochia foveolata** Merr., **FMi10** 91; twining climber to 10 m tall; lowland forest; Tg.
- 53.1.3 **Aristolochia jackii** Steud., **FMi10** 88; *Aristolochia unguifolia* Mast., **FMP3** 18; shrub or twining climber; lowland forest; Ph, P. Jarak, Sp.
- 53.1.4 **Aristolochia minutiflora** Ridl. *ex* Gamble, **FMP3** 18 incl. var. *dolabrata* Gamble, **FMi10** 93; scandent shrub or climber reaching 10 m; lowland and hill forest; Pk, Jh.
- 53.1.5 **Aristolochia tagala** Cham., **FMP3** 18, **FMi10** 94; twining climber reaching 20 m tall; lowland forest; widespread.



- 53.2.1 **Thottea corymbosa** (Griff.) Ding Hou, **FM10** 78; *Apama corymbosa* (Griff.) Willd. ex Soler., **FMP3** 15; shrub to 5 m tall; lowland and hill forest; widespread.
- 53.2.2 **Thottea dependens** (Planch.) Klotzsch, **FMP3** 16, **FM10** 75; shrub to 2.5 m tall; lowland forest to 500 m; Pn, Tg, Pk, Ph, Sl, Sp; endemic.
- 53.2.3 **Thottea grandiflora** Rottb., **FMP3** 16, **FM10** 69; shrub to 2 m tall; lowland and hill forest to 600 m; Tg, Pk, Ph, NS, Ml, Jh, Sp.
- 53.2.4 **Thottea parviflora** Ridl., **FMP3** 17, **FM10** 67; shrub to 2 m tall; lowland forest; P. Langkawi, Kd, Kl, Pk, Ph, Sl.
- 53.2.5 **Thottea sumatrana** (Merr.) Ding Hou, **FM10** 81; undershrub to 1 m tall; lowland forest; Pd, Kd.
- 53.2.6 **Thottea tomentosa** (Blume) Ding Hou, **FM10** 79; *Apama tomentosa* (Blume) Engl. ex Soler., **FMP3** 15; creeping undershrub to 40 cm tall; lowland forest; widespread.
- 53.2.7 **Thottea tricornis** Maingay ex Hook.f., **FMP3** 16, **FM10** 74; shrub to 2 m tall; hill forest at 300–600 m; Pk, Ph, Sl, Ml.

#### 54. ASCLEPIADACEAE

- 54.1.1 **Asclepias curassavica** L., **FMP2** 379, **B03** 251, **H55** 74; herb to 1 m tall; open sandy spots; widespread; naturalized from tropical America.
- 54.2.1 **Atherandra acutifolia** Decne., **FMP2** 374, **B03** 249; slender twining vine; thickets; P. Langkawi, Pn.
- 54.3.1 **Calotropis gigantea** (L.) W.T. Aiton, **FMP2** 379, **R01** 306; shrub to 2 m tall; weed of dry open places, often cultivated; widespread, possibly not native.
- 54.4.1 **Ceropegia langkawiensis** Rintz, **R22** 225; twining vine to 6 m in length; sandy shore near limestone outcrop; P. Langkawi; endemic.
- 54.4.2 **Ceropegia lucida** Wall., **FMP2** 412; slender climber; hill forest; Pn.
- 54.5.1 **Cryptolepis perakensis** (King & Gamble) P.I. Forst., **F09** 70; *Phyllanthera perakensis* King & Gamble, **FMP2** 371; woody climber to 5 m long; lowland forest; Pk.
- 54.6.1 **Cynanchum carnosum** (R. Br.) Schltr., **F07** 526; *Ischnostemma selangoricum* King & Gamble, **FMP2** 380, *Ischnostemma carnosum* (R. Br.) Merr. & Rolfe; **K15** 17; slender twiner; open country; Sl.  
Liede [**L20**] considers this species better placed in *Pentatropis*.

- 54.6.2 **Cynanchum corymbosum** Wight, **FMP2** 381; slender twiner; lowland forest; Pk, Pn.
- 54.6.3 **Cynanchum ovalifolium** Wight, **FMP2** 381 incl. var. *angustifolium* Ridl., **B03** 253; *Cynanchum laeve* [non Pers.] (Blume) K. Schum., **K15** 253; slender vine; forest margins; widespread.
- 54.6.4 **Cynanchum seimundii** Ridl., **FMP2** 381; vine; Kuala Tahan, Ph; endemic.
- 54.7.1a **Dischidia acutifolia** Maingay. ex Hook.f. ssp. **acutifolia**, **FMP2** 408, **R24** 101; twining epiphyte; lowland forest understorey; widespread.
- 54.7.1b **Dischidia acutifolia** Maing. ex Hook.f. ssp. **klossii** (Kerr) Rintz, **R24** 101; twining epiphyte; lowland forest; Sl.
- 54.7.2 **Dischidia albida** Griff., **FMP2** 407, **R24** 100; *Dischidia fultonii* M.R. Hend., **H31** 51; slender twining epiphyte; commonest in the mountains, sometimes lower; widespread.
- 54.7.3 **Dischidia albiflora** Griff., **R22** 94; *Dischidia collyris* Wall., **FMP2** 404; creeping epiphyte, leaves convex; on trees near the sea; scattered.
- 54.7.4 **Dischidia astephana** Scort. ex King & Gamble, **FMP2** 403, **R24** 91; slender creeping epiphyte, leaves convex; montane forest to highest peaks; widespread.
- 54.7.5 **Dischidia bengalensis** Colebr., **FMP2** 405, **R24** 97; long creeping epiphyte; coasts to mountains at 1700 m; widespread.
- 54.7.6 **Dischidia cochleata** Blume, **R24** 90; *Dischidia coccinea* Griff., **FMP2** 404; creeping epiphyte, leaves convex; lowland and hill forest; Ph, Sl, Ml, Sp.
- 54.7.7 **Dischidia complex** Griff., **FMP2** 405, **R24** 97; slender creeping epiphyte, some leaves pitcher-like; lowland forest; southern Malaya.
- 54.7.8 **Dischidia dolichantha** Schltr., **R24** 100; *Dischidia tubuliflora* King & Gamble, **FMP2** 409; wiry twining epiphyte; montane forest; Pk, Ph.
- 54.7.9 **Dischidia fruticulosa** Ridl., **FMP2** 408, **R24** 101; shrubby epiphyte; hill forest; Pk, Ph; endemic.
- 54.7.10 **Dischidia hirsuta** (Blume) Decne., **FMP2** 406, **R24** 94; hairy twining epiphyte; lowland and hill forest, also on limestone; widespread.
- 54.7.11 **Dischidia imbricata** (Blume) Steud., **R24** 91; *Dischidia depressa* C.B. Clarke ex King & Gamble, **FMP2** 404; slender twining epiphyte, leaves convex; lowland forest; Ps, Ml.
- 54.7.12 **Dischidia longepedunculata** Ridl., **FMP2** 404, **R24** 97; creeping epiphyte, leaves convex; montane forest; Sl, Ph; endemic.

- 54.7.13 **Dischidia major** (Vahl) Merr., **R24** 92; *Dischidia rafflesiana* Wall., **FMP2** 405; creeping epiphyte, some leaves pitcher-like; lowland and hill forest, common near the sea; widespread.
- 54.7.14 **Dischidia nummularia** R.Br., **R24** 98; *Dischidia gaudichaudii* Decne., **FMP2** 406; creeping epiphyte; on trees in the open; common throughout.
- 54.7.15 **Dischidia parvifolia** Ridl., **FMP2** 410, **R24** 95; slender twining epiphyte; montane forest; Ph, Sl; endemic.
- 54.7.16 **Dischidia pubescens** Ridl., **FMP2** 409, **R24** 102; creeping epiphyte; lowland forest; once from Pk, dubious species.
- 54.7.17 **Dischidia punctata** (Blume) Decne., **R24** 93; *Dischidia viridiflora* Ridl., **FMP2** 410; long twining epiphyte; lowland and hill forest; Kl, Sl.
- 54.7.18 **Dischidia rhodantha** Ridl., **FMP2** 407, **R24** 93; slender twining epiphyte; montane forest; Ph; endemic.
- 54.7.19 **Dischidia scortechinii** King & Gamble, **FMP2** 409, **R24** 99; slender twining epiphyte; understorey of montane forest; Pk; endemic.
- 54.7.20 **Dischidia singaporensis** Ridl., **FMP2** 407, **R24** 92; slender creeping epiphyte; on trees; once from Changi, Sp (probably extinct); endemic.
- 54.7.21a **Dischidia subulata** Warb. ssp. **angustata** Rintz, **R24** 96; twining epiphyte; montane forest; once from near Tanah Rata, Ph; endemic subspecies.
- 54.7.21b **Dischidia subulata** Warb. ssp. **subulata**, **R24** 96; *Dischidia cordifolia* King & Gamble, **FMP2** 407; *Dischidia ericiflora* Ridl., **FMP2** 408; *Dischidia monticola* King & Gamble, **FMP2** 408; twining epiphyte; montane forest; Ph.
- 54.7.22 **Dischidia superba** Rintz, **R22** 229, **R24** 102; creeping epiphyte; lowland and hill forest; Kl, Ph, Sl; endemic.
- 54.7.23 **Dischidia tomentella** Ridl., **FMP2** 409, **C14** 92, **R24** 99; long slender climbing epiphyte; forest on limestone; Ps.
- 54.7.24 **Dischidia vadosa** Rintz, **R22** 229, **R24** 95; creeping epiphyte; montane forest: Fraser's Hill and Cameron Highlands, Ph; endemic.
- 54.8.1 **Dregea stellaris** (Ridl.) Ridl., **FMP2** 387; climber; mountains; Fraser's Hill, Ph, & Gg Mengkuang Lebah, Sl; endemic.
- 54.9.1 **Finlaysonia obovata** Wall., **FMP2** 373; climber; tidal river banks; widespread.
- 54.10.1 **Genianthus crassifolius** (Wight) Hook.f., **K53** 453; *Genianthus blumei* (Decne.) Boerl., **FMP2** 378; stout climber; lowlands; Pk, Sl.

- 54.10.2      **Genianthus maingayi** Hook.f., **FMP2** 378, **K53** 452; slender twining climber; lowland forest; Pk, Jh, ?Sp.
- 54.10.3      **Genianthus ridleyi** King & Gamble, **FMP2** 378, **K53** 463; twiner; montane forest at 1000–1400 m; Taiping Hills, Pk; endemic.
- 54.10.4      **Genianthus rufovelutinus** King & Gamble, **FMP2** 378, **K53** 458; *Hoya rufolanata* Ridl., **FMP2** 402; stout climber; lowland forest; Pk, P. Tioman, Jh; endemic.
- 54.10.5      **Genianthus subpeltatus** Klack., **K53** 464; suffrutescent twiner; mossy ridge at 1300 m; only known from type, Fraser's Hill, Ph; endemic.
- 54.11.1      **Gongronema bracteolatum** King & Gamble, **FMP2** 386; stout woody climber; Gopeng, Pk; endemic.
- 54.11.2      **Gongronema curtisii** King & Gamble, **FMP2** 386; slender twiner; montane forest; Pn, Pk; endemic.
- 54.11.3      **Gongronema wallichii** Decne., **FMP2** 386; shrubby climber; Pn, NS, MI.
- 54.11.4      **Gongronema wrayi** King & Gamble, **FMP2** 387; slender twiner; Pk; endemic.
- 54.12.1      **Gongylosperma lanuginosum** Ridl., **FMP2** 372, **C14** 93; small shrub; on limestone; P. Langkawi.
- 54.13.1      **Goniostemma acuminatum** Wight, **FMP2** 377; slender climber; lowland forest; Pn, Pk.
- 54.14.1      **Hemidesmus indicus** (L.) W.T. Aiton, **FMP2** 372; slender twiner; lowland forest; Pk.
- 54.15.1      **Heterostemma fimbriatum** King & Gamble, **FMP2** 393; twiner; Gg Hijau, Pk; endemic.
- 54.15.2      **Heterostemma piperifolium** King & Gamble, **FMP2** 393, **C14** 93; slender twiner; open forest, often on limestone; north of Malaya.
- 54.16.1      **Hoya campanulata** Blume, **R21** 495; *Physostelma wallichii* Wight, **FMP2** 411; slender twiner or creeper; lowland and hill forest, often on riverside rocks; widespread.
- 54.16.2      **Hoya caudata** Hook.f., **FMP2** 395 incl. var. *crassifolia* Ridl., **R21** 484; climbing epiphyte; lowland forest, common on limestone; mostly in the north.
- 54.16.3      **Hoya coriacea** Blume, **FMP2** 397, **R21** 495; *Hoya oclusa* Ridl., **FMP2** 398; stout twining epiphyte; forests from mangroves to hill tops, including limestone; widespread.

- 54.16.4 **Hoya coronaria** Blume, **FMP2** 400, **R21** 505; hairy twining epiphyte; mangroves, lowland forest incl. quartzite and limestone ridges; widespread.
- 54.16.5 **Hoya curtisii** King & Gamble, **FMP2** 399, **R21** 505; slender, fleshy creeping epiphyte; hill forest at 700 m; once from near Taiping, Pk; endemic.
- 54.16.6 **Hoya diversifolia** Blume, **FMP2** 396, **R21** 517; twining epiphyte; lowland forest and limestone hills; widespread.
- 54.16.7 **Hoya elliptica** Hook.f., **FMP2** 399, **R21** 505; slender twining epiphyte; often along rivers; Pk, Sl, Ml, Sp; endemic.
- 54.16.8 **Hoya endauensis** Kiew, **K32** 261; epiphytic climber; on riverside tree; Ulu Endau, Jh; endemic.
- 54.16.9 **Hoya erythrina** Rintz, **R21** 501; twining epiphyte; hill forest at 400–700 m; Kl, Ph, Sl; endemic.
- 54.16.10 **Hoya erythrostemma** Kerr, **R21** 508; twining epiphyte; on riverside tree; Sl, ?elsewhere.
- 54.16.11 **Hoya finlaysonii** Wight, **FMP2** 397, **R21** 511; twining epiphyte; along rivers in lowland forest; Pk, Ph, Sl.
- 54.16.12 **Hoya forbesii** King & Gamble, **FMP2** 397, **R21** 517; twining epiphyte; lowland forest including that on limestone; throughout.
- 54.16.13 **Hoya imperialis** Lindl., **FMP2** 399, **R21** 501; shrubby climber; mangrove and lowland forest; Pk, Sl, Ml, Jh.
- 54.16.14 **Hoya lacunosa** Blume, **FMP2** 395, **R21** 490; slender creeping epiphyte; lowland and hill forest; widespread.
- 54.16.15 **Hoya lasiantha** Korth. ex Miq., **FMP2** 398, **R21** 498; climbing epiphyte; lowland and hill forest; Pk, Sl.
- 54.16.16 **Hoya latifolia** G. Don, **FMP2** 395, **R21** 508; long climbing and creeping epiphyte; lowland forest; Ph, Jh, Sp.
- 54.16.17 **Hoya micrantha** Hook.f., **R21** 486; *Hoya plicata* King & Gamble, **FMP2** 402; stout twining epiphyte; montane forest at 800–1000 m; Pk, Ph.
- 54.16.18 **Hoya mitrata** Kerr, **R21** 498; twining epiphyte; lowland and hill forest; Pk, Ph, Sl, Jh.
- 54.16.19 **Hoya multiflora** Blume, **FMP2** 398, **R21** 492; shrubby epiphyte; mostly in hill forest at 500–900 m; widespread.
- 54.16.20 **Hoya obtusifolia** Wight, **FMP2** 399, **R21** 520; stout-stemmed twining epiphyte; mangroves; Pk and Ph to Sp.

- 54.16.21 **Hoya parviflora** Wight, **FMP2** 401, **R21** 486; wiry twiner; lowland forest; widespread.
- 54.16.22 **Hoya pusilla** Rintz, **R21** 492; slender twining epiphyte; lowland forest on river banks; Sg Tahan, Ph; endemic.
- 54.16.23 **Hoya revoluta** Wight, **FMP2** 401, **R21** 486; slender twiner; beaches to hill tops; widespread.
- 54.16.24 **Hoya scortechinii** King & Gamble, **FMP2** 400, **R21** 511; twining climbing epiphyte; lowland forest; Pk, Ph, Jh; endemic.
- 54.16.25a **Hoya verticillata** (Vahl) G. Don var. **citrina** (Ridl.) Veldkamp *ined.*; *Hoya citrina* Ridl., **FMP2** 397, **C14** 93, **K50** 33; *Hoya parasitica* Wall. *ex* Wight var. *citrina* (Ridl.) Rintz, **R21** 514; twining epiphyte; along lowland rivers and on limestone hills; Pk, Ph, Sl; endemic.
- 54.16.25b **Hoya verticillata** (Vahl) G. Don var. **hendersonii** (Kiew) Veldkamp *ined.*; *Hoya parasitica* Wall. *ex* Wight var. *hendersonii* Kiew, **K45** 66; glabrous twiner; lower montane forest at 1200–1260 m; Cameron Highlands & Fraser's Hill, Pk; endemic variety.
- 54.16.25c **Hoya verticillata** (Vahl) G. Don var. **verticillata**, **V35** 427; *Hoya parasitica* Wall. *ex* Wight, **FMP2** 396, **R21** 514; *Hoya ridleyi* King & Gamble, **FMP2** 401; climbing twining epiphyte; often near the sea; all coasts.
- 54.16.26 **Hoya wrayi** King & Gamble, **R21** 484; *Physostelma wrayi* (King & Gamble) Ridl., **FMP2** 411; twining epiphyte; montane forest at 1000–1500 m; Gg Batang Padang, Pk, and Fraser's Hill, Ph; endemic.
- 54.17.1 **Lygisma flavum** (Ridl.) Kerr, **K15** 30; *Gymnema flavum* Ridl., **FMP2** 385; *Tylophora ridleyi* M.R. Hend., **H35** 111; slender twiner; river bank; Temengoh, Pk.
- 54.18.1 **Marsdenia acuminata** (Roxb.) I.M. Turner, **T21** 23; *Gymnema acuminatum* (Roxb.) Wall., **FMP2** 384; twining shrub; open country; P. Langkawi, Ml.
- 54.18.2 **Marsdenia dissitiflora** (Ridl.) P.I. Forst., **F11** 693; *Gymnema dissitiflorum* Ridl., **FMP2** 384; slender twiner; lowland forest; only known from type, Tapah, Pk; endemic.
- 54.18.3 **Marsdenia forsteri** I.M. Turner, **T21** 25; *Gymnema maingayi* Hook.f., **FMP2** 384; slender twiner; Ml.
- 54.18.4 **Marsdenia hirta** (Ridl.) P.I. Forst., **F11** 693, *Gymnema hirtum* Ridl., **FMP2** 385; slender climber; montane forest; only known from type, Semangkok Pass, Sl; endemic.
- 54.18.5 **Marsdenia lactifera** (L.) I.M. Turner, **T21** 25; *Gymnema lactiferum* (L.) R. Br. *ex* Schult., **FMP2** 385, **H55** 98; slender twiner; Pn, Pk, Ml.

- 54.18.6 **Marsdenia maingayi** (Hook.f.) P.I. Forst, **F11** 700; *Stephanotis maingayi* Hook.f., **FMP2** 389; large climbing shrub; forest margin; Ph, Ml, Jh, Sp; ?endemic.
- 54.18.7 **Marsdenia ridleyi** P.I. Forst., **F11** 700; *Stephanotis parviflora* Ridl., **FMP2** 390; creeper; forest margins; Pk; endemic.
- 54.18.8 **Marsdenia scortechinii** King & Gamble, **FMP2** 388; twiner; Pk; ?endemic.
- 54.18.9 **Marsdenia thysiflora** Hook.f., **FMP2** 388; climber; river banks in lowland forest; Ph.
- 54.18.10 **Marsdenia tinctoria** R.Br., **FMP2** 388, **B03** 272; small shrub; open places, often on limestone, possibly relic of cultivation; mostly in the north.
- 54.18.11 **Marsdenia tingens** (Roxb.) P.I. Forst., **F11** 692; *Gymnema tingens* (Roxb.) Roxb., **FMP2** 385; slender climbing shrub; Pk.
- 54.19.1 **Meladerma insularum** (King & Gamble) Kerr, **K15** 5; *Gymnanthera insularum* King & Gamble, **FMP2** 373, **C14** 93; liana; on limestone; P. Langkawi.
- 54.20.1 **Pentanura sumatrana** Blume, **FMP2** 371; climber; Pk.
- 54.22.1 **Pentasacme caudatum** Wall. ex Wight, **FMP2** 383, **R02** 115; wiry-stemmed rheophytic herb; on rocks in forest streams; Pk, Ph.
- 54.22.1 **Pycnorhachis maingayi** Hook.f., **FMP2** 411; hairy twiner; once from Ml, endemic.
- 54.23.1 **Raphistemma pulchellum** (Roxb.) Wall., **FMP2** 380, **B03** 252; bushy climber; lowlands; P. Langkawi, Pk, NS.
- 54.24.1 **Sarcolobus globosus** Wall., **FMP2** 382, **R23** 73; twiner; tidal mud; Kl, Pk, Ph, Ml, Jh, Sp.
- 54.25.1 **Sarcostemma brunonianum** Wight & Arn., **S48** 262, **H55** 82; twining climber; on limestone; P. Langkawi.
- 54.26.1 **Secamone elliptica** R.Br., **F12** 70; *Secamone micrantha* (Decne.) Decne., **FMP2** 375; slender liana; open places near the sea; widespread.
- 54.27.1 **Streptocaulon juvenas** (Lour.) Merr., **K15** 6; *Streptocaulon griffithii* Hook.f., **FMP2** 374; liana; once, somewhat dubiously, from Jh.
- 54.27.2 **Streptocaulon wallichii** Wight, **FMP2** 374; woody climber; open places and forest margins; Ps, P. Langkawi, Pn, Pk.
- 54.28.1 **Telosma puberula** (Miq.) Kerr, **K15** 32; *Pergularia puberula* Miq., **FMP2** 389; twining shrub; hill forest; Pn.

- 54.29.1 **Toxocarpus curtisii** King & Gamble, **FMP2** 376; slender climber; hills to 1000 m, lower on limestone; scattered.
- 54.29.2 **Toxocarpus glabrescens** M.R. Hend., **H35** 109; slender climbing shrub; on hilltops; once from Ulu Endau, Jh; endemic.
- 54.29.3 **Toxocarpus griffithii** Decne., **FMP2** 376, **B03** 255; slender climber; lowland forest; widespread.
- 54.29.4 **Toxocarpus lankawiensis** King & Gamble, **FMP2** 377; slender twiner; P. Langkawi.
- 54.29.5 **Toxocarpus pauciflorus** M.R. Hend., **H35** 110, **C14** 94; climber; on limestone; Kl, Pk, Sl.
- 54.29.6 **Toxocarpus penangianus** King & Gamble, **FMP2** 376; slender twiner; Pn; endemic.
- 54.29.7 **Toxocarpus scortechinii** King & Gamble, **FMP2** 376; climber; mountains; Pk.
- 54.30.1 **Tylophora calcicola** M.R. Hend., **H35** 111, **C14** 94; slender twiner; on limestone; once each from Gua Ninek, Kl, and Bt Cheras, Ph; endemic.
- 54.30.2 **Tylophora exilis** Colebr., **FMP2** 392; slender twiner; scattered.
- 54.30.3 **Tylophora flexuosa** R. Br., **F10** 491; *Tylophora tenuis* Blume, **FMP2** 391; *Tylophora tenuissima* (Roxb. ex Schult.) Wight & Arn., **H55** 96; *Tylophora tetrapetala* (Dennst.) Suresh, **N11** 64; slender twiner; common along tidal rivers; widespread.
- 54.30.4 **Tylophora globifera** Hook.f., **FMP2** 392; twiner; Pk, Ml.
- 54.30.5 **Tylophora hirsuta** (Wall.) Wight, **FMP2** 391; twiner; open places; Pn, Pk.
- 54.30.6 **Tylophora indica** (Burm.f.) Merr., **H55** 91, **N11** 64; *Tylophora asthmatica* (L.f.) Wight & Arn., **FMP2** 392; slender twiner; sandy places near the sea or rivers; widespread.
- 54.30.7 **Tylophora longifolia** Wight, **FMP2** 390; slender twiner; montane forest; Pk.
- 54.30.8 **Tylophora perakensis** King & Gamble, **FMP2** 392, **C14** 94; fleshy climber; often on limestone; Kd, Pk.
- 54.30.9 **Tylophora splendida** P.I. Forst., **F08** 750; *Tylophora grandiflora* (non R. Br.) Ridl., **FMP5** 321; slender climber; hill forest; Ph; endemic.
- 54.30.10 **Tylophora squarrosa** Ridl., **FMP2** 392; *Tylophora wallichii* Hook.f., **FMP2** 391; slender twiner; lowland forest and mangroves; scattered.



55. AVICENNIACEAE
- 55.1.1 **Avicennia alba** Blume, **FMP2** 641, **TFM3** 299, **D43** 307; tree to 21 m tall; muddy mangroves; widespread.
- 55.1.2 **Avicennia marina** (Forssk.) Vierh., **TFM3** 300, **D43** 311; *Avicennia intermedia* Griff., **FMP2** 641; *Avicennia sphaerocarpa* Stapf ex Ridl., **FMP2** 642; tree to 12 m tall; mangrove; commoner on West Coast.
- 55.1.3 **Avicennia officinalis** L., **FMP2** 640, **TFM3** 300, **D43** 319; tree to 18 m tall; mangrove, generally on landward fringe; widespread.
- 55.1.4 **Avicennia rumphiana** Hallier f., **D43** 321; *Avicennia lanata* Ridl., **FMP2** 641, **TFM3** 300; tree to 30 m tall; sandier mangroves; mostly East Coast.
56. BALANOPHORACEAE
- 56.1.1 **Balanophora abbreviata** Blume, **FM17** 801, **K23** 544; *Balanophora insularis* Ridl., **FMP3** 175; white or yellow parasitic herb to 10 cm tall; lowland forest to 1000 m; Lenggong, Pk, and P. Aur, Ph.
- 56.1.2 **Balanophora elongata** Blume, **S47** 130, **FM19** 554; *Balanophora hansenii* Hambali, **H03** 425; tuberous parasitic herb; montane forest at 1500 m; Gg Ulu Kali, Ph.
- 56.1.3 **Balanophora fungosa** J.R. Forst. & G. Forst. ssp. **indica** (Arn.) B. Hansen, **FM17** 795, **K23** 544; *Balanophora gigantea* auct. non Wall. ex Fawc., **FMP3** 174; *Balanophora globosa* auct. non Jungh., **FMP3** 174; tuberous orange-yellow parasitic herb to 20 cm tall; montane forest at 500–2000 m; widespread.
- 56.1.4 **Balanophora latisepala** (Tiegh.) Lecomte, **FM17** 803, **K23** 545; *Balanophora truncata* Ridl., **FMP3** 174; tuberous yellowish parasitic herb to 25 cm tall; montane rain forest at 1200–1700 m; Ph, Sl.
- 56.1.5 **Balanophora papuana** Schltr., **FM17** 798, **K23** 547; *Balanophora multibrachiata* (non Fawc.) Burkill & Holttum, **FMP3** 174; tuberous red to yellow parasitic herb to 15 cm tall; lowland and montane rain forest; widespread.
- 56.1.6 **Balanophora reflexa** Becc., **FM17** 800, **K23** 547; tuberous orange to dark red parasitic herb to 10 cm tall; lowland forest; Bt Bintang, Ps, and Jengka, Ph.
- 56.2.1 **Exorhopala ruficeps** (Ridl.) Steenis, **FM17** 790; *Rhopalocnemis ruficeps* Ridl., **FMP3** 176; parasitic herb with elongated horizontal tuber; dense forest at 100–1200 m; Penara Bukit, Pn, and Taiping Hills, Pk; endemic genus.

## 57. BALSAMINACEAE

- 57.1.1 **Hydrocera triflora** (L.) Wight & Arn., **G17** 218, **T05** 128; *Hydrocera angustifolia* Blume, **FMP1** 340 incl. var. *latifolia* Ridl.; erect herb to 1 m tall; marshy places, paddy-fields; Ps, Pn, Kl, Ph, Sl, Ml, Sp (recent arrival).
- 57.2.1 **Impatiens albo-flava** Miq., **G19** 98; *Impatiens scortechinii* Hook.f., **FMP1** 339, **S21** 206, **C14** 97; succulent herb to 1 m tall; limestone; Pk, Ph.
- 57.2.2 **Impatiens cryptoneura** Hook.f., **FMP1** 339, **S20** 208, **C13** 95; herb to 30 cm tall; limestone; once from near Ipoh, Pk; endemic.
- 57.2.3 **Impatiens curtisii** Hook.f., **FMP1** 337; herb to 40 cm tall; damp rocks in hill and montane forest; Taiping Hills, Pk; endemic.
- 57.2.4 **Impatiens exilipes** Hook.f., **FMP1** 337, **S21** 194; herb to 60 cm tall; damp lowland forest to 500 m; Pn, Pk, Ph.
- 57.2.5a **Impatiens griffithii** Hook.f. & Thomson var. **griffithii**, **FMP1** 336, **S21** 192; herb to 60 cm tall; Gg Ledang, Ml; endemic variety.
- 57.2.5b **Impatiens griffithii** Hook.f. & Thomson var. **sarcantha** (Hook.f.) T. Shimizu, **S21** 192; *Impatiens sarcantha* Hook.f., **FMP1** 336; *Impatiens polycla* Hook.f. ex Ridl., **FMP1** 336; herb to 30 cm tall; on rocks in streams, lowlands and mountains; Kd, Pk, Ph.
- 57.2.6 **Impatiens macrosepala** Hook.f., **FMP1** 339, **S21** 205, **C14** 96; herb to 40 cm tall; on limestone; Bt Lagi and Tebing Tinggi, Ps.
- 57.2.7 **Impatiens mirabilis** Hook.f., **FMP1** 337, **S21** 216, **C14** 96; herb to 2.5 m tall with swollen stem-base; limestone; Ps, P. Langkawi, Kd, Ph.
- 57.2.8 **Impatiens oncioides** Ridl. ex Hook.f., **FMP1** 337, **S21** 212; succulent herb to 1.5 m tall; damp spots in montane forest; Pk, Ph, Sl; endemic.
- 57.2.9 **Impatiens opinata** Craib, **S21** 216, **C14** 96; *Impatiens foxworthyi* M.R. Hend., **H31** 50; herb to 50 cm tall; damp shaded places on limestone; Kl, Ph.
- 57.2.10 **Impatiens ridleyi** Hook.f., **FMP1** 339, **S21** 207, **C14** 96; herb to 40 cm tall; limestone; Gg Senyum, Ph, and Gua Batu, Sl; endemic.
- 57.2.11 **Impatiens tipusensis** M.R. Hend., **H34** 72, **S21** 208, **C14** 97; creeping herb; on limestone; Gua Tipus, Ph; endemic.
- 57.2.12 **Impatiens vaughanii** Hook.f., **FMP1** 338, **S21** 203, **C14** 97; fleshy herb to 60 cm tall; on limestone; Ps.
- 57.2.13 **Impatiens wallerana** Hook.f. ex Oliv., **S21** 210, **G18** 81; succulent herb to 60 cm tall; roadsides and tea plantations; Maxwell Hill, Pk, Cameron Highlands, Ph; naturalized from tropical East Africa.

57.2.14 **Impatiens wrayii** Hook.f., **FMP1** 336, **S21** 194; herb to 30 cm tall; on rocks in streams; Batang Padang, Pk; endemic.

## 58. BEGONIACEAE

58.1.1 **Begonia aequilateralis** Irmsch., **I03** 134; creeping herb; lowland forest; Sg Buloh, Sl; endemic.

58.1.2 **Begonia alpina** L.B. Sm. & D.C. Wasshausen, **G12** 137; *Begonia monticola* (non C. DC.) Ridl., **FMP1** 862, **I03** 128; creeping herb; montane forest; Gg Mengkuang Lebah, Sl; endemic.

58.1.3 **Begonia barbellata** Ridl., **FMP1** 856, **I03** 116; herb 35 cm tall; sandy lowland forest; Kl, Tg, Jh; endemic.

58.1.4 **Begonia carnosula** Ridl., **FMP1** 857, **I03** 146; succulent creeping herb; shaded banks; Ulu Batang Padang, Pk, and Telom, Ph; endemic.

58.1.5 **Begonia collina** Irmsch., **I03** 135; rhizomatous herb; Bt Hitam, Sl; endemic.

58.1.6 **Begonia corneri** Kiew, **K38** 272; creeping herb; on earth banks in lowland forest; known only from type, Sg Nipa, Tg; endemic.

58.1.7 **Begonia curtisii** Ridl., **FMP1** 856, **I03** 149, **C14** 98; tuberous herb to 20 cm tall; on limestone; P. Langkawi.

58.1.8 **Begonia debilis** King, **FMP1** 858, **I03** 157, **C14** 98; herb to 20 cm tall; on rocks in forest, once on limestone; Gg Pondok, Pk, and Gg Tampin, NS; endemic.

58.1.9 **Begonia decora** Stapf, **FMP1** 863, **I03** 121; creeping herb; montane forest; P. Langkawi, Pk, Ph; endemic.

58.1.10 **Begonia eiromischa** Ridl., **FMP1** 860, **I03** 108; **K34** 64; herb; once from Pn; endemic (probably extinct).

58.1.11 **Begonia forbesii** King, **FMP1** 855, **I03** 159, herb to 15 cm tall; Pk; endemic.

58.1.12 **Begonia foxworthyi** Burkill *ex* Ridl., **FMP5** 311, **I03** 100, **C14** 98; tufted herb; on limestone; Kl, Ph; endemic.

58.1.13 **Begonia fraseri** Kiew, **K45** 64; low prostrate herb to 30 cm tall; lower montane forest; Fraser's Hill & Gg Benom, Ph; endemic.

58.1.14 **Begonia guttata** Wall. *ex* A. DC., **FMP1** 858, **I03** 153; small creeping herb; on rocks in lowland forest; P. Langkawi, Pn, Sl.

58.1.15 **Begonia haniffii** Burkill, **I03** 151; herb to 25 cm tall; once from P. Langkawi.

- 58.1.16a **Begonia herveyana** King var. **barnesii** Irmsch., **I03** 131; large herb; Kluang Terbang, Ph; endemic.
- 58.1.16b **Begonia herveyana** King var. **herveyana**, **FMP1** 861, **I03** 131; large herb; lowland forest; NS, MI, Jh; endemic.
- 58.1.17 **Begonia hirtella** Link, **FMP1** 864; herb to 30 cm tall; shady banks at the Hill Stations; Kd, Pn, Pk, Ph; naturalized from South America.
- 58.1.18 **Begonia holttumii** Irmsch., **I03** 113; *Begonia isoptera* auct. non Dryand., **FMP1** 855 in part; herb to 1 m tall; Pn, Pk, Sl, NS, MI, Jh; endemic.
- 58.1.19 **Begonia ignorata** Irmsch., **I03** 97, **C14** 98; *Begonia hasskarlii* Zoll. & Moritzi var. *hirsuta* Ridl., **FMP1** 860; small creeping herb; on limestone; known only from type, Kota Glanggi, Ph; endemic.
- 58.1.20 **Begonia isopteroidea** King, **FMP1** 856, **I03** 112; herb to 1 m tall; montane forest; Gg Brumber Pahang, Pk; endemic.
- 58.1.21 **Begonia kingiana** Irmsch., **I03** 106, **C14** 98; *Begonia hasskarlii* auct. non Zoll. & Moritzi, **FMP1** 860; creeping herb; shady places on limestone; Kl, Pk, Sl; endemic.
- 58.1.22 **Begonia klossii** Ridl., **FMP1** 861, **I03** 133; creeping herb; montane forest; Gg Menuang Gasing, Sl; endemic.
- 58.1.23 **Begonia leucantha** Ridl., **FMP1** 857, **I03** 157; small herb; lowland forest; Pk, Ph; endemic.
- 58.1.24 **Begonia longicaulis** Ridl., **FMP1** 862, **I03** 120; herb; montane forest; Gg Kerbau, Pk, and Gg Tahan, Ph; endemic.
- 58.1.25 **Begonia lowiana** King, **FMP1** 864, **I03** 137; herb to 1 m tall; upper montane forest; Pk; endemic.
- 58.1.26 **Begonia martabanica** A. DC. var. **pseudoclivalis** Irmsch., **I03** 145; *Begonia clivalis* Ridl., **FMP1** 857 in part; herb to 20 cm tall; sandy banks; Ulu Temengoh, Ph; endemic variety.
- 58.1.27 **Begonia maxwelliana** King, **FMP1** 863, **I03** 118; herb; hill and montane forest; Pn, Pk; endemic.
- 58.1.28 **Begonia nurii** Irmsch., **I03** 95, **C14** 99; herb; on limestone; Kl, Ph; endemic.
- 58.1.29 **Begonia paupercula** King, **FMP1** 862, **I03** 122; herb; on rocks in forest; Gopeng, Pk; endemic.
- 58.1.30 **Begonia pavonina** Ridl., **FMP1** 863, **I03** 123; herb; montane forest; Pk, Ph; endemic.

- 58.1.31 ***Begonia peninsulae*** Irmsch., **I03** 98; small creeping herb; once from Tg; endemic subspecies.
- 58.1.32a ***Begonia perakensis*** King var. ***conjungens*** Irmsch., **I03** 129, **T19** 129; herb; on rocks in streams in hill and montane forest; Pk, Sl; endemic.
- 58.1.32b ***Begonia perakensis*** King var. ***perakensis***, **FMP1** 861 in part, **T19** 129; *Begonia perakensis* var. *rotundata* Irmsch., **I03** 129; herb; on rocks in streams in hill and montane forest; Pk, Sl; endemic.
- 58.1.33 ***Begonia phoeniogramma*** Ridl., **FMP1** 858, **I03** 155, **C14** 99; creeping herb to 15 cm tall; shaded crevices in limestone; P. Langkawi, Kl, Sl; endemic.
- 58.1.34 ***Begonia rajah*** Ridl., **FMP1** 855, **I03** 96, **K34** 65; herb; lowland forest; Gg Lawit, Tg; endemic.
- 58.1.35 ***Begonia rheifolia*** Irmsch., **I03** 132; *Begonia herveyana* King var. *robusta* Ridl., **FMP1** 861; large herb; hill forest; Gg Tahan, Ph; endemic.
- 58.1.36 ***Begonia rhoephila*** Ridl., **FMP1** 860, **I03** 137; creeping herb; on rocks in forest streams; Ulu Gombak, Sl; endemic.
- 58.1.37 ***Begonia robinsonii*** Ridl., **FMP1** 863, **I03** 125; fleshy herb; montane forest; Ph; endemic.
- 58.1.38a ***Begonia scortechinii*** King var. ***kunstleriana*** (King) Ridl., **FMP1** 860, **I03** 134; herb; Gg Bujung Malacca, Pk; endemic.
- 58.1.38b ***Begonia scortechinii*** King var. ***scortechinii***, **FMP1** 860, **I03** 133; herb; Pk; endemic.
- 58.1.39 ***Begonia sibthorpioides*** Ridl., **FMP1** 859, **I03** 158; tuberous herb; cliff face; Gg Jerai, Kd; endemic.
- 58.1.40a ***Begonia sinuata*** Wall. ex Meisn. var. ***clivalis*** (Ridl.) Irmsch., **I03** 144; *Begonia clivalis* Ridl., **FMP1** 857 in part; herb to 20 cm tall; Klang Gates, Sl; endemic variety.
- 58.1.40b ***Begonia sinuata*** Wall. ex Meisn. var. ***etamensis*** Irmsch., **I03** 142; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; on damp rocks in hill forest; Bt Hitam, Sl; endemic variety.
- 58.1.40c ***Begonia sinuata*** Wall. ex Meisn. var. ***langkawiensis*** Irmsch., **I03** 142; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; forest; P. Langkawi; endemic variety.
- 58.1.40d ***Begonia sinuata*** Wall. ex Meisn. var. ***malaccensis*** Irmsch., **I03** 143; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; forest; endemic variety.

- 58.1.40e **Begonia sinuata** Wall. ex Meisn. var. **monophylloides** Irmsch., **I03** 143; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; lowland forest; Sg Tahan, Ph; endemic variety.
- 58.1.40f **Begonia sinuata** Wall. ex Meisn. var. **penangensis** Irmsch., **I03** 142; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; hill forest; Penang Hill; endemic variety.
- 58.1.41 **Begonia tampinica** Burkill ex Irmsch., **I03** 130; rhizomatous herb; montane forest; Gg Tampin, NS; endemic.
- 58.1.42 **Begonia thaipingensis** King, **FMP1** 857, **I03** 145; slender creeping herb; sandy places; Pk, Sl; endemic.
- 58.1.43 **Begonia tiomanensis** Ridl., **I03** 133; herb to 40 cm tall; montane forest; P. Tioman, Ph; endemic.
- 58.1.44 **Begonia tricornis** Ridl., **FMP1** 854, **I03** 109; herb to 1 m tall; lowland and hill forest; Ph, Sl; endemic.
- 58.1.45 **Begonia variabilis** Ridl., **FMP1** 858, **I03** 147; herb to 30 cm tall; lowland forest; Pk; endemic.
- 58.1.46 **Begonia venusta** King, **FMP1** 862, **I03** 126; herb; upper montane forest; Pk, Ph; endemic.
- 58.1.47 **Begonia wrayi** Hemsl., **K42** 312; *Begonia isoptera auct. non* Dryand., **FMP1** 855 in part; *Begonia pseudoisoptera* Irmsch., **I03** 112; shrubby herb to 1 m tall; lowland and hill forest to 1000 m; Pn, Kl, Pk, Ph, Sl, NS; endemic.
- 58.1.48 **Begonia yappii** Ridl., **R15** 258; creeping herb; Kuala Aring, Kl; endemic.

## 59. BIGNONIACEAE

- 59.1.1 **Deplanchea bancana** (Scheff.) Steenis, **FMi8** 137, **TFM3** 37; *Diplanthera bancana* Scheff., **FMP2** 552; tall tree to 45 m tall; swampy lowland forest; Pn, Sl, NS, MI.
- 59.2.1 **Dolichandrone spathacea** (L.f.) K.Schum., **FMi8** 142, **TFM3** 39; *Dolichandrone rheedei* (Spreng.) Seem., **FMP2** 549; tree to 24 m tall, usually smaller; mangroves and other muddy areas near the sea; widespread.
- 59.3.1 **Fernandoa adenophylla** (Wall. ex G. Don) Steenis, **FMi8** 159, **TFM3** 39; *Heterophragma adenophyllum* (Wall. ex G. Don) Seem. ex Benth. & Hook.f., **FMP2** 551; tree to 15 m tall; lowland forest, often on limestone; Ps, Kd, P. Langkawi, ?Sp.
- 59.4.1 **Hieris curtisii** (Ridl.) Steenis, **FMi8** 127, **TFM3** 37; *Pandorea curtisii* Ridl., **FMP2** 553; slender woody climber; lowland forest; Pn; endemic.

- 59.5.1 **Oroxylum indicum** (L.) Benth. *ex* Kurz, **FMP2** 548, **FMi8** 128, **TFM3** 40; tree to 18 m tall; lowland forest, often near villages and rice fields; MI northward.
- 59.6.1 **Pajanelia longifolia** (Willd.) K.Schum., **FMi8** 163, **TFM3** 40; *Pajanelia multijuga* A.P. DC., **FMP2** 549; tree to 36 m tall; primary and secondary lowland and hill forest; north of Malaya.
- 59.7.1 **Radermachera glandulosa** (Blume) Miq., **FMi8** 152, **TFM3** 42; *Radermachera stricta* Zoll. & Moritzi *ex* Zoll., **FMP2** 550; small crooked tree to 12 m tall; lowland forest to 900 m; MI northward.
- 59.7.2 **Radermachera peninsularis** Steenis, **FMi8** 155; *Radermachera sinica auct. non* (Hance) Hemsl., **TFM3** 42; tree 4–15 m tall; lower montane forest at 1200 m; Cameron Highlands (2 colls.), Ph.
- 59.7.3 **Radermachera pinnata** (Blanco) Seem. var. **acuminata** (Steenis) Steenis, **FMi8** 154, **TFM3** 42; *Radermachera amoena auct. non* (Wall.) Seem., **FMP2** 551; tree to 27 m tall; lowland forest to 400 m, also on limestone; widespread.
- 59.8.1 **Spathodea campanulata** P. Beauv., **FMI8** 185; tree to 25 m tall; roadsides, waste places, secondary forest; Sp; naturalized from tropical Africa.
- 59.9.1 **Stereospermum colais** (Dillwyn) Mabb., **M03** 553, **FMi9** 554, **N11** 73; *Stereospermum chelonoides* [*non* (L.f.) A.P. DC.]] A.P. DC., **FMP2** 550; *Stereospermum personatum* (Hassk.) Chatterjee, **FMi8** 148, **TFM3** 44; tree to 30 m tall; lowland forest; Pn, Sp.
- 59.9.2 **Stereospermum fimbriatum** (Wall. *ex* G. Don) A. DC., **FMP2** 550, **FMi8** 146, **TFM3** 44; tree reaching 27–30 m tall; lowland and hill forest to 1000 m, often planted; widespread.
60. BOMBACACEAE
- 60.1.1 **Bombax anceps** Pierre, **TFM1** 104; *Bombax insularis* Ridl., **FMP1** 260; tree to 12 m tall; rocky places near the sea; P. Langkawi, Pn.
- 60.1.2 **Bombax valetonii** Hochr., **TFM1** 104; *Bombax larutensis* Ridl., **FMP1** 260; tree to 35 m tall; lowland and hill forest; north of the Peninsula.
- 60.2.1 **Coelostegia borneensis** Becc., **TFM1** 106; tree to 30 m tall; lowland forest; Ph, Jh.
- 60.2.2 **Coelostegia griffithii** Benth., **FMP1** 266, **TFM1** 106; tree to 35 m tall; lowland and hill forest; scattered throughout.
- 60.3.1 **Durio affinis** Becc., **TFM1** 109; tree to 25 m tall; lowland forest; Tg, Jh.

- 60.3.2 **Durio carinatus** Mast., **TFM1** 109; tree to 25 m tall; peat swamp forest; Ph, Jh.
- 60.3.3 **Durio graveolens** Becc., **TFM1** 109; tree to 40 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Sl, Ml, Jh.
- 60.3.4 **Durio griffithii** (Mast.) Bakh., **TFM1** 110; *Boschia griffithii* Mast., **FMP1** 265; tree; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 60.3.5 **Durio lowianus** Scort. ex King, **FMP1** 263, **TFM1** 110; *Durio wrayi* King, **FMP1** 264; tree to 40 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.
- 60.3.6 **Durio macrophyllus** (King) Ridl., **FMP1** 264, **TFM1** 111; tree; lowland forest; Kl, Pk, Ph; endemic.
- 60.3.7 **Durio malaccensis** Planch. ex Mast., **FMP1** 262, **TFM1** 111; tree to 20 m tall; lowland and hill forest; Tg, Sl, NS, Ml, Jh.
- 60.3.8 **Durio oxleyanus** Griff., **FMP1** 263, **TFM1** 111; tree to 30 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 60.3.9 **Durio pinangianus** (Becc.) Ridl., **FMP1** 264, **TFM1** 112; small tree; hill forest; Pn, Pk; endemic.
- 60.3.10 **Durio singaporensis** Ridl., **FMP1** 263, **TFM1** 113; tree to 30 m tall; lowland and hill forest; Tg, Ph, NS, Jh, Sp; endemic.
- 60.3.11 **Durio wyatt-smithii** Kosterm., **TFM1** 113; tree to 30 m tall; lowland forest; Kl, Tg.
- 60.3.12 **Durio** sp. A, **TFM1** 116; tree to 20 m tall; once from Kluang, Jh.
- 60.4.1 **Kostermansia malayana** Soegeng, **TFM1** 116; tree to 45 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, Jh; endemic.
- 60.5.1 **Neesia altissima** (Blume) Blume, **TFM1** 118; tree to 30 m tall; lowland forest; Pk, Sp.
- 60.5.2 **Neesia kostermansiana** Soepadmo, **TFM1** 118; tree to 25 m tall; lowland freshwater swamp forest; Pk, Sl.
- 60.5.3 **Neesia malayana** Bakh., **TFM1** 118; tree to 25 m tall; fresh water swamp forest; Tg, Ph, Jh, Sp.
- 60.5.4 **Neesia pilulifera** Becc., **TFM1** 118; tree to 20 m tall; lowland forest; Sl.
- 60.5.5 **Neesia synandra** Mast., **FMP1** 265, **TFM1** 119; tree to 30 m tall; wet lowland forest; scattered throughout.



61. **BORAGINACEAE**
- 61.1.1 **Argusia argentea** (L.f.) Heine, **H29** 109; *Tournefortia argentea* L.f., **FMP2** 440; *Messerschmidia argentea* (L.f.) I.M. Johnst., **TFM4** 64; shrub to 3 m tall; sandy coasts of offshore islands; P. Langkawi, and P. Babi Tengah and P. Tinggi, Jh.
- 61.2.1 **Carmona retusa** (Vahl) Masam., **TFM4** 59; *Ehretia buxifolia* Roxb., **FMP2** 442; shrub or small tree to 4 m tall; open dry sandy spots, waste places; native to Ph, cultivated and escaped elsewhere.
- 61.3.1 **Coldenia procumbens** L., **FMP2** 442, **TFM4** 58; prostrate creeping herb; weed of open places; Ps, Kd, Tg, Ph.
- 61.4.1 **Cordia cylindristachya** (Ruiz & Pav.) Roem. & Schult., **TFM4** 60; shrub to 4 m tall; waste places; throughout Malaya; naturalized from tropical America.
- 61.4.2 **Cordia dichotoma** G. Forst., **TFM4** 60; *Cordia griffithii* C.B. Clarke, **FMP2** 439; *Cordia obliqua* Willd., **FMP2** 439; *Cordia premnifolia* Ridl., **FMP2** 439; tree to 13 m tall, rarely climbing; lowland forest, back mangrove, on limestone; Ps, Kd, Pk, Ph, Sl, Ml, Jh, Sp.
- 61.4.3 **Cordia subcordata** Lam., **FMP2** 439, **TFM4** 62; tree to 15 m tall; rocky and sandy sea shores; Ps, Kd, Pn, Pk, Ph, Jh, Sp.
- 61.5.1 **Ehretia parallela** C.B. Clarke, **FMP2** 442, **TFM4** 63; tree to 24 m; hill forest at 800–1000 m; Pn, Sl.
- 61.5.2 **Ehretia timorensis** Decne., **FMP2** 442, **TFM4** 63; scrambling shrub or small tree to 16 m tall; lowland forest, often near the sea, also on limestone; P. Langkawi, Pk, Ph, Sl, Jh.
- 61.6.1 **Heliotropium indicum** L., **FMP2** 441, **TFM4** 58, **M44** 114; herb to 50 cm tall; weed of cultivation, waste places; throughout.
- 61.7.1 **Pteleocarpa lamponga** (Miq.) Bakh. ex Heyne, **TFM4** 64; *Pteleocarpa malaccensis* Oliv., **FMP2** 464; tree to 37 m tall; lowland and hill forest to 600 m; Kl, Tg, Pn, Ph, Sl, Ml, Jh, Sp.
- 61.8.1 **Rotula aquatica** Lour., **TFM4** 59, **V20** 209; *Rhabdia lycioides sensu* C.B. Clarke, **FMP5** 323; rheophytic shrub to 2 m tall; river banks; north of Malaya.
- 61.9.1 **Tournefortia tetrandra** Blume, **TFM4** 65; *Tournefortia wallichii* DC., **FMP2** 441; shrub or woody climber; lowland to lower montane forest, reaching 1130 m; Pn, Pk, Ph, Sl, Jh, Sp.

## 62. BUDDLEJACEAE

- 62.1.1 **Buddleja asiatica** Lour., **FMP2** 414, **FM16** 337, **TFM2** 268; shrub or small tree 1–7 m tall; open places and secondary forest in the lowlands; Pn, Pk, Ph, Jh.
- 62.1.2 **Buddleja davidii** Franch.; **FM16** 340, **TFM2** 268, shrub to 2.5 m tall; montane forest margins and clearings; Cameron Highlands, Ph; naturalized ornamental from Central Asia.
- 62.1.3 **Buddleja madagascariensis** Lam., **FM16** 340, **TFM2** 268; shrub 2–3 m tall; clearings in hill forest at 700–800 m; Pn, Pk; naturalized from Madagascar.

## 63. BURSERACEAE

- 63.1.1 **Canarium apertum** H.J. Lam, **FM15** 275, **TFM1** 128; large tree to 40 m tall; lowland forest; Ph, NS, Sl.
- 63.1.2 **Canarium caudatum** King, **FMP1** 370, **FM15** 259, **TFM1** 129; tree to 18 m tall; lowland forest; widespread.
- 63.1.3 **Canarium denticulatum** Blume, **FMP1** 374, **FM15** 272, **TFM1** 129; tree to 20 m tall; lowland and hill forest; Kd, Pk, Sl.
- 63.1.4 **Canarium grandifolium** (Ridl.) H.J. Lam, **FM15** 275, **TFM1** 129; *Trigonochlamys grandifolia* Ridl., **FMP1** 381; tree to 35 m tall; Kd, Tg, Pk, Ph, NS, Jh, Sp.
- 63.1.5 **Canarium hirsutum** Willd., **FM15** 287, **TFM1** 130; *Canarium hispidum* Blume, **FMP1** 374; *Canarium subcordatum* Ridl., **FMP1** 374; tree 10–25 m tall; lowland forest; one collection each from Pk, Ph, Jh.
- 63.1.6 **Canarium littorale** Blume, **FM15** 256, **TFM1** 130; *Canarium purpurascens* Benn., **FMP1** 370; *Canarium rufum* Benn., **FMP1** 372; *Canarium secundum* Benn., **FMP1** 375; tree 10–30 m tall; lowland forest, occasionally in the highlands; throughout.
- 63.1.7 **Canarium megalanthum** Merr., **FM15** 274, **TFM1** 131; tree to 40 m tall; lowland forest; Kd, Ph, NS, Jh.
- 63.1.8 **Canarium patentinervium** Miq., **FM15** 258, **TFM1** 134; *Canarium nitidum* Benn., **FMP1** 373; *Canarium parvifolium* Benn., **FMP1** 373; ?*Canarium littorale auct. non* Blume, **FMP1** 375; tree to 20 m tall; lowland and hill forest understorey; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 63.1.9 **Canarium perlisanum** Leenh., **FM15** 258, **TFM1** 134; small tree to 10 m tall; limestone hill at 70 m; known only from type, Kaki Bt, Ps; endemic.

- 63.1.10 **Canarium pilosum** Benn., **FMP1** 372 incl. var. *hirtellum* (Benn.) Ridl., **FMi5** 281, **TFM1** 134; *Canarium grandiflorum* Benn., **FMP1** 370; tree to 20 m tall; lowland and hill forest to 600 m; widespread.
- 63.1.11 **Canarium pseudodecumanum** Hochr., **FMi5** 275, **TFM1** 135; buttressed tree to 50 m tall; damp or swampy lowland forest; Kd, Pk, Ph, NS.
- 63.1.12 **Canarium pseudosumatranum** Leenh., **FMi5** 286, **TFM1** 135; very large tree to 50 m tall; lowland and hill forest; Ps, Kd, Pk, Ph, Sl, NS; endemic.
- 63.1.13 **Canarium reniforme** Kochummen & Whitmore, **TFM1** 136; small tree to 20 m tall; hill forest, often coastal; Pk, Sl; endemic.
- 63.1.14 **Canarium sumatranum** Boerl. & Koord., **FMi5** 286, **TFM1** 136; very large tree to 50 m tall; lowland forest, rare; NS.
- 63.2.1 **Dacryodes breviracemosa** Kalkman, **TFM1** 140; tree to 20 m tall; lowland forest; known only from type, Bt Bauk F.R., Tg; endemic.
- 63.2.2 **Dacryodes costata** (Benn.) H.J. Lam, **FMi5** 222, **TFM1** 140; *Santiria costata* Benn., **FMP1** 380; tree to 40 m tall; lowland and hill forest; Kd, Tg, Pn, Pk, Ph, Sl, NS, Jh, Sp.
- 63.2.3 **Dacryodes incurvata** (Engl.) H.J. Lam, **FMi5** 224, **TFM1** 140; tree 10–30 m tall; lowland and hill forest including swamps; Kl, Tg, Pk, Ph, Sl, Jh.
- 63.2.4 **Dacryodes kingii** (Engl.) Kalkman, **FMi5** 224, **TFM1** 141; *Santiria floribunda* King, **FMP1** 376; large shrub or small tree to 12 m tall; lowland forest to 400 m; common throughout; endemic.
- 63.2.5 **Dacryodes laxa** (Benn.) H.J. Lam, **FMi5** 224, **TFM1** 141; *Santiria laxa* (Benn.) King, **FMP1** 377; tree to 15 m tall; lowland and hill forest; widespread.
- 63.2.6 **Dacryodes longifolia** (King) H.J. Lam, **FMi5** 228 incl. var. *penangensis* (Ridl.) H.J. Lam, **TFM1** 141; *Santiria longifolia* King, **FMP1** 379; *Curtisina penangensis* Ridl., **FMP1** 491; tree to 35 m tall; hill forest, often coastal; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh; endemic.
- 63.2.7 **Dacryodes macrocarpa** (King) H.J. Lam, **FMi5** 226, **TFM1** 142; *Santiria macrocarpa* King, **FMP1** 378; tree 10–25 m tall, often stilt-rooted; swampy lowland forest; Pk, Sl, Jh.
- 63.2.8 **Dacryodes nervosa** (H.J. Lam) Leenh., **TFM3** 142; tree; lowland forest; Trolak Forest Reserve, Pk, Labis F.R., Jh.
- 63.2.9 **Dacryodes puberula** (Benn.) H.J. Lam, **FMi5** 223, **TFM1** 142; *Santiria fasciculata* Benn. var. *puberula* (Benn.) Ridl., **FMP1** 377; tree 15–21 m tall; lowland and hill forest; Pk, Ph, NS, Ml; endemic.

- 63.2.10 **Dacryodes rostrata** (Blume) H.J. Lam, **FMi5** 225, **TFM1** 143; *Canarium kadondon* Benn., **FMP1** 373; tree 5–25 m tall; hill forest to 600 m, sometimes in swamps; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 63.2.11 **Dacryodes rubiginosa** (Benn.) H.J. Lam, **FMi5** 225, **TFM1** 143; *Canarium rubiginosum* Benn., **FMP1** 374; tree 20–35 m tall; lowland forest, usually on slopes or ridges; Pk, Ph, Sl, NS, Ml, Jh.
- 63.2.12 **Dacryodes rugosa** (Blume) H.J. Lam, **FMi5** 221, **TFM1** 144; *Santiria fasciculata* Benn., **FMP1** 377; tree 5–20 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 63.3.1 **Garuga floribunda** Decne., **FMi5** 215, **TFM1** 144; tree about 10 m tall; forest on limestone; once from Gua Jenera, Kl.
- 63.4.1a **Santiria apiculata** Benn. var. *apiculata*, **FMP1** 378, **FMi5** 234, **TFM1** 146; *Santiria minutiflora* Ridl., **FMP1** 377; tree 6–20 m tall; lowland and hill forest to 1200 m; Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh.
- 63.4.1b **Santiria apiculata** Benn. var. *rubra* (Ridl.) Kalkman, **FMi5** 234, **TFM1** 146; tree 6–20 m tall; lowland and hill forest; widespread.
- 63.4.2 **Santiria conferta** Benn., **FMP1** 379, **FMi5** 233, **TFM1** 146; *Santiria wrayi* King, **FMP1** 379; tree 6–24 m tall; lowland forest on slopes, but sometimes in the mountains; not in extreme north.
- 63.4.3 **Santiria griffithii** (Hook.f.) Engl., **FMi5** 236, **TFM1** 147; *Trigonochlamys griffithii* Hook.f., **FMP1** 381; tree 12–35 m tall; lowland forest to 300 m; not in the far north.
- 63.4.4 **Santiria laevigata** Blume, **FMP1** 378, **FMi5** 232, **TFM1** 147; tree 15–30 m tall; lowland to montane forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 63.4.5 **Santiria nervosa** H.J. Lam, **FMi5** 233; tree 25–30 m tall; lowland forest.
- 63.4.6 **Santiria oblongifolia** Blume, **FMP1** 379, **FMi5** 233, **TFM1** 150; tree 20–30 m tall; lowland forest; Kd southwards.
- 63.4.7 **Santiria ridleyi** H.J. Lam, **FMi5** 233, **FMP1** 150; small tree; known only from type, Gg Keladang, Pk; endemic.
- 63.4.8a **Santiria rubiginosa** Blume var. *nana* (H.J. Lam) Kalkman, **FMi5** 238, **TFM1** 151; tree to 30 m; peat swamp forest; Sl.
- 63.4.8b **Santiria rubiginosa** Blume var. *rubiginosa*, **FMi5** 237, **TFM1** 151; *Icicaster planchonii* Ridl., **FMP1** 381; tree to 30 m; lowlands to mountains; Kd, Tg, Pk, Ph, Sl, NS, Jh, Sp.

63.4.9 **Santiria tomentosa** Blume, **FMI5** 231, **TFM1** 151; *Santiria multiflora* Benn., **FMP1** 380; tree 15–35 m tall; swampy lowland forest to 250 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

63.5.1 **Scutinanthe brunnea** Thwaites, **FMI5** 247, **TFM1** 152; tree to 30 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, NS, Ml, Jh.

63.6.1 **Triomma malaccensis** Hook.f., **FMP1** 369, **FMI5** 218, **TFM1** 154; very large tree approaching 60 m tall on occasions; lowland forest, a few times at greater altitudes; scattered throughout.

## 64. BUXACEAE

64.1.1 **Buxus holttumiana** Hatus., **C14** 102; shrub; on limestone; Kaki Bukit, Ps; endemic.

64.1.2 **Buxus malayana** Ridl., **C14** 102; shrub to 4 m tall; limestone hills; Kl, Ph, Pk, Sl; endemic.

64.1.3 **Buxus rupicola** Ridl., **FMP3** 182, **C14** 103; shrub; limestone rocks near the sea; P. Dayang Bunting, Langkawi; endemic.

## 65. CACTACEAE

65.1.1 **Opuntia monacantha** Haw., **FMP1** 866, **L19** 427; succulent prickly shrub to 2 m tall; dry sandy places, usually near the sea; Jh; naturalized from the New World.

## 66. CAMPANULACEAE

66.1.1 **Codonopsis lancifolia** (Roxb.) Moeliono, **FMI6** 120; *Campanumoea celebica* Blume, **FMP2** 202; sprawling or erect herb to 3 m tall; on banks in the mountains; Taiping Hills, Pk, and Semangkok Pass, Sl.

66.2.1 **Laurentia longiflora** (L.) Peterm., **FMI6** 140; herb 10–30 cm tall; damp shady places in the lowlands and mountains; widespread; naturalized from the Caribbean.

66.3.1 **Lobelia alsinoides** Lam., **FMI6** 126; *Lobelia griffithii* Hook.f. & Thomson, **FMP2** 201; erect herb 3–35 cm tall; marshy grasslands; Chupeng, Ps, ?Sp.

66.3.2 **Lobelia angulata** G. Forst., **FMI6** 133; *Pratia begoniifolia* (Wall.) Lindl., **FMP2** 201; creeping herb to 50 cm long; open or shaded places in the mountains; Pk, Ph, Sl.

- 66.3.3 **Lobelia chinensis** Lour., **FM16** 130; herb 5–15 cm tall; damp grassland, weed of cultivation; Sp; naturalized from continental Asia.
- 66.3.4 **Lobelia montana** Reinw. ex Blume, **FM16** 132; *Pratia montana* (Reinw. ex Blume) Hassk., **H35** 108; erect herb 1–2 m tall; open or lightly shaded places in the mountains; Cameron Highlands, Ph.
- 66.3.5 **Lobelia zeylanica** L., **FM16** 128; *Lobelia affinis* Wall. ex G. Don, **FMP2** 200; creeping or ascending herb 20–90 cm tall; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp.
- 66.4.1 **Sphenoclea zeylanica** Gaertn., **FMP2** 204, **FM14** 27; fleshy herb to 150 cm tall; ditches, swamps and ricefields; Ps, Kd, Pn.

67. CAPPARACEAE

- 67.1.1 **Capparis cucurbitina** King, **FMP1** 124, **FM16** 85, **J01** 446; climber or scandent shrub 6–10 m high; lowland forest to 200 m; Pk; endemic.
- 67.1.2 **Capparis diffusa** Ridl., **FMP1** 122, **FM16** 81, **J01** 447, **C14** 103; shrub or woody climber; on limestone rocks; Ps, P. Langkawi, Pk, Ph.
- 67.1.3 **Capparis erycibe** Hallier f., **FM16** 75, **J01** 449; *Capparis paniculata* Ridl., **FMP1** 124; woody climber; lowland forest, also on limestone; Kl, Ph.
- 67.1.4a **Capparis micracantha** DC. ssp. *korthalsiana* (Miq.) M. Jacobs, **FM16** 86, **J01** 471; *Capparis finlaysoniana* Wall. ex Hook.f. & Thomson, **FMP1** 124; shrub or small tree to 6 m tall, rarely climbing; lowland forest; Pk, Ph, Jh, Sp.
- 67.1.4b **Capparis micracantha** DC. ssp. *micracantha*, **FMP1** 123, **FM16** 85, **J01** 467; shrub or small tree 2–6 m tall; lowland forest, sea shore; widespread, mostly in the north.
- 67.1.5 **Capparis pubiflora** DC., **FM16** 82, **J01** 479; *Capparis perakensis* (Scort. ex King) Ridl., **FMP1** 124; shrub 2–5 m tall; damp lowland forest; Kl, Pk, Ph, Sl.
- 67.1.6 **Capparis scortechinii** King, **FMP1** 122, **FM16** 71, **J01** 488; climbing shrub reaching 2–10 m; hill forest; Tg, Pn, Pk, Ph, Sl.
- 67.1.7 **Capparis sepiaria** L., **FMP1** 122, **FM16** 79, **J01** 489; shrub 1–3 m tall, occasionally climbing; scrubby vegetation; Kd, Kl.
- 67.1.8 **Capparis trinervia** Hook.f. & Thomson, **FM16** 73, **J01** 500; *Capparis kunstleri* King, **FMP1** 122; shrub or climber to 4 m tall; hill forest; Gg Babu, Pk.

- 67.1.9 **Capparis versicolor** Griff., **J01** 501; *Capparis larutensis* King, **FMP1** 122, **FMI6** 89; woody climber reaching 10–13 m; lowland forest below 200 m; Pk, Sl.
- 67.2.1 **Cleome aculeata** L., **FMP1** 120, **FMI6** 104; erect herb to 50 cm tall; weed of cultivation; Sp; naturalized from tropical America.
- 67.2.2 **Cleome gynandra** L., **FMI6** 101; *Gynandropsis pentaphylla* DC., *nom. illeg.*, **FMP1** 120; *Gynandropsis gynandra* (L.) Briq., **N11** 79; erect herb 15–80 cm tall; weed of cultivation, waste places to 500 m; throughout.
- 67.2.3 **Cleome rutidosperma** DC., **FMI6** 104, **M47** 122; *Cleome ciliata* Schumach. & Thonn., **M31** 132; herb to 1 m tall; weed, waste places; throughout; naturalized from tropical Africa.
- 67.2.4 **Cleome viscosa** L., **FMP1** 119, **FMI6** 103, **M47** 124; sticky stinking herb to 1 m tall; waste ground; common throughout; naturalized from mainland Asia.
- 67.3.1 **Crateva hygrophila** Kurz, **FMI6** 69, **TFM2** 26; small tree; once from Pn; poorly known species.
- 67.3.2 **Crateva magna** (Lour.) DC., **TFM2** 26; *Crateva religiosa* (non G. Forst.) Blume, **FMP1** 125; *Crateva nurvala* Buch.-Ham., **FMI6** 68; tree 10–15 m tall; in forest along streams to 600 m; Kd, Kl, Tg, Pk, Ph.
- 67.3.3 **Crateva religiosa** G. Forst., **FMI6** 65, **TFM2** 26; *Crateva macrocarpa* Kurz, **FMP1** 125; tree 5–10 m tall; lowlands; Ps, Kd, Pk, Ph, Sl, Ml, Jh.
- 67.4.1 **Stixis scortechinii** (King) M. Jacobs, **FMI6** 99; *Roydsia parviflora* (non Griff.) King, **FMP1** 120; *Roydsia scortechinii* King, **FMP1** 121; shrub or climber reaching 3–4 m; dry sunny places to 1200 m; Pn, Pk, Ph, Sl, NS.

## 68. CAPRIFOLIACEAE

- 68.1.1 **Lonicera malayana** M.R. Hend., **FMP5** 313, **FMI4** 178, **TFM4** 66; woody climber; scrambling over bushes near mountain streams, 1000 m and above; Cameron Highlands, Ph, and Genting Highlands, Sl.
- 68.2.1 **Viburnum beccarii** Gamble, **FMP2** 2, **FMI4** 183, **TFM4** 67; climbing or scrambling shrub to 3 m tall; montane forest above 1100 m; Pk, Ph, Sl.
- 68.2.2 **Viburnum lutescens** Blume, **FMP2** 2, **FMI4** 188, **TFM4** 67; small tree to 8 m tall; hill and lower montane forest at 500–1200 m; Pk, Ph, Sl.
- 68.2.3a **Viburnum sambucinum** Blume var. **sambucinum**, **FMP2** 1, **FMI4** 186 incl. var. *subglabrum* Kern, **TFM4** 67; *Viburnum longistamineum* Ridl., **FMP2** 2; shrub or small tree to 10 m tall; hill and montane forest; Kd, Tg, Pn, Pk, Sl, Sp.

68.2.3b **Viburnum sambucinum** Blume var. **tomentosum** Hallier f., **FM14** 186, **TFM4** 68; *Viburnum villosum* Ridl., **FMP2** 2; small tree to 10 m tall; hill forest at about 800 m; Bt Kutu, Sl.

68.2.4 **Viburnum sp.**, **TFM4** 68; shrub; on limestone; once collected at Bertam, Kl; ?endemic.

## 69. CARDIOPTERIDACEAE

69.1.1 **Cardiopteris quinqueloba** (Hassk.) Hassk., **FM17** 95; *Cardiopteris lobata* R.Br., *nom. illeg.*, **FMP2** 464; twining vine 2–5 m long; lowland forest to 1000 m; Ps, Kd, Pk, Ph.

## 70. CARYOPHYLLACEAE

70.1.1 **Cerastium glomeratum** Thuill., **S65** 107; slender herb to 15 cm tall; garden weed; Genting Highlands, Ph; naturalized from Europe.

70.2.1 **Drymaria cordata** (L.) Willd. ex Roem. & Schult., **FMP1** 150; small diffuse herb; roadsides, wasteground in lowlands and mountains; widespread; naturalized from tropical America.

70.3.1 **Sagina procumbens** L., **S65** 106; tiny tufted herb; banks and drains; Genting Highlands, Ph; naturalized from Europe.

70.4.1 **Stellaria media** (L.) Vill., **FMP5** 288, **S65** 106; herb to 30 cm tall; weed at the hill resorts; Pk, Ph; naturalized from Europe.

70.4.2 **Stellaria uliginosa** L., **FMP5** 289; slender creeping herb ascending to 15 cm; banks and verges in the mountains; Fraser's Hill, Ph; naturalized from temperate Asia.

## 71. CASUARINACEAE

71.1.1 **Casuarina equisetifolia** J.R. Forst. & G. Forst., **FMP3** 372, **TFM3** 46; tree to 50 m tall; sandy coasts; P. Langkawi and along the East Coast.

## 72. CECROPIACEAE

72.1.1 **Cecropia peltata** L., **K09** 67; small tree; disturbed lowland forest; Sl, Sp; naturalized from the Neotropics.



- 72.2.1 **Poikilospermum cordifolium** (Barg.-Petr.) Merr., **C06** 66; *Conocephalus amoenus* auct. non King ex Hook.f., **FMP3** 357 in part; hemi-epiphyte; along streams in the lowlands; Kl, Tg, Pk, Ph, Sl, Jh, Sp.
- 72.2.2 **Poikilospermum microstachys** (Barg.-Petr.) Merr., **C06** 72; *Conocephalus subtrinervius* Miq. sensu Hook.f., **FMP3** 358; hemi-epiphyte; along rivers or in swamp forest; Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 72.2.3 **Poikilospermum scortechinii** (King) Merr., **C06** 84; *Conocephalus scortechinii* King, **FMP3** 357; hemi-epiphyte; lowland forest to 300 m, near water courses and swamps; Pk, Sl, Jh.
- 72.2.4 **Poikilospermum suaveolens** (Blume) Merr., **C06** 88; *Conocephalus suaveolens* Blume, **FMP3** 357; *Conocephalus amoenus* King, **FMP3** 357 in part; hemi-epiphyte; along water courses in forest to 1500 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.
73. CELASTRACEAE
- 73.1.1 **Arnicratea ferruginea** (King) N. Hallé, **H02** 16; *Hippocratea ferruginea* King, **FMP1** 455; *Reissantia ferruginea* (King) Ding Hou, **FM16** 402; liana reaching to 20 m; lowland forest to 450 m; Pn.
- 73.2.1 **Bhesa indica** (Bedd.) Ding Hou, **FM16** 283, **TFM1** 160; tree to 20 m tall; rare in hill forest; Kd, Sl, Ml.
- 73.2.2 **Bhesa paniculata** Arn., **FM16** 282, **TFM1** 160; *Kurrimia paniculata* Wall. ex Arn., **FMP1** 452; tree to 35 m tall; lowland and montane forest to 1300 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh, Sp.
- 73.2.3 **Bhesa robusta** (Roxb.) Ding Hou, **FM16** 283, **TFM1** 161; *Kurrimia pulcherrima* Wall. ex Laws., **FMP1** 452; tree to 40 m tall; lowland and hill forest; Kd, Kl, Pn, Pk, Ph, Sl, NS, Ml, Sp.
- 73.3.1 **Cassine viburnifolia** (Juss.) Ding Hou, **FM16** 286; *Elaeodendron subrotundum* King, **FMP1** 453; shrub or small tree to 10 m tall; near the sea, in mangroves; Kd, Pk, Sl, Jh, Sp.
- 73.4.1 **Celastrus monospermoides** Loes., **FM16** 236; *Celastrus malayensis* Ridl., **FMP1** 451; scandent shrub or woody climber to 17 m tall; hill forest; widespread.
- 73.4.2 **Celastrus paniculatus** Willd., **FMP1** 451, **FM16** 235; scandent shrub to 10 m tall; open country in the hills; scattered.
- 73.5.1 **Euonymus cochinchinensis** Pierre, **FM16** 248, **TFM1** 162; *Glyptopetalum scortechinii* King, **FMP1** 447; *Euonymus pahangensis* Ridl., **FMP5** 299; small tree to 12 m tall; lowland and hill forest to 1300 m; Pk, Ph.

- 73.5.2 **Euonymus glaber** Roxb., **FMi6** 250, **TFM1** 162; *Lophopetalum pedunculatum* Ridl., **FMP1** 449; small tree to 5 m tall; lowlands; twice collected in Ps.
- 73.5.3 **Euonymus javanicus** Blume, **FMP1** 445, **FMi6** 248, **TFM1** 162; *Euonymus coriaceus* Ridl., **FMP5** 299; *Euonymus micropetalus* Ridl., **FMP5** 299; tree to 23 m tall; lowland and hill forest to 400 m; widespread.
- 73.5.4 **Euonymus wrayi** King, **FMP1** 446, **FMi6** 250, **TFM1** 162; *Euonymus rufulus* Ridl., **FMP1** 446; shrub or small tree to 5 m tall; montane forest; Kd, Tg, Pk, Ph, Sl.
- 73.6.1 **Glyptopetalum quadrangulare** Prain ex. King, **FMP1** 446, **FMi6** 257, **TFM1** 162; shrub or small tree to 5 m; lowland forest to 600 m; widespread.
- 73.6.2 **Glyptopetalum zeylanicum** Thwaites var. **brevipedicellatum** Ding Hou, **FMi6** 257, **TFM1** 162; small bushy tree; on limestone; variety only known from type, Kota Glanggi, Ph; endemic variety.
- 73.7.1 **Kokoona coriacea** King, **FMi6** 261, **TFM1** 164; *Lophopetalum coriacea* (King) Ridl., **FMP1** 450; tree 9–12 m tall; lowland forest; known only from type, Larut, Pk; endemic.
- 73.7.2 **Kokoona littoralis** Laws., **FMi6** 261, **TFM1** 164; *Lophopetalum dubium* Laws., **FMP1** 450; *Lophopetalum littoralis* (Laws.) Ridl., **FMP1** 450; *Lophopetalum maingayi* Ridl., **FMP1** 450; unbuttressed tree to 30 m tall; lowland and hill forest to 800 m; Kd, Tg, Ph, Sl, Jh.
- 73.7.3 **Kokoona ochracea** (Elmer) Merr., **FMi6** 260, **TFM1** 164; buttressed tree 25–40 m tall; lowland and hill forest to 800 m; Pk, Sl, NS, Jh.
- 73.7.4 **Kokoona reflexa** (Laws.) Ding Hou, **FMi6** 262, **TFM1** 164; *Lophopetalum reflexa* Laws., **FMP1** 449; magnificent buttressed tree to 48 m tall; lowland forest, frequent on ridges; Kd, Pk, Sl, Sp.
- 73.7.5 **Kokoona sessilis** Ding Hou, **FMi6** 261, **TFM1** 165; tree to 30 m tall with small buttresses; lowland forest; Kl, Tg, Jh; endemic.
- 73.8.1 **Loeseneriella cumingii** Laws., **FMi6** 399; scandent shrub; lowland forest; Sl, Ml.
- 73.8.2 **Loeseneriella macrantha** (Korth.) A.C. Sm., **FMi6** 398; *Hippocratea macrantha* Korth., **FMP1** 455; liana; lowland forest to 400 m, often near rivers, also in mangrove; Pk, Ph, Sl, Jh, Sp.
- 73.8.3 **Loeseneriella pauciflora** (DC.) A.C. Sm., **FMi6** 400; *Hippocratea nigricaulis* Ridl., **FMP1** 455; *Salacia perakensis* King, **FMP1** 457; shrub, more frequently liana; lowland forest to 840 m, also on limestone; Ps, Kl, Tg, Pn, Pk, Ph, Sl.

- 73.9.1 **Lophopetalum beccarianum** Pierre, **FMi6** 266, **TFM1** 165; *Lophopetalum scortechinii* King, **FMP1** 448; tree to 30 m tall; lowland forest; twice collected from Pk.
- 73.9.2 **Lophopetalum floribundum** Wight, **FMi6** 266, **TFM1** 167; unbuttressed tree to 25 m tall; lowland forest to 360 m; Kl, Pn, Pk, Ph, NS, Jh.
- 73.9.3 **Lophopetalum javanicum** (Zoll.) Turcz., **FMi6** 268, **TFM1** 168; *Lophopetalum fuscescens* Kurz, **FMP1** 448; *Lophopetalum oblongum* King, **FMP1** 448; *Lophopetalum intermedium* Ridl., **FMP1** 449; *Lophopetalum oblongifolium* King, **FMP1** 449; tree to 20 m tall; lowland forest, often near streams or in swamps; Kd, Tg, Pn, Pk, Ph, Jh.
- 73.9.4 **Lophopetalum multinervium** Ridl., **FMi6** 270, **TFM1** 168; tree to 35 m, often with short columnar pneumatophores; peat swamp forest; Pk, Ph, Jh, Sp.
- 73.9.5 **Lophopetalum pachyphyllum** King, **FMP1** 448, **FMi6** 267, **TFM1** 168; buttressed tree to 36 m tall; lowland forest to 400 m, usually on slopes; Kd, Pk, Sl, NS, Jh.
- 73.9.6 **Lophopetalum pallidum** Laws., **FMP1** 449 incl. var. *curtisii* (King) Ridl., **FMi6** 268, **TFM1** 168; tree to 45 m tall, sometimes buttressed; lowland forest to 300 m, usually on hill slopes; Kd, Pn, Sl, NS, MI, Jh.
- 73.9.7 **Lophopetalum subobovatum** King, **FMP1** 448, **FMi6** 272, **TFM1** 169; buttressed tree to 30 m tall; lowland forest to 400 m; Tg, Pn, Ph, Jh.
- 73.9.8 **Lophopetalum wightianum** Arn., **FMi6** 267, **TFM1** 169; *Lophopetalum fimbriatum* Wight, **FMP1** 448; buttressed tree to 45 m tall; hill forest near the sea; Ps, Kd, Pn, Sl, NS, MI, Sp.
- 73.10.1 **Maytenus curtisii** (King) Ding Hou, **FMi6** 240, **TFM1** 170; *Gymnosporia curtisii* King, **FMP1** 451; shrub or small tree; on limestone; Ps, P. Langkawi.
- 73.10.2 **Maytenus emarginata** (Willd.) Ding Hou, **FMi6** 241, **TFM1** 170; spiny shrub 2–4 m tall; mangroves or sea shore; Jh, Sp.
- 73.11.1 **Microtropis bivalvis** (Jack) Wall., **FMP1** 444, **FMi6** 276, **TFM1** 170; *Microtropis filiformis* King, **FMP1** 444; *Microtropis peduncularis* Ridl., **FMP5** 298; shrub or small tree to 7 m tall; lowland to montane forest, 300–1800 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl.
- 73.11.2 **Microtropis discolor** (Wall.) Wall., **FMP1** 444, **FMi6** 275, **TFM1** 170; shrub or small tree; hill forest at 600 m; Penang Hill.
- 73.11.3 **Microtropis elliptica** King, **FMP1** 444, **FMi6** 277, **TFM1** 170; *Microtropis ophirensis* Ridl., **FMP1** 444; shrub or small tree to 15 m tall; mostly lowland forest; Tg, Pn, Pk, Ph, MI, Jh.

- 73.11.4 **Microtropis tenuis** Symington, **FMi6** 275, **TFM1** 170; small tree; hill forest at 750 m; only known from type, Gg Tapis, Ph; endemic.
- 73.11.5 **Microtropis valida** Ridl., **FMP1** 445, **FMi6** 276, **TFM1** 170; shrub or small tree to 5 m tall; lowland to montane forest; Pk, Ph, Jh.
- 73.12.1 **Perrottetia alpestris** (Blume) Loes., **FMP1** 454, **FMi6** 290, **TFM1** 171; shrub or small tree to 8 m tall; common in montane forest above 900 m; widespread.
- 73.13.1 **Pleurostyliya opposita** (Wall.) Alston, **FMi6** 288, **TFM1** 171 '*Pleurostylis*'; *Pleurostyliya wightii* Wight & Arn., **FMP1** 453 '*Pleurostylis*'; tree to 15 m tall; coastal; P. Langkawi, Pn.
- 73.14.1 **Reissantia indica** (Willd.) N. Hallé, **FMi6** 401; *Hippocratea indica* Willd., **FMP1** 455; liana, sometimes shrubby; lowland forest to 650 m; Ps, Pn, Ph, Sp.
- 73.15.1 **Salacia chinensis** L., **FMi6** 419; *Salacia prinoides* DC., **FMP1** 459; *Salacia latifolia* Wall. ex Laws., **FMP1** 459; liana, scandent shrub or occasionally small tree; lowland forest to 450 m; widespread.
- 73.15.2 **Salacia euphlebica** Merr., **FMi6** 418; scandent shrub; lowland forest to 150 m; Pk, Sl.
- 73.15.3 **Salacia exsculpta** Korth., **FMi6** 417; *Salacia rubra* Laws., **FMP1** 460; *Salacia wrayi* King, **FMP1** 460; liana; lowland and hill forest to 1000 m; Pn, Pk, MI, Sp.
- 73.15.4 **Salacia grandiflora** Kurz, **FMP1** 458, **FMi6** 413; *Salacia scortechinii* King, **FMP1** 457; *Maba hierniana* King & Gamble, **FMP2** 279; liana or scandent shrub, more rarely small tree; lowland forest to 750 m; widespread.
- 73.15.5 **Salacia korthalsiana** Miq., **FMP1** 457, **FMi6** 406; *Hippocratea obtusa* Ridl., **FMP5** 299; liana to 18 m long, sometimes shrubby; forest margins; Ph, Jh, Sp.
- 73.15.6 **Salacia macrophylla** Blume, **FMi6** 412; *Salacia flavescens* Kurz, **FMP1** 459; *Salacia prinoides* DC. var. *macrophylla* (Blume) King, **FMP1** 459; liana sometimes shrubby; lowland and hill forest to 1200 m, also in open country; widespread.
- 73.15.7 **Salacia maingayi** Laws., **FMP1** 461, **FMi6** 417; shrubby creeper; lowland forest to 300 m; Pn, Pk, MI, Sp.
- 73.15.8 **Salacia oblongifolia** Blume, **FMi6** 408; *Salacia campanuloidea* King, **FMP1** 457; liane reaching to 30 m high; lowland and hill forest to 1000 m, in swamps also; Pn, Pk, Jh.

- 73.15.9 **Salacia verrucosa** Wight, **FMP1** 459, **FMi6** 414; *Salacia kunstleri* King, **FMP1** 460; liana, sometimes shrub or small tree to 6 m tall; lowland and hill forest; P. Langkawi, Kl, Pk, Ph.
- 73.15.10 **Salacia viminea** Wall *ex* Laws., **FMP1** 456, **FMi6** 418; scandent shrub; lowland forest; Tg, Pk, Ph, Sp.
- 73.16.1 **Siphonodon celastrineus** Griff., **FMi6** 394; **TFM1** 171; tree to 35 m tall; lowland and hill forest; Pn and Ulu Langat, Sl.

## 74. CHLORANTHACEAE

- 74.1.1 **Chloranthus erectus** (Buch.-Ham.) Verdc., **FMi10** 131; *Chloranthus officinalis* Blume, **FMP3** 52; shrub to 3 m tall; lowland and hill forest; Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 74.2.1 **Sarcandra glabra** (Thunb.) Nakai ssp. **brachystachys** (Blume) Verdc., **FMi10** 136; *Chloranthus brachystachys* Blume, **FMP3** 53; shrub 0.6–3 m tall; hill and montane forest; Pn, Pk, Ph, Sl.

## 75. CHRYSOBALANACEAE

- 75.1.1 **Atuna latifrons** (Kosterm.) Prance & F. White, **FMi10** 666; *Parinariium latifolium* (*non* Exell) M.R. Hend., **H35** 102; *Atuna latifolia* (M.R. Hend.) Kosterm. *nom. inval.*; **TFM2** 324; shrub to 5 m tall; only known from type; Kd/Pk border; endemic.
- 75.1.2 **Atuna nannodes** (Kosterm.) Kosterm., **TFM2** 325, **FMi10** 667; tree to 20 m tall; lowland and hill forest to 750 m; Pn, Tg, Pk, Ph, NS, Jh.
- 75.1.3 **Atuna penangiana** (Kosterm.) Kosterm., **TFM2** 326, **FMi10** 667; tree to 20 m tall; lowland and hill forest to 600 m; Pn, Kl, Tg, Pk, Jh; endemic.
- 75.1.4a **Atuna racemosa** Raf. ssp. **excelsa** (Jack) Prance, **FMi10** 670; *Parinariium maingayi* King, **FMP1** 669; *Parinariium spicatum* King, **FMP1** 669; *Parinariium asperulum* Miq., **FMP1** 670; *Atuna excelsa* (Jack) Kosterm., **TFM2** 324; tree to 45 m tall; lowland and hill forest to 750 m; Kd and Tg southward.
- 75.1.4b **Atuna racemosa** Raf. ssp. **racemosa**, **FMi10** 669; *Parinariium elatum* King, **FMP1** 669; *Parinariium scabrum* Hassk., **FMP1** 669; *Atuna elata* (King) Kosterm., **TFM2** 324; tree to 45 m tall; lowland and hill forest to 600 m; Pk (thrice).
- 75.2.1 **Chrysobalanus icaco** L., **FMi10** 643; shrub to 5 m tall; coastal scrub; St John's Island, Sp; naturalized from tropical America.

- 75.3.1 **Kostermanthus heteropetalus** (Scort. ex King) Prance, **TFM2** 328, **FM10** 677; *Parinarium heteropetalum* Scort. ex King, **FMP1** 670; *Parinarium kunstleri* King, **FMP1** 670; tree to 36 m tall, lowland forest; Pk, Jh.
- 75.3.2 **Kostermanthus malayanus** (Kosterm.) Prance, **FM10** 677; tree to 10 m tall; known only from type; Pn; endemic.
- 75.4.1 **Licania splendens** (Korth.) Prance, **TFM2** 329, **FM10** 646; *Coccomelia nitida* (Hook.f.) Ridl., **FMP1** 671; tree to 15 m tall; lowland forest; throughout.
- 75.5.1 **Maranthes corymbosa** Blume, **TFM2** 330, **FM10** 673; *Parinarium griffithianum* Benth., **FMP1** 670; tree to 39 m tall; mostly coastal, but also in the mountains; Ps, Kd, Pn, Kl, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 75.6.1 **Parastemon urophyllus** (Wall. ex A. DC.) A. DC., **FMP1** 672, **TFM2** 331, **FM10** 649; tree to 36 m tall; lowland forest; throughout.
- 75.7.1a **Parinari costata** (Korth.) Blume ssp. *costata*, **FMP1** 666, **TFM2** 333, **FM10** 663; tree to 50 m tall; lowland forest; only absent from far north.
- 75.7.1b **Parinari costata** (Korth.) Blume ssp. *polyneura* (Miq.) Prance, **FM10** 664; *Parinari polyneura* Miq., **FMP1** 668, **TFM2** 336; tree to 24 m tall; lowland forest; Kd, Kl, Ph, Sl.
- 75.7.1c **Parinari costata** (Korth.) Blume ssp. *rubiginosa*, (Ridl.) Prance; **FM10** 663; *Parinari rubiginosa* Ridl., **FMP1** 668, **TFM2** 336; tree to 36 m tall; lower montane forest at 750–1500 m; Kl, Pk, Ph, Jh.
- 75.7.2 **Parinari elmeri** Merr., **TFM2** 335, **FM10** 657; tree to 32 m tall; lowland and hill forest to 600 m; Sl, MI, Jh.
- 75.7.3 **Parinari oblongifolia** Hook.f., **FMP1** 668, **TFM2** 335, **FM10** 659; tree to 40 m tall; lowland forest; Kl to Jh.
- 75.7.4 **Parinari parva** Kosterm., **TFM2** 335, **FM10** 657; tree to 15 m tall; lowland and hill forest, often on ridges; Kl, Tg, Ph, Jh.
- 75.7.5 **Parinari rigida** Kosterm., **TFM2** 336, **FM10** 660; tree to 30 m tall; lowland forest, sometimes swamps; Kl, Tg, Ph, NS, Jh, Sp.

## 76. CLETHRACEAE

- 76.1.1 **Clethra hendersonii** Sleumer, **FM17** 143, **TFM2** 27; *Clethra canescens* auct. non Reinw. ex Blume, **FMP2** 222; small tree to 8 m tall; montane forest at 1340–1740 m; Cameron Highlands and Gg Tahan, Ph, and Gg Nuang, Sl; endemic.
- 76.1.2 **Clethra symingtonii** Sleumer, **FM17** 144, **TFM2** 27; shrub; exposed mountain ridge at 1830 m; known only from type, Gg Korbu, Pk; endemic.

77. COMBRETACEAE
- 77.1.1 **Combretum acuminatum** Roxb., **FMP1** 708, **FMi4** 538; scandent shrub; lowland forest; north of Malaya.
- 77.1.2 **Combretum latifolium** Blume, **FMi4** 542; *Combretum extensum* Roxb. ex Don, **FMP1** 709; scandent shrub or liana reaching to 30 m; lowland forest; scattered.
- 77.1.3 **Combretum nigrescens** King, **FMP1** 710 incl. var. *kunstleri* (King) Ridl., **FMi4** 538; *Combretum scortechinii* King, **FMP1** 710; woody climber 10–20 m long; lowland forest; quite widespread.
- 77.1.4 **Combretum perakense** M.G. Gangop. & Chakrab., **G03** 687; scandent shrub; lowland forest; Pk, Sl; endemic.
- 77.1.5 **Combretum porterianum** (C.B. Clarke) Wall. ex Craib, **FMi4** 540; *Combretum chinense* Roxb. var. *porterianum* C.B. Clarke, **FMP1** 709; scandent shrub; forest margins, limestone cliffs; Pn, Ph.
- 77.1.6 **Combretum punctatum** Blume ssp. *squamosum* (Roxb. ex Don) Exell, **FMi4** 539; *Combretum squamosum* Roxb. ex Don, **FMP1** 709; scandent shrub or liana; lowland primary and secondary forest; scattered.
- 77.1.7 **Combretum sundaicum** Miq., **FMP1** 708, **FMi4** 542; scandent shrub or liana to 30 m long; lowland forest to 250 m; widespread.
- 77.1.8 **Combretum tetralophum** C.B. Clarke, **FMP1** 708, **FMi4** 541; *Combretum wrayi* King, **FMP1** 710; scandent shrub or large liana; mangroves and riverside forest; scattered.
- 77.1.9 **Combretum trifoliatum** Vent., **FMP1** 708, **FMi4** 537; climbing or scrambling shrub 2–5 m tall; along river banks or in seasonally flooded forest; Ps.
- 77.1.10 **Combretum yunnanense** Exell, **FMi4** 540; *Combretum chinense* Roxb. var. *pubescens* King, **FMP1** 709; scandent shrub or large climber; poorly known.
- 77.2.1 **Getonia floribunda** Roxb., **FMi4** 584 in synonymy; *Calycopteris floribunda* (Roxb.) Lam., **FMP1** 706, **FMi4** 584, **TFM1** 172; scrambling shrub; lowland forest; P. Langkawi, Pn, Ph.
- 77.3.1 **Lumnitzera littorea** (Jack) Voigt, **FMi4** 586, **TFM1** 174; *Lumnitzera coccinea* Wight & Arn., **FMP1** 707; red-flowered tree to 30 m with kneed pneumatophores; back mangroves, sandy shores; all coasts.
- 77.3.2 **Lumnitzera racemosa** Willd., **FMP1** 707, **FMi4** 589, **TFM1** 173; white-flowered tree to 8 m tall without pneumatophores; mangroves; all coasts but commoner on the East.

- 77.4.1 **Quisqualis conferta** (Jack) Exell, **FMi4** 545; *Quisqualis densiflora* Wall. ex Miq., **FMP1** 711; woody climber; lowland forest; widespread.
- 77.4.2 **Quisqualis indica** L., **FMP1** 711, **FMi4** 547; woody climber; forest margins, riverbanks, often cultivated; possibly wild in the north.
- 77.4.3 **Quisqualis parvifolia** (Ridl.) Exell, **FMi4** 545; *Quisqualis densiflora* var. *parvifolia* Ridl., **FMP1** 711; woody climber, P. Langkawi.
- 77.5.1 **Terminalia bellirica** (Gaertn.) Roxb., **FMP1** 704 'belerica', **FMi4** 569, **TFM1** 175; tree to 25m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, NS.
- 77.5.2 **Terminalia calamansanai** (Blanco) Rolfe, **FMi4** 556, **TFM1** 175; *Terminalia bialata* (non Steud.) King, **FMP1** 705; tree to 30 m tall; lowland forest; Ps, P. Langkawi, Kd.
- 77.5.3 **Terminalia catappa** L., **FMP1** 705, **FMi4** 566, **TFM1** 176; pagoda tree 10–35 m tall; sandy and rocky shores, widely planted shade tree; all coasts.
- 77.5.4 **Terminalia citrina** (Gaertn.) Roxb. ex Fleming, **FMP1** 703 incl. var. *malayana* C.B. Clarke, **FMi4** 555, **TFM1** 176; spreading tree 20–30 m tall; lowland forest; widespread.
- 77.5.5 **Terminalia foetidissima** Griff., **FMP1** 704, **FMi4** 577, **TFM1** 176; tree to 30 m tall; lowland forest; Sl, NS, Ml.
- 77.5.6 **Terminalia phellocarpa** King, **FMP1** 705, **FMi4** 579, **TFM1** 178; tree to 30 m tall; swampy or alluvial forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 77.5.7 **Terminalia subspathulata** King, **FMP1** 705, **FMi4** 558, **TFM1** 178; large tree to 45 m tall; lowland forest; Pk southwards.
- 77.5.8 **Terminalia triptera** Stapf, **FMP1** 706, **FMi4** 554, **TFM1** 178; small tree 3–10 m tall; low open forests on limestone, quartzite or shale; P. Langkawi, mainland Kd.

## 78. COMPOSITAE

- 78.1.1 **Acanthospermum australe** (Loefl.) Kuntze, **K09** 166; *Acanthospermum brasiliium* Schrank, **FMP2** 181; prostrate herb; weed in and about towns; Sp; naturalized from tropical America.
- 78.2.1 **Acmella paniculata** (Wall. ex DC.) R.K. Jansen, **J05** 67; *Spilanthes paniculata* Wall. ex DC., **M47** 104; herb; moist grassy places, roadsides; Pn, Kl, Pk, Ph, Ml, Sp.
- 78.2.2 **Acmella uliginosa** (Sw.) Cass., **S31** 287, **J05** 55; *Spilanthes acmella* (non L.) Murr., **FMP2** 184; *Spilanthes iabadicensis* A.H. Moore, **G20** 221, **M47** 102; herb to 40 cm tall; common weed; throughout.



- 78.3.1 **Adenostemma viscosum** J.R. Forst. & G. Forst., **FMP2** 182, **S28** 292; *Adenostemma lavenia* auctt., non (L.) Kuntze, **G20** 139; herb to 60 cm tall; damp waste ground; widespread.
- 78.4.1 **Ageratum conyzoides** L., **FMP2** 182, **J18** 26, **S31** 296, **M47** 60; herb to 1 m tall; weed of cultivation, waste ground; naturalized from tropical America.
- 78.5.1 **Ainsliaea latifolia** (D. Don) Sch.Bip. ssp. **henryi** (Diels) H. Koyama, **K64** 60; *Ainsliaea reflexa* Merr., **H35** 108; herb; once from the Cameron Highlands, Ph.
- 78.6.1 **Bidens pilosa** L., **FMP2** 183, **G20** 227, **M47** 64, **S31** 281; erect herb to 50 cm tall; open damp spots; widespread.
- 78.7.1 **Blumea balsamifera** (L.) DC., **FMP2** 192, **R03** 237; shrub to 4 m tall; open places, lowlands and hills; widespread.
- 78.7.2 **Blumea clarkei** Hook.f., **R03** 252; herb to 2 m tall; in the hills.
- 78.7.3 **Blumea densiflora** DC., **R03**; herb to 1.8 m tall; hill forest; Wallich type from Pn, ? wrongly localised.
- 78.7.4 **Blumea junghuhnii** (Miq.) Boerl., **R03** 235; shrub; mostly in the hills; scattered.
- 78.7.5 **Blumea lacera** (Burm.f.) DC., **FMP2** 193, **R03** 264, **M47** 66; herb to 1 m tall; common roadside weed; widespread.
- 78.7.6 **Blumea membranacea** DC., **FMP2** 193, **R03** 269; herb to 1.5 m tall; open places; widespread.
- 78.7.7 **Blumea napifolia** DC., **R03** 269; herb to 70 cm tall; open grassy areas.
- 78.7.8 **Blumea riparia** (Blume) DC., **R03** 213; *Blumea chinensis* DC., **FMP2** 192 incl. var. *riparia* King; scandent shrub; open places, often near streams; widespread.
- 78.7.9 **Blumea sinuata** (Lour.) Merr., **F15** 25; *Blumea laciniata* (Roxb.) DC., **R03** 258; herb to 1.8 m tall; roadsides and clearings in the lowlands and hills.
- 78.7.10 **Blumea virens** DC., **R03** 272; herb to 1.8 m tall; dry open places; once collected, location uncertain.
- 78.8.1 **Centipeda minima** (L.) A. Braun & Asch., **G20** 235, **M47** 70, **S31** 314; *Centipeda orbicularis* Lour., **FMP2** 195; small prostrate herb; waste ground, paddy-fields; widespread.
- 78.9.1 **Chromolaena odorata** (L.) R.M. King & H. Rob., **K51** 204, **F15** 25; *Eupatorium odoratum* L., **V14** 478, **G20** 143, **M47** 86; erect or sprawling herb; forest margins and clearings; widespread; naturalized from tropical America.

- 78.10.1 **Complaya chinensis** (L.) Strother, **S71** 14; *Wedelia chinensis* (L.) Merr., **G20** 215, **V21** 400, **N11** 69; creeping herb; damp places near the sea; once from Tg.
- 78.10.2 **Complaya trilobata** (L.) Strother, **S71** 14; *Wedelia trilobata* (L.) Hitch., **K09** 171, **F15** 61; creeping herb; waste ground; Sp; naturalized from tropical America.
- 78.11.1 **Conyza bonariensis** (L.) Cronquist, **G20** 158, **S31** 307; *Erigeron sumatrensis* Retz., **FMP2** 196, **M47** 84; *Conyza floribunda* Kunth, **G20** 157; herb to 2 m tall; clearings and waste ground; widespread.
- 78.11.2 *Erigeron oreophilus* (non Greenm.) Ridl., **FMP2** 196 'oreophilum'; herb to 50 cm tall; Gg Kerbau, Pk only known from type; endemic.
- 78.12.1 **Crassocephalum crepidioides** (Benth.) S. Moore, **G20** 248, **C26** 661, **M47** 72, **S31** 317; herb to 50 cm tall; weed of cultivation; Sp; naturalized from tropical Africa.
- 78.13.1 **Dichrocephala integrifolia** (L.f.) Kuntze, **G20** 149, **M47** 74, **S31** 300; *Dichrocephala latifolia* (Desf.) L'Hér. ex DC., **FMP2** 194; herb to 60 cm tall; open damp places in lowlands and hills; Pn, Pk, Ph.
- 78.14.1 **Eclipta prostrata** (L.) L., **G20** 212, **M47** 76, **S31** 274; *Eclipta alba* (L.) Hassk., **FMP2** 185; slender erect or prostrate herb; damp waste ground; widespread.
- 78.15.1 **Elephantopus mollis** Kunth, **K52** 131, **S31** 260; herb to 40 cm tall; waste ground in the hills; Penang Hill and Fraser's Hill, Ph; naturalized from tropical America.
- 78.15.2 **Elephantopus scaber** L., **FMP2** 180; rhizomatous herb to 50 cm tall; open grassland and lawns; common throughout.
- 78.15.3 **Elephantopus tomentosus** L., **FMP2** 180; herb to 1 m tall; roadside weed; scattered; naturalized from tropical America.
- 78.16.1 **Eleutheranthera ruderalis** (Sw.) Sch.Bip., **M31** 133 'Eleuranthera', **G20** 217, **C26** 661, **M47** 78, **S31** 275; erect herb to 75 cm tall; waste ground; Sp; naturalized from tropical America.
- 78.17.1 **Emilia sonchifolia** (L.) DC., **FMP2** 191, **G20** 251, **M47** 80, **S31** 318; herb to 30 cm tall; weed of cultivation, waste ground; throughout.
- 78.18.1 **Enydra fluctuans** Lour., **FMP2** 183, **L01** 4, **M47** 82; scrambling herb; wet muddy places; scattered.
- 78.19.1 **Epaltes australis** Less., **FMP2** 195, **F15** 41; low tufted herb; Kl, Tg.

- 78.20.1 **Erechtites hieraciifolia** (L.) Raf. ex DC., **B17** 13; *Gynura malasica* (Ridl.) Ridl., **FMP2** 191, **D07** 716; herb to 1 m tall; waste ground; widespread; naturalized for tropical America.
- 78.20.2 **Erechtites valerianifolia** (Wolf) DC., **FMP2** 191, **B17** 25, **G20** 243, **S31** 315; herb to 1.5 m tall; waste ground; widespread; naturalized from tropical America.
- 78.21.1 **Galinsoga parviflora** Cav., **K52** 136, **M47** 88; herb; waste ground in the hills; Fraser's Hill and Cameron Highlands, Ph; naturalized from America.
- 78.22.1 **Grangea maderaspatana** (L.) Poir., **FMP2** 195, **G20** 150, **M47** 90; prostrate herb; weed of paddy-fields; Ps.
- 78.23.1 **Gynura malaccensis** Belcher, **B18** 538; herb to 1 m tall; MI; endemic.
- 78.23.2 **Gynura procumbens** (Lour.) Merr., **D07** 717; *Gynura sarmentosa* (Blume) DC., **FMP2** 189; climbing herb; lowland and hill forest to 1000 m; widespread.
- 78.24.1 **Microglossa pyrifolia** (Lam.) Kuntze, **K65** 6; *Microglossa volubilis* DC., **FMP2** 196; shrubby climber; clearings in the hills; widespread.
- 78.25.1 **Mikania cordata** (Burm.f.) B.L. Rob., **G20** 146, **H40** 228; *Mikania scandens auct. non* (L.) Willd., **FMP2** 181; twining herb; forest margins, waste places; throughout.
- 78.25.2 **Mikania micrantha** Kunth, **C23** 661, **H40** 233, **M47** 92, **S31** 297; twining herb; forest margins, waste ground; Sp; naturalized from South America.
- 78.26.1 **Pluchea indica** (L.) Less., **FMP2** 194, **F15** 47; shrub to 1.5 m tall; common in tidal swamps; throughout.
- 78.27.1 **Porophyllum ruderales** (Jacq.) Cass., **V21** 400, **T05** 129, **M47** 94; erect herb; open sandy waste ground; Sp; naturalized from tropical America.
- 78.28.1 **Pseudognaphalium affine** (D. Don) Anderb., **A12** 146; *Gnaphalium affine* D. Don, **K52** 136, **S53** 79; *Pseudognaphalium luteo-album* (L.) Hilliard & B.L. Burtt ssp. *affine* (D. Don) Hilliard & B.L. Burtt, **H39** 206; herb; roadsides, weed of cultivation in hill resorts; Cameron Highlands, Genting Highlands, Ph; naturalized from Europe/Continental Asia.
- 78.29.1 **Sigesbeckia orientalis** L., **FMP2** 184, **G20** 210, **S31** 269; erect herb to 1.5 m tall; waste ground, garden weed; scattered.
- 78.30.1 **Sonchus oleraceus** L., **S28** 265, **T19** 126; herb to 1 m tall; weed of cultivation; Cameron Highlands, Ph; naturalized from temperate Eurasia.
- 78.31.1 **Sphaeranthus africanus** L., **FMP2** 180, **M47** 98; spreading herb; damp waste ground; widespread; naturalized from Africa.

- 78.32.1 ***Spilanthes anactina*** F. Muell.; **J04** 248; *Spilanthes urens auct. non* Jacq., **K14** 275; creeping herb to 40 cm tall; once from Jason's Bay, Jh.
- 78.33.1 ***Struchium sparganophorum*** (L.) Kuntze, **G20** 120, **S31** 259; *Sparganophorus vaillantii* Crantz, **FMP2** 179; herb to 75 cm tall; river banks and ditches; naturalized from tropical America.
- 78.34.1 ***Synedrella nodiflora*** (L.) Gaertn., **FMP2** 184, **G20** 222, **S31** 276, **M47** 106; herb to 1.5 m tall; common weed; widespread; naturalized from the Caribbean.
- 78.35.1 ***Tridax procumbens*** L., **FMP2** 186, **G20** 232, **M47** 108, **S31** 288; herb to 30 cm tall; weed of lawns, waste ground; widespread; naturalized from tropical America.
- 78.36.1 ***Vernonia arborea*** Buch.-Ham, **TFM4** 70; *Vernonia wallichii* Ridl., **FMP2** 186; *Vernonia javanica* (Blume) DC., **FMP2** 187 incl. var. *mollissima* Ridl.; tree to 20 m tall; lowland and hill forest to 1500 m; Kd, Pk and Kl southwards.
- 78.36.2 ***Vernonia attenuata*** DC., **FMP2** 187; herb to 60 cm tall; near the sea; P. Langkawi.
- 78.36.3 ***Vernonia cinerea*** (L.) Less., **FMP2** 188, **G20** 133, **M47** 110, **S31** 262; herb rarely more than 30 cm tall; common and ubiquitous weed; throughout.
- 78.36.4 ***Vernonia curtisii*** Craib & Hutch., **FMP2** 189, **C14** 109; herb to 1 m tall; on limestone; P. Langkawi.
- 78.36.5 ***Vernonia eleagnifolia*** DC., **FMP2** 187; drooping shrub; open places and river banks; widespread.
- 78.36.6 ***Vernonia patula*** (Dryand.) Merr., **F15** 60; *Vernonia chinensis auct. non* (L.) Less., **FMP2** 188; wiry spreading herb; waste places; widespread.
- 78.36.7 ***Vernonia rupicola*** Ridl., **FMP2** 189, **C14** 109; herb with slightly woody base, to 1 m tall; on limestone; P. Langkawi; endemic.
- 78.37.1 ***Wollastonia biflora*** (L.) DC., **S31** 271; *Wedelia biflora* (L.) DC., **FMP2** 185, **G20** 216; scrambling herb; common in tidal mud; widespread.
- 78.38.1 ***Youngia japonica*** (L.) DC., **G20** 268, **S31** 267; *Crepis japonica* (L.) Benth., **FMP2** 197; herb to 60 cm tall; grassy banks; widespread.

## 79. CONNARACEAE

- 79.1.1 ***Agelaea borneensis*** (Hook.f.) Merr., **FM15** 504, **TFM3** 48, **J19** 166; *Agelaea vestita* Hook.f., **FMP1** 553; big liana or scrambling shrub; lowland forest to 700 m; widespread.

- 79.1.2 **Agelaea macrophylla** (Zoll.) Leenh., **FMi5** 502, **TFM3** 48, **J19** 48; *Agelaea hullettii* King, **FMP1** 553; *Agelaea wallichii* Hook.f., **FMP1** 553; *Agelaea trinervis* (Llanos) Merr., **FMi5** 502, **TFM3** 48; big woody climber with stems to 5 cm thick; lowland forest to 700 m; widespread.
- 79.2.1 **Cnestis palala** (Lour.) Merr., **L18** 215; *Cnestis ramiflora* Griff., **FMP1** 554; *Cnestis palala* ssp. *diffusa* (Blanco) Andreas, **FMi5** 499, **TFM3** 48; *Cnestis platantha* Griff., **FMi5** 499, **TFM3** 48; liana to 25 m long, scrambling shrub or small tree to 10 m tall; open country or lowland forest; Kd, Kl, Pn, Pk, Sl, Jh, Sp.
- 79.3.1 **Connarus cochinchinensis** (Baill.) Pierre, **FMi5** 536, **TFM3** 49; liana or treelet; lowland forest or scrub; north of Malaya.
- 79.3.2 **Connarus euphlebius** Merr., **H35** 99, **FMi5** 527, **TFM3** 49; liane reaching to 25 m, or scandent shrub; lowland forest to 600 m; P. Tioman, Ph.
- 79.3.3 **Connarus ferrugineus** Jack, **FMP1** 545, **FMi5** 530, **TFM3** 49; liana to 25 m high, sometimes erect shrub or small tree; open country, lowland forest margins; widespread, common on West Coast; endemic.
- 79.3.4 **Connarus grandis** Jack, **FMi5** 529, **TFM3** 49; *Connarus ellipticus* King, **FMP1** 547; liane reaching 30 m high, or small tree; open country or forest margins to 1200 m; widespread.
- 79.3.5 **Connarus monocarpus** L. ssp. *malayensis* Leenh., **FMi5** 538, **TFM3** 50; *Connarus oligophyllus* Wall. ex Planch., **FMP1** 546 incl. var. *maingayi* (Hook.f.) Ridl.; liane to 25 m, shrub or small tree; lowland forest, edges, clearings to 600 m; widespread.
- 79.3.6 **Connarus odoratus** Hook.f., **FMi5** 533, **TFM3** 49; *Connarus villosus* auct. non Jack, **FMP1** 547; scandent shrub or big liana to 35 m high; lowland forest to 450 m; Pk.
- 79.3.7 **Connarus paniculatus** Roxb., **FMi5** 533, **TFM3** 49; liana; lowland forest; Jh.
- 79.3.8 **Connarus planchonianus** Schellenb., **FMi5** 528, **TFM3** 49; *Connarus grandis* (non Jack) Hook.f., **FMP1** 547; liana reaching to 30 m high, sometimes shrubby; lowland forest to 300 m; Pn to Sp.
- 79.3.9 **Connarus semidecandrus** Jack, **FMP1** 546, **FMi5** 534, **TFM3** 49; *Connarus griffithii* Hook.f., **FMP1** 546; large liana, sometimes shrub or small tree; common in open country; widespread.
- 79.3.10 **Connarus sp. A**, **TFM3** 49; liana; lowland forest; once each from Kl and Ph.

- 79.4.1a **Ellipanthus tomentosus** Kurz ssp. **tomentosus** var. **gibbosus** (King) Leenh., **FMi5** 523, **TFM3** 51; *Ellipanthus gibbosus* King, **FMP1** 549; shrub or small tree to 10 m tall; lowland and hill forest; widespread.
- 79.4.1b **Ellipanthus tomentosus** Kurz ssp. **tomentosus** var. **tomentosus**, **FMi5** 523, **TFM3** 50; *Ellipanthus curtisii* King, **FMP1** 548; *Ellipanthus griffithii* Hook.f., **FMP1** 548; shrubs or small trees, occasionally to 30 m tall; lowland and hill forest; widespread.
- 79.5.1 **Rourea acutipelata** Miq., **J20** 367; *Taeniochlaena griffithii* Hook.f., **FMP1** 554; *Roureopsis acutipetala* (Miq.) Leenh., **FMi5** 509, **TFM3** 52; climbing shrub; lowland forest; Pk, Ml, Jh.
- 79.5.2 **Rourea asplenifolia** (Schellenb.) Jongkind, **J20** 366; *Roureopsis asplenifolia* Schellenb., **FMi5** 506, **TFM3** 52; large liana; lowland forests and forest margins; rare.
- 79.5.3 **Rourea dictyophylla** Jongkind, **J20** 366; *Agelaea pinnata* King, **FMP1** 553; *Roureopsis pinnata* (King) Leenh., **FMi5** 510, **TFM3** 52; liana; lowland forest; once from Larut, Pk.
- 79.5.4 **Rourea emarginata** (Jack) Jongkind, **J20** 367; *Roureopsis pubinervis* Planch., **FMP1** 552; *Roureopsis scortechinii* King, **FMP1** 552; *Roureopsis emarginata* (Jack) Merr., **FMi5** 508, **TFM3** 52; liane reaching to 25 m, sometimes shrubby; lowland and hill forest; Pn, Pk, Sl, Ml.
- 79.5.5 **Rourea fulgens** Planch., **FMP1** 551, **FMi5** 519, **TFM3** 51; liana or climbing shrub; lowland forest; Sl, NS, Jh, Sp.
- 79.5.6 **Rourea mimosoides** (Vahl) Planch., **FMi5** 517, **TFM3** 51; *Rourea concolor* Blume, **FMP1** 551; *Rourea similis* Blume, **FMP1** 551; liane to over 50 m long; lowland and hill forest to 750 m; throughout.
- 79.5.7 **Rourea minor** (Gaertn.) Leenh., **FMi5** 514, **TFM3** 51; *Rourea anomala* King, **FMP1** 549; *Rourea acuminata* Hook.f., **FMP1** 550; *Rourea humilis* Blume, **FMP1** 550; *Rourea pulchella* Planch., **FMP1** 550; *Connaropsis rubescens* Ridl., **FMP5** 294; liana, occasionally shrubby; lowland to montane forest; throughout.
- 79.5.8 **Rourea prainiana** Talbot, **FMi5** 520, **TFM3** 51; scandent shrub or small tree; montane forest at about 1500 m; Pk, Ph.
- 79.5.9 **Rourea rugosa** Planch., **FMP1** 550, **FMi5** 514, **TFM3** 51; liane climbing to 25 m; lowland and hill forest; widespread; endemic.

80. CONVOLVULACEAE
- 80.1.1 **Aniseia martinicensis** (Jacq.) Choisy, **FMi4** 435, **TFM4** 73; twining or prostrate vine; swamp grassy places; widespread; naturalized from tropical America.
- 80.2.1 **Argyreia adpressa** (Choisy) Boerl., **FMi4** 501; *Lettsomia adpressa* (Choisy) Miq., **FMP2** 451; twining liana to 20 m high; hill forest; P. Langkawi, Kd, Pn, Pk, Sl.
- 80.2.2 **Argyreia capitata** (Vahl) Choisy, **FMi4** 502; *Lettsomia peguensis* C.B. Clarke, **FMP2** 450; liana twining to 15 m high; forests and forest margins, lowlands and mountains; P. Langkawi, Pn, Kl, Pk, Ph, Sl, NS.
- 80.2.3 **Argyreia corneri** Hoogl., **FMi4** 504; liana twining to 15 m high; Ulu Bendong, Ph; endemic.
- 80.2.4 **Argyreia kunstleri** (Prain) Prain ex Ooststr., **FMi4** 505; *Lettsomia curtisii* Prain, **FMP2** 451; *Lettsomia kunstleri* Prain, **FMP2** 453; liana twining to 30 m high; lowland and hill forest to 700 m; Pk, Sl, MI, NS; endemic.
- 80.2.5 **Argyreia maingayi** (C.B. Clarke) Hoogl., **FMi4** 502; *Lettsomia maingayi* C.B. Clarke, **FMP2** 450; twining liana; swampy forest margins to 1000 m; Ph, Sl, MI, Jh; endemic.
- 80.2.6 **Argyreia mollis** (Burm.f.) Choisy, **FMP2** 449, **FMi4** 496; twining liana to 10 m high; secondary forest and waste places, sometimes on limestone; Ps, P. Langkawi, Kd.
- 80.2.7 **Argyreia ooststroomii** Hoogl., **FMi4** 504; twining liana; secondary forest margins; Kl, Tg; endemic.
- 80.2.8 **Argyreia penangiana** (Wall. ex Choisy) Boerl., **FMi4** 500; *Lettsomia penangiana* (Wall. ex Choisy) Miq., **FMP2** 451; slender twining liana to 3 m tall; lowland to montane forest at 1700 m; Pn, Pk; endemic.
- 80.2.9a **Argyreia reticulata** (Prain) Hoogl. var. **microcalyx** Hoogl., **FMi4** 504; twining liana to 10 m high; forest margins; Sl; endemic.
- 80.2.9b **Argyreia reticulata** (Prain) Hoogl. var. **reticulata**, **FMi4** 504; *Lettsomia penangiana* (Choisy) Miq. var. *reticulata* Prain, **FMP2** 452; twining liana to 10 m high; forest clearings to 1400 m; Pk, Ph, Sl; endemic.
- 80.2.10 **Argyreia ridleyi** (Prain) Prain ex Ooststr., **FMi4** 503; *Lettsomia ridleyi* Prain, **FMP2** 451 incl. var. *velutina* Prain; twining liana; damp lowland and hill forest to 600 m; Tg, Pk, Ph, Sl, NS, Jh, Sp.
- 80.2.11 **Argyreia rubicunda** Choisy, **FMi4** 506; *Lettsomia rubicunda* (Choisy) C.B. Clarke, **FMP2** 453; twining liana; lowland forest; NS, MI; endemic.

- 80.2.12 **Argyreia scortechinii** (Prain) Hoogl., **FM14** 500; *Lettsomia scortechinii* Prain, **FMP2** 452; montane forests at 1300–1500 m; Pk, Ph; endemic.
- 80.2.13 **Argyreia sphaerocephala** (Prain) Hoogl., **FM14** 503; *Lettsomia sphaerocephala* Prain, **FMP2** 450; twining liana; only known from Pk; endemic.
- 80.3.1 **Bonamia semidygyna** (Roxb.) Hallier f., **FMP2** 454, **FM14** 398; twining liana to 15 m tall; forest margins in the lowlands; widespread.
- 80.4.1 **Cuscuta australis** R.Br., **FM14** 392; *Cuscuta hygrophilae* H. Pearson, **FMP2** 444; greenish-yellow to orange leafless twining parasitic vine; waste and cultivated ground; widespread.
- 80.5.1 **Erycibe aenea** Prain, **FMP2** 446, **FM14** 424, **TFM4** 76; stout liana to 50 m long; lowland forest; Kl, Pk, Ph, Sl, Jh.
- 80.5.2 **Erycibe albida** Prain, **FM14** 414, **TFM4** 77; *Erycibe glomerata* (non Blume) Prain, **FMP2** 447 incl. var. *longifolia* (non Blume) Prain, shrub or small tree to 7 m tall; lowland and hill forest to 820 m; Kd, Kl, Pk, Ph, Sl, NS, MI, Jh.
- 80.5.3 **Erycibe citriniflora** Griff., **FMP2** 445, **FM14** 425, **TFM4** 75; liana or scrambling shrub; lowland forest; Kd, Pn, Tg, Sl, Jh, Sp.
- 80.5.4 **Erycibe expansa** Wall. ex G. Don, **FMP2** 445, **FM14** 426, **TFM4** 76; liana or scandent shrub; lowland forest; P. Langkawi, Kd, Pn.
- 80.5.5 **Erycibe festiva** Prain, **FMP2** 447, **FM14** 417, **TFM4** 76; shrubby climber; lowland and hill forest; Pk, Jh, Sp.
- 80.5.6 **Erycibe griffithii** C.B. Clarke, **FMP2** 447 in part, **FM14** 411, **TFM4** 75; liana; lowland forest; Pn, Pk, Sl, MI, Sp.
- 80.5.7 **Erycibe leucoxyloides** King ex Prain, **FMP2** 446, **FM14** 415, **TFM4** 74; shrubby climber; lowland forest; Sl, Jh, Sp; endemic.
- 80.5.8 **Erycibe magnifica** Prain, **FMP2** 445, **FM14** 412, **TFM4** 75; liana to 35 m long; lowland forest; thrice from Larut, Pk; endemic.
- 80.5.9 **Erycibe maingayi** C.B. Clarke, **FM14** 417, **TFM4** 76; *Erycibe griffithii* (non C.B. Clarke) Prain, **FMP2** 447 in part; scandent shrub or liana; lowland forest; Jh, Sp.
- 80.5.10 **Erycibe malaccensis** C.B. Clarke, **FMP2** 446, **FM14** 428, **TFM4** 76; liana; lowland and montane forest to 1800 m; Pn, Pk, Ph, MI, Sp.
- 80.5.11 **Erycibe praecipua** Prain, **FMP2** 447, **FM14** 409, **TFM4** 76; shrubby climber; lowland and hill forest; Pn, Pk, Jh.



- 80.5.12 **Erycibe rheedii** Blume, **FMi4** 425, **TFM4** 75; *Erycibe angulata* Prain, **FMP2** 448; liana to 20 m long; lowland forest; Kd, Pk, Sl, Ml, Jh.
- 80.5.13 **Erycibe sapotacea** Hallier f. & Prain ex Prain, **FMP2** 447, **FMi4** 409, **TFM4** 76; hill forest at 350 m; Pn; endemic.
- 80.5.14 **Erycibe stapfiana** Prain, **FMP2** 448, **FMi4** 423, **TFM4** 75; liana to 30 m long; lowland and montane forest to 1200 m; Pk, Ph, Sl, Jh.
- 80.5.15 **Erycibe strigosa** Prain, **FMP2** 445, **FMi4** 416, **TFM4** 75; liana; lowland forest; known only from type, Taiping, Pk; endemic.
- 80.5.16a **Erycibe tomentosa** Blume var. **hirsuta** (Hallier f.) Hoogl., **FMi4** 428, **TFM4** 75; slender liana; lowland forest; Jh, Sp.
- 80.5.16b **Erycibe tomentosa** Blume var. **tomentosa**, **FMi4** 427, **TFM4** 76; *Erycibe princii* Wall. ex Choisy, **FMP2** 446; 'princei'; liana, occasionally a shrub; lowland forest margins; NS, Ml, Jh, Sp.
- 80.5.17 **Erycibe sp. A**, **TFM4** 75; liana; hill forest at 400 m; once from Gg Belumut, Jh; endemic.
- 80.5.18 **Erycibe sp. B**, **TFM4** 76; liana; lowland forest; Ph, Sl, NS; endemic.
- 80.6.1 **Evolvulus alsinoides** (L.) L., **FMP2** 454, **FMi4** 395, **TFM4** 73; prostrate or erect herb; sandy shores, dry open places; mostly East Coast.
- 80.7.1 **Hewittia sublobata** (L.f.) Kuntze, **FMi4** 438, **TFM4** 73; *Hewittia bicolor* Wight & Arn., **FMP2** 455; prostrate or twining vine to 2 m long; open grassy places; Pk, Ml.
- 80.8.1 **Ipomoea aquatica** Forssk., **FMi4** 473; *Ipomoea reptans* Poir., **FMP2** 462; trailing herb to 3 m long; on wet soil or in shallow water, oft cultivated; throughout.
- 80.8.2 **Ipomoea cairica** (L.) Sweet, **FMi4** 478; *Ipomoea pulchella auct. non* Roth, **FMP2** 460; twining vine; waste places, fences and hedges; naturalized from tropical America.
- 80.8.3 **Ipomoea campanulata** L., **A15** 327, **FMi9** 558; *Ipomoea illustris* (C.B. Clarke) Prain, **FMP2** 460, **FMi4** 485; slightly woody twining vine; climbing on sea shore vegetation; scattered.
- 80.8.4 **Ipomoea indica** (Burm.f.) Merr., **F13** 37; *Ipomoea congesta* R.Br., **FMi4** 465; twining vine; waste places, forest margins, also cultivated; scattered.
- 80.8.5 **Ipomoea littoralis** Blume, **FMP2** 461, **FMi6** 941; *Ipomoea gracilis auctt. plur., non* R.Br., **FMi4** 470; creeping herb, sometimes climbing; sandy shores; most coasts.

- 80.8.6 ***Ipomoea marginata*** (Desv.) Verdc., **V40** 658; *Ipomoea sagittaeifolia* Burm.f., **FMP2** 461; *Ipomoea maxima* auct. plur., non (L.f.) Don ex Sweet, **FMi4** 472; *Ipomoea sepiaria* Koenig ex Roxb., nom. illeg., **FMi6** 941; twining or prostrate vine to 2.5 m long; usually near the sea; scattered.
- 80.8.7 ***Ipomoea mauritiana*** Jacq., **S29** 63; *Ipomoea digitata* auct. non L., **FMP2** 460, **FMi4** 483; large twining vine; beaches, waste places, hedges; widespread.
- 80.8.8 ***Ipomoea nil*** (L.) Roth, **FMi4** 465; twining or prostrate vine; roadsides; Pn; naturalized from tropical America.
- 80.8.9 ***Ipomoea obscura*** (L.) Ker Gawl., **FMP2** 461, **FMi4** 471; twining or creeping vine to 2 m long; roadsides, waste ground; scattered.
- 80.8.10 ***Ipomoea pes-caprae*** (L.) R.Br. ssp. **brasiliensis** (L.) Ooststr., **FMP2** 460, **FMi4** 475; trailing herb to 30 m long; sandy seashores; all coasts.
- 80.8.11 ***Ipomoea pes-tigridis*** L., **FMP2** 460, **FMi4** 467; twining or creeping vine; sandy waste places; scattered.
- 80.8.12 ***Ipomoea pileata*** Roxb., **FMi4** 467; twining vine; dry open places; Ps.
- 80.8.13 ***Ipomoea stolonifera*** (Cirillo) J.F. Gmel., **FMi4** 478; *Ipomoea carnososa* R.Br., **FMP2** 461; trailing herb to 5 m long; sand dunes and beaches; Ph, Ml.
- 80.8.14 ***Ipomoea sumatrana*** (Miq.) Ooststr., **FMi4** 486; *Ipomoea staphylina* Roem. & Schult. var. *malayana* Prain, **FMP2** 462; shrubby climber; lowland and hill forest; Ps, Kd, Pn, Pk, Ph.
- 80.8.15 ***Ipomoea triloba*** L., **FMi4** 468, **M47** 142; twining or creeping vine; sandy areas and waste places; widespread; naturalized from tropical America.
- 80.8.16 ***Ipomoea violacea*** L., **M10** 265; *Ipomoea tuba* (Schltl.) G. Don, **S23** 33, **FMi4** 487; *Ipomoea macrantha* Roem. & Schult., **FMi9** 558; woody twining vine; sea shores; Ps, P. Langkawi, Kd, Sp.
- 80.9.1 ***Jacquemontia paniculata*** (Burm.f.) Hallier f., **FMP2** 456, **FMi4** 432; twining vine; forest margins, dry grassy places; Ps, Pk.
- 80.10.1 ***Lepistemon binectariferum*** (Wall.) Kuntze, **FMi4** 489; *Lepistemon flavescens* Blume, **FMP2** 462; twining vine to 3 m high; forest margins; widespread.
- 80.11.1 ***Merremia borneensis*** Merr., **FMi4** 451; large woody twiner; roadsides and along streams in the lowlands, Tg.
- 80.11.2 ***Merremia hederacea*** (Burm.f.) Hallier f., **FMi4** 441; *Merremia convolvulacea* Dennst. ex Hallier f., **FMP2** 458; twining or prostrate vine; sandy open places, weed of cultivation; throughout.

- 80.11.3 **Merremia hirta** (L.) Merr., **FMi4** 442; *Merremia caespitosa* (Roxb.) Hallier f., **FMP2** 458; creeping or climbing twiner; open grassy places; widespread.
- 80.11.4 **Merremia peltata** (L.) Merr., **FMi4** 452; *Merremia nymphaeifolia* (non Griseb.) Blume, **FMP2** 458; liana to 30 m high; forest edges and clearings to 700 m; Pk, Ph, NS, MI.
- 80.11.5 **Merremia umbellata** (L.) Hallier f. ssp. **orientalis** (Hallier f.) Ooststr., **FMP2** 459, **FMi4** 449; twining vine to 3 m long; thickets, forest margins; widespread.
- 80.11.6 **Merremia vitifolia** (Burm.f.) Hallier f., **FMP2** 457, **FMi4** 448; twining vine to 4 m long; riverbanks and forest margins; Ps, Pk, Ph.
- 80.12.1a **Neuropeltis maingayi** Peter ex Ooststr. var. **maingayi**, **FMi4** 400; liana to 9 m high; lowland forest; Pk, SI, MI; endemic.
- 80.12.1b **Neuropeltis maingayi** Peter ex Ooststr. var. **tomentosa** Ooststr., **FMi4** 401; liana; lowland forest; Ph, MI; endemic.
- 80.12.2 **Neuropeltis racemosa** Wall., **FMP2** 453, **FMi4** 400; twining liana; lowland forest; Kd, Pn, Sp.
- 80.13.1 **Operculina riedeliana** (Oliv.) Ooststr., **FMi4** 457; twining liana; forest margins; NS.
- 80.13.2 **Operculina turpethum** (L.) Silva Manso, **FMi4** 456; twining vine; waste places; Pn, Jh.
- 80.14.1 **Porana spectabilis** Kurz, **FMi4** 404; twining liana; once from Pk.
- 80.15.1 **Stictocardia tiliifolia** (Desr.) Hallier f., **FMi4** 491; large liana; open places, often near the sea; P. Langkawi.
- 80.16.1a **Xenostegia tridentata** (L.) D.F. Austin & Staples ssp. **hastata** (Desr.) Parmar, **P06** 251; *Merremia hastata* (Desr.) Hallier f., **FMP2** 457; *Merremia tridentata* (L.) Hallier f. ssp. **hastata** (Desr.) Ooststr., **FMi4** 445; twining vine to 2 m long; open grassy places, often near the sea; widespread.
- 80.16.1b **Xenostegia tridentata** (L.) D.F. Austin & Staples ssp. **tridentata**, **A16** 533; *Merremia tridentata* (L.) Hallier f., **FMP2** 458, **FMi4** 445; twining vine to 2 m long; open grassy places, often near the sea; widespread.
81. **CORNACEAE**
- 81.1.1 **Mastixia cuspidata** Blume, **FMi8** 95, **TFM3** 54; *Mastixia bracteata* C.B. Clarke, **FMP1** 891; tree to 24 m tall; lowland and hill forest; Pk, SI, NS, MI, Jh.

- 81.1.2a **Mastixia pentandra** Blume ssp. **chinensis** (Merr.) K.M. Matthew, **FMi8** 96, **TFM3** 54; tree to 20 m tall; montane forest; once from Gg Raya, Kd.
- 81.1.2b **Mastixia pentandra** Blume ssp. **scortechinii** (King) K.M. Matthew, **FMi8** 96, **TFM3** 54; *Mastixia megacarpa* Ridl., **FMP1** 891; *Mastixia scortechinii* King, **FMP1** 891; tree to 36 m tall; lowland to montane forest at 1500 m; Kd, Kl, Pn, Pk, Ph, Sl, NS, Jh.
- 81.1.3a **Mastixia trichotoma** Blume var. **clarkeana** (King) Danser, **FMi8** 93, **TFM3** 54; *Mastixia clarkeana* King, **FMP1** 890 incl. var. *macrophylla* King; tree to 24 m tall; lowland and hill forest to 900 m; Kd, Pk, Sl, NS, Jh.
- 81.1.3b **Mastixia trichotoma** Blume var. **maingayi** (C.B. Clarke) Danser, **FMi8** 93, **TFM3** 54; *Mastixia maingayi* C.B. Clarke, **FMP1** 890; *Mastixia propinqua* Ridl., **FMP1** 890; *Mastixia rostrata auct. non* Blume, **FMP1** 890; tree to 24 m tall; lowland to montane forest at 1500 m; Pn, Pk, Ph, Sl, Jh, Sp.
- 81.2.1 **Nyssa javanica** (Blume) Wangerin, **FMi4** 29, **TFM1** 346; *Nyssa sessiliflora* Hook.f. & Thomson, **FMP1** 895; tree to 40 m tall; montane forest at 900–1400 m; Pk, Ph.

## 82. CRASSULACEAE

- 82.1.1 **Kalanchoe pinnata** (Lam.) Pers., **FMi4** 199; *Bryophyllum calycinum* Salisb., **FMP1** 688; herb 30–200 cm tall; open dry places to 1000 m; scattered; naturalized from tropical Africa.

## 83. CRUCIFERAE

- 83.1.1 **Brassica juncea** (L.) Czern., **FMi10** 545; herb 30–150 cm tall; waste land, weed of cultivation; montane areas; naturalized, origins obscure.
- 83.2.1 **Cardamine hirsuta** L., **FMi10** 554; herb to 30 cm tall; weed of cultivation; widespread; possibly native in the mountains.
- 83.2.2 **Cardamine flexuosa** With., **S65** 107; small herb; weed of cultivation; Genting Highlands, Ph; naturalized from Europe.
- 83.3.1 **Rorippa heterophylla** (Blume) R.O. Williams, **FMi10** 559; *Nasturtium indicum auct. non* (L.) DC., **FMP1** 119; herb to 50 cm tall; weed of cultivation, waste ground; scattered; naturalized from mainland Asia.

## 84. CRYPTERONIACEAE

- 84.1.1 **Axinandra beccariana** Baill., **FMi8** 204, **TFM4** 79; *Axinandra maingayi* C.B. Clarke, **FMP1** 826; tree; lowland forest; collected once in Ml.

- 84.2.1 **Crypteronia griffithii** C.B. Clarke, **FMP1** 822, **FM18** 196, **TFM4** 80; tree to 45 m tall; lowland and hill forest to 600 m; Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 84.2.2a **Crypteronia paniculata** Blume var. **affinis** (Planch.) Beus-Osinga, **FM18** 194, **TFM4** 81; *Crypteronia paniculata* Blume, **FMP1** 821 in part; tree to 27 m tall; lowland forest; Kd, Kl, Pn.
- 84.2.2b **Crypteronia paniculata** Blume var. **paniculata**, **FM18** 194, **TFM4** 80; *Crypteronia paniculata* Blume, **FMP1** 821 in part; tree to 30 m tall; lowland and hill forest to 1200 m; Ps, Kd, Kl, Pn, Pk, Ph, Sl, NS.

## 85. CTENOLOPHONACEAE

- 85.1.1 **Ctenolophon parvifolius** Oliv., **FMP1** 423, **TFM1** 306, **FM110** 631; *Ctenolophon grandifolius* Oliv., **FMP1** 423; buttressed tree 12–40 m tall; hilly forest below 300 m, also swamps; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

## 86. CUCURBITACEAE

- 86.1.1 **Alsomitra clarkei** (King) Hutch., **H57** 96; *Zanonia clarkei* King, **FMP1** 852; lofty climber; lowlands; Pk, Sl; endemic.
- 86.1.2 **Alsomitra macrocarpa** (Blume) M. Roem., **H57** 96, **R11** 59; lofty woody climber; lowland forest; Ph, NS, Jh.
- 86.2.1 **Gymnopetalum chinense** (Lour.) Merr., **J11** 379, **L23** 858; *Gymnopetalum cochinchinense* (Lour.) Kurz, **FMP1** 846; *Gymnopetalum quinquelobum* Miq., **FMP1** 847; creeping herb; open grassy places. also on limestone; P. Langkawi, Kl, Ph, Ml.
- 86.2.2 **Gymnopetalum integrifolium** (Roxb.) Kurz, **FMP1** 846, **K12** 100; creeping herb; open grassy places; Kl, Pk.
- 86.3.1 **Gynostemma pentaphyllum** (Thunb.) Makino, **K12** 25, **J10** 803, **L23** 860; *Gynostemma pedatum* Blume, **FMP1** 851; vine; forest margins; Pk.
- 86.4.1 **Hodgsonia macrocarpa** (Blume) Cogn., **K12** 74; *Hodgsonia capniocarpa* Ridl., **FMP1** 843; large vine; riverbanks; Pn, Ph, Ml.
- 86.5.1 **Momordica charantia** L., **K12** 42, **L23** 861; tendrillar vine; waste ground; widespread; naturalized but origin obscure.
- 86.5.2 **Momordica clarkeana** King, **FMP1** 848; climber, lowland forest; Pk.

- 86.5.3 **Momordica cochinchinensis** (Lour.) Spreng., **FMP1** 848, **K12** 38; **L23** 861; large climber; river banks; Pn, Kl, Pk, Ph, Sl.
- 86.5.4 **Momordica subangulata** Blume, **FMP1** 848, **K12** 41; climber; riverbanks and on limestone; Kl, Pk.
- 86.6.1 **Neosalsomitra integrifoliola** (Cogn.) Hutch., **H57** 99, **K12** 12, **J11** 739, **L23** 862; *Alsomitra clavigera* auct. non M. Roem., **FMP1** 852; *Neosalsomitra pubigera* (Prain) Hutch., **H57** 99, **C14** 112; slender climber; rocky places, including limestone; P. Langkawi, Kd.
- 86.7.1 **Solena amplexicaulis** (Lam.) K.N. Gandhi, **L23** 865; *Zehneria umbellata* Thwaites, **FMP1** 851; *Solena heterophylla* Lour., **K12** 63; vine; open sandy places; Pk.
- 86.8.1 **Trichosanthes celebica** Cogn., **FMP1** 845; climber; forest margins; scattered.
- 86.8.2 **Trichosanthes tricuspidata** Lour., **FMP1** 844, **K12** 81; *Trichosanthes palmata* Roxb., **FMP1** 845; slender climber; lowland forest; Pn, Pk, Ph.
- 86.8.3 **Trichosanthes wallichiana** (Ser.) Wight, **FMP1** 845; climber; lowland forest margins; widespread.
- 86.8.4 **Trichosanthes wawraei** Cogn., **FMP1** 845; climber; forest margins; widespread.
- 86.9.1 **Zanonia indica** L., **FMP1** 851, **K12** 16; *Tinospora curtisii* Ridl., **FMP1** 103; climber; damp lowland forest; Pn, Pk.
- 86.10.1 **Zehneria japonica** (Thunb.) H.Y. Liu, **L23** 870; *Melothria indica* Lour., **FMP1** 850; *Melothria odorata* C.B. Clarke var. *triloba* C.B. Clarke, **FMP1** 850; *Zehneria indica* (Lour.) Keraudren, **K12** 52, **J10** 802; slender vine; open country; Pn, Sl, Ml.
- 86.10.2 **Zehneria marginata** (Blume) Keraudren, **K12** 55; *Melothria marginata* (Blume) Cogn., **FMP1** 850 incl. var. *heterophylla* (Blume) Cogn.; *Melothria affinis* King, **FMP1** 849; vine; lowlands; widespread.

## 87. CUNONIACEAE

- 87.1.1 **Weinmannia blumei** Planch., **FMP1** 682, **TFM1** 179; tree to 12 m tall; montane forest above 1200 m; widespread.

## 88. DAPHNIPHYLLACEAE

88.1.1 **Daphniphyllum glaucescens** Blume, **TFM1** 181; *Daphniphyllum lancifolium* Hook.f., **FMP3** 235; *Daphniphyllum scortechinii* Hook.f., **FMP3** 235; tree to 15 m tall; upper montane forest; widespread.

88.1.2 **Daphniphyllum laurinum** (Benth.) Baill., **FMP3** 234, **TFM1** 182; *Daphniphyllum bancanum* Kurz, **FMP3** 234; tree to 8 m tall; secondary forest, open places, often near the sea; Ps, Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

## 89. DATISCACEAE

89.1.1 **Tetrameles nudiflora** R.Br., **FMP1** 865, **FMi4** 385, **TFM2** 29; tree to 45 m tall; lowland forest; Ps, P. Langkawi, Kd, Kl, Pk, Ph.

## 90. DICHAPETALACEAE

90.1.1 **Dichapetalum gelonioides** (Roxb.) Engl. ssp. **tuberculatum** Leenh., **FMi5** 311; *Ellipanthus scortechinii* King, **FMP1** 548; small shrubby tree; lowland forest; scattered.

90.1.2 **Dichapetalum griffithii** (Hook.f.) Engl., **FMi5** 313; *Chailletia griffithii* Hook.f., **FMP1** 419; shrub to 4 m tall, often climbing; lowland forest; Pk, Sl, NS, Ml; endemic.

90.1.3 **Dichapetalum helferianum** (Kurz) Pierre, **FMi5** 315; *Chailletia helferiana* Kurz, **FMP1** 417; scandent shrub; open country; Ps, P. Langkawi.

90.1.4 **Dichapetalum laurocerasus** (Planch. ex Hook.f.) Engl., **FMi5** 315; *Chailletia laurocerasus* Planch. ex Hook.f., **FMP1** 417; liana; lowland and hill forest to 600 m; Pn, Pk; endemic.

90.1.5 **Dichapetalum longipetalum** (Turcz.) Engl., **FMi5** 314; shrub or liana; lowland forest.

90.1.6 **Dichapetalum sordidum** (Hook.f.) Leenh., **FMi5** 309; *Chailletia sordida* (Hook.f.) Ridl., **FMP1** 418; climbing shrub; lowland forest margins; Ml, Jh, Sp.

90.1.7 **Dichapetalum tenuifolium** (King) Engl., **FMi5** 312; *Chailletia tenuifolia* King, **FMP1** 416; shrub or small tree to 5 m tall; lowland and hill forest to 600 m; Pk; endemic.

90.1.8 **Dichapetalum timoriense** (DC.) Boerl., **FMi5** 307; *Chailletia tessellata* King, **FMP1** 416; *Chailletia deflexifolia* Turcz., **FMP1** 418; *Chailletia hookeri* King, **FMP1** 418; scandent shrub to 10 m tall; lowland and hill forest; scattered.

## 91. DILLENiaceae

- 91.1.1 **Acrotrema costatum** Jack, **FMP1** 7, **FM14** 151, **TFM1** 183; herb to 25 cm tall; lowland and hill forest to 1000 m; widespread.
- 91.2.1 **Dillenia albiflos** (Ridl.) Hoogl., **FM14** 158, **TFM1** 186; *Wormia albiflos* Ridl., **FMP1** 9; tree to 17 m tall; lowland swamp forest; Jh; endemic.
- 91.2.2 **Dillenia excelsa** (Jack) Gilg, **FM14** 169, **TFM1** 186 incl. var. *tomentella* (Martelli) Corner *ex* Masam. and var. *pubescens* (Corner) Corner *ex* Masam.; *Wormia oblonga* Wall. *ex* Hook.f. & Thomson, **FMP1** 9; *Wormia tomentella* Martelli, **FMP1** 10; tree to 30 m tall; lowland forest; throughout.
- 91.2.3 **Dillenia grandifolia** Wall. *ex* Hook.f. & Thomson, **FMP1** 11, **TFM1** 188; *Dillenia scortechinii* King, **FMP1** 12; *Dillenia eximia* Miq., **FM14** 166; stilt-rooted tree to 30 m tall; lowland forest to 1000 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 91.2.4 **Dillenia indica** L., **FMP1** 10, **FM14** 171, **TFM1** 188; tree to 20 m tall; often on stream banks; Kl, Tg, Pk, Ph, Sl, Jh.
- 91.2.5 **Dillenia obovata** (Blume) Hoogl., **FM14** 173, **TFM1** 190; *Dillenia aurea* auct. *non* Sm., **FMP1** 11; tree to 30 m tall; open forest; Kd, Pk, Ph.
- 91.2.6 **Dillenia ovata** Wall. *ex* Hook.f. & Thomson, **FMP1** 11, **FM14** 170, **TFM1** 190; tree to 30 m tall but usually smaller; open forest and disturbed areas; Kd, Pk, Ph.
- 91.2.7 **Dillenia pulchella** (Jack) Gilg, **FM14** 171, **TFM1** 191; *Wormia pulchella* Jack, **FMP1** 9; tree to 30 m tall; wet lowland forest; Tg, Pk, Ph, Sl, NS, Jh.
- 91.2.8a **Dillenia reticulata** King var. *psilocarpella* Hoogl., **FM14** 168, **TFM1** 191; stilt-rooted tree to 30 m tall; lowland forest; Kl, Pk, Ph, Sl, NS, Ml, Jh.
- 91.2.8b **Dillenia reticulata** King var. *reticulata*, **FMP1** 11, **FM14** 168, **TFM1** 191; stilt-rooted tree to 30 m tall; lowland forest; Ml; endemic variety.
- 91.2.9 **Dillenia suffruticosa** (Griff.) Martelli, **FM14** 163, **TFM1** 192; *Wormia subsessilis* Miq., **FMP1** 7; *Wormia suffruticosa* Griff., **FMP1** 8; thicket-forming shrub to 6 m tall; secondary forest; commonest in the south.
- 91.2.10 **Dillenia sumatrana** Miq., **FM14** 170, **TFM1** 193; *Wormia parviflora* Ridl., **FMP1** 9; *Dillenia meliosmifolia* Hook.f. & Thomson, **FMP1** 12; tree to 20 m tall; lowland forest; Kd, Pk, Ph, Sl, NS.
- 91.3.1 **Tetracera akara** (Burm.f.) Merr., **FM14** 146; *Tetracera sylvestris* Ridl., **FMP1** 5; liana to 25 m long; lowland forest to 750 m; widespread.
- 91.3.2 **Tetracera arborescens** Jack, **FM14** 148; *Tetracera lucida* Wall. *ex* Ridl., **FMP1** 5 incl. var. *lanuginosa* Ridl.; liana or shrub; swampy forest; scattered.



- 91.3.3a **Tetracera asiatica** (Lour.) Hoogl. ssp. **andamanica** Hoogl., **FMi4** 144; small shrub or liana.
- 91.3.3b **Tetracera asiatica** (Lour.) Hoogl. ssp. **sumatrana** Hoogl., **FMi4** 144; small shrub or liana; lowland and hill forest to 1300 m.
- 91.3.4 **Tetracera fagifolia** Blume, **FMP1** 6, **FMi4** 148; *Tetracera sumatrana* Miq., **FMP1** 6; liana reaching to 14 m; lowland forest to 750 m; scattered.
- 91.3.5 **Tetracera indica** (Christm. & Panz.) Merr., **FMi4** 146; *Tetracera assa* DC., **FMP1** 5; shrub or small liana; open places, forest margins in the lowlands; common and widespread.
- 91.3.6 **Tetracera loureiri** (Finet & Gagnep.) Craib, **FMi4** 147; *Tetracera fragrans* (*non* Wildem.) Ridl., **FMP1** 6; low climber; thickets and hedges; north of Peninsula.
- 91.3.7 **Tetracera macrophylla** Wall. *ex* Hook.f. & Thomson, **FMP1** 4, **FMi4** 147; *Tetracera grandis* King, **FMP1** 4; liana to 10 m long; lowland forest; widespread.
- 91.3.8 **Tetracera maingayi** Hoogl., **FMi4** 144; *Tetracera borneensis auct. non* Miq., **FMP1** 6; scandent shrub; lowland forest; Pn, Sl, Ml.
- 91.3.9 **Tetracera scandens** (L.) Merr., **FMi4** 143; *Delima sarmentosa* L., **FMP1** 3; liana to 30 m, sometimes shrubby; forest and forest margins to 1000 m; widespread.

## 92. DIPTEROCARPACEAE

- 92.1.1 **Anisoptera costata** Korth., **FMP1** 218 in part, **S74** 204, **FMi9** 330; huge tree; lowland forest; widespread.
- 92.1.2 **Anisoptera curtisii** Dyer *ex* King, **FMP1** 218, **S74** 204, **FMi9** 329; large buttressed tree; lowland and hill forest to 700 m; widespread but commoner in the north.
- 92.1.3 **Anisoptera laevis** Ridl., **FMP1** 219, **S74** 205, **FMi9** 335; big tree; lowland forest; widespread.
- 92.1.4 **Anisoptera marginata** Korth., **FMP1** 219, **S74** 206, **FMi9** 328; large tree; peat swamp and heath forest; Pk and Ph southward.
- 92.1.5 **Anisoptera megistocarpa** Slooten, **S74** 207, **FMi9** 332; *Anisoptera costata auct. non* Korth., **FMP1** 218 in part; tall buttressed tree; lowland forest; Pk and Ph southward.

- 92.1.6 **Anisoptera scaphula** (Roxb.) Kurz, **S74** 209, **FMi9** 335; *Anisoptera thurifera* auct. non Blume, **FMP1** 219; very tall buttressed tree; lowland forest; NS and Ph northward.
- 92.2.1 **Cotylelobium lanceolatum** Craib, **FMi9** 343; *Cotylelobium flavum* auct. non Pierre, **FMP1** 239; *Cotylelobium malayanum* Slooten, **S74** 235; medium to large tree; lowland forest; Tg southward.
- 92.2.2 **Cotylelobium melanoxyton** (Hook.f.) Pierre, **S74** 236, **FMi9** 341; tree; lowland forest; Jh, ?Sp.
- 92.3.1 **Dipterocarpus acutangulus** Vesque, **S74** 166, **FMi9** 322; tree; hill forest; NS.
- 92.3.2 **Dipterocarpus baudii** Korth., **S74** 168, **FMi9** 303; *Dipterocarpus duperreanus* Pierre, **FMP1** 214; large tree; lowland forest; widespread.
- 92.3.3 **Dipterocarpus caudatus** Foxw. ssp. **penangianus** (Foxw.) P.S. Ashton, **FMi9** 305; *Dipterocarpus penangianus* Foxw., **S74** 185; large tree; coastal hill forest; Pn, Kl, Pk, Ph, Jh, Sp.
- 92.3.4 **Dipterocarpus chartaceus** Symington, **S74** 169, **FMi9** 304; *Dipterocarpus skinneri* auct. non King, **FMP1** 214 in part; *Dipterocarpus skinneri* King var. *hirtus* Ridl., **FMP1** 215; large tree; seasonally flooded lowland forest.
- 92.3.5 **Dipterocarpus concavus** Foxw., **S74** 173, **FMi9** 322; large buttressed tree; lowland forest; Pk and Ph northward.
- 92.3.6 **Dipterocarpus coriaceus** Slooten, **S74** 171, **FMi9** 324; tree; peat swamp forest; Pk, Ph.
- 92.3.7 **Dipterocarpus cornutus** Dyer, **FMP1** 215, **S74** 172, **FMi9** 312; large tree; lowland and hill forest to 1000 m.
- 92.3.8 **Dipterocarpus costatus** Gaertn.f., **FMP1** 217, **S74** 173, **FMi9** 321; large tree; lowland forest; NS northward.
- 92.3.9 **Dipterocarpus costulatus** Slooten, **S74** 174, **FMi9** 310; tree; lowland forest; widespread.
- 92.3.10 **Dipterocarpus crinitus** Dyer, **FMP1** 214, **S74** 175, **FMi9** 299; tree; lowland and hill forest to 850 m; widespread.
- 92.3.11 **Dipterocarpus dyeri** Pierre, **S74** 176, **FMi9** 315; large tree; lowland forest; Ps, Kd.
- 92.3.12 **Dipterocarpus elongatus** Korth., **FMi9** 312; *Dipterocarpus apterus* Foxw., **S74** 167; tree; lowland forest; mostly east coast, Kl to Sp.
- 92.3.13 **Dipterocarpus eurhynchus** Miq., **FMi9** 324; *Dipterocarpus appendiculatus* Scheff., **S74** 167; tree; lowland forest; Tg, Ph, NS, Jh.

- 92.3.14 **Dipterocarpus fagineus** Vesque, **FMP1** 216, **FMi9** 315; *Dipterocarpus pseudofagineus* Foxw., **S74** 186; tree; lowland and hill forest; Pn, Tg, Pk, Ph.
- 92.3.15 **Dipterocarpus gracilis** Blume, **S74** 177, **FMi9** 301; tree; lowland forest; widespread.
- 92.3.16 **Dipterocarpus grandiflorus** (Blanco) Blanco, **FMP1** 216, **S74** 178, **FMi9** 317; very large buttressed tree; lowland forest; widespread.
- 92.3.17 **Dipterocarpus hasseltii** Blume, **S74** 180, **FMi9** 306; large tree; lowland forest; commoner in the north.
- 92.3.18 **Dipterocarpus kerrii** King, **FMP1** 215, **S74** 181, **FMi9** 305; large tree; lowland forest; Ml and Ph northward.
- 92.3.19 **Dipterocarpus kunstleri** King, **FMP1** 217, **S74** 182, **FMi9** 309; big tree; lowland forest; widespread.
- 92.3.20 **Dipterocarpus lowii** Hook.f., **FMP5** 291, **S74** 183, **FMi9** 313; tree; lowland forest; scattered.
- 92.3.21 **Dipterocarpus oblongifolius** Blume, **FMP1** 216, **S74** 184, **FMi9** 317; large tree; banks of fast-flowing rivers; mostly east of Main Range.
- 92.3.22 **Dipterocarpus obtusifolius** Teijsm. ex Miq., **S74** 184, **FMi9** 304; medium-sized tree; *Schima*-bamboo forest; Ps.
- 92.3.23 **Dipterocarpus palembanicus** Slooten, **S74** 185, **FMi9** 318; tree; lowland and hill forest to 650 m; Tg, Jh, Sp.
- 92.3.24 **Dipterocarpus perakensis** P.S. Ashton, **FMi9** 325; *Dipterocarpus alatus* auct. non Roxb., **S74** 166; large tree; lowland forest on coastal hills; Pn, Pk; endemic.
- 92.3.25 **Dipterocarpus retusus** Blume, **S74** 187, **FMi9** 308; medium-sized tree; hill forest at 800–1300 m.
- 92.3.26 **Dipterocarpus rigidus** Ridl., **FMP1** 217, **S74** 187, **FMi9** 310; tree; coastal hill forest; Tg southward.
- 92.3.27 **Dipterocarpus rotundifolius** Foxw., **S74** 188, **FMi9** 304; tree; lowland forest; mostly east coast south of Tg; endemic.
- 92.3.28 **Dipterocarpus sarawakensis** Slooten, **FMi9** 323; tree; lowland forest; once from Tg.
- 92.3.29 **Dipterocarpus sublamellatus** Foxw., **S74** 92, **FMi9** 322; tree; lowland forest; widespread.

- 92.3.30 **Dipterocarpus verrucosus** Foxw. ex Slooten, **S74** 189, **FMi9** 297; tree; lowland forest; commoner in the south.
- 92.4.1 **Dryobalanops oblongifolia** Dyer ssp. **occidentalis** P.S. Ashton, **FMi9** 373; *Dryobalanops oblongifolia* Dyer, **S74** 196; *Dryobalanops beccariana* Ridl., **FMP1** 211; big tree; swampy lowland forest; Pk northward.
- 92.4.2 **Dryobalanops sumatrensis** (J.F. Gmel.) Kosterm., **K57** 346; *Dryobalanops aromatica* C.F. Gaertn., **FMP1** 210, **S74** 194, **FMi9** 375; tree to 50 m tall; gregarious in sandy lowland forest; Tg, Ph, Sl, NS, Jh.
- 92.5.1 **Hopea apiculata** Symington, **S74** 120, **FMi9** 431; small tree; lowland forest; Pk.
- 92.5.2 **Hopea auriculata** Foxw., **S74** 121, **FMi9** 413; small tree; hill forest to 700 m; Ph, Jh; endemic.
- 92.5.3 **Hopea beccariana** Burck, **S74** 122, **FMi9** 407; *Balanocarpus ovalifolius* Ridl., **FMP1** 247 in part; *Hopea pierrei* auct. non Hance, **FMP1** 238 in part; large buttressed tree; lowland and hill forest to 1200 m; widespread.
- 92.5.4 **Hopea bilitonensis** P.S. Ashton, **FMi9** 433; small stilt-rooted tree; on limestone; once from Pk.
- 92.5.5 **Hopea bracteata** Burck, **FMi9** 414; *Balanocarpus curtisii* King, **FMP1** 246; *Hopea minima* Symington, **S74** 133; small tree; ridges to 650 m; Pn, Pk.
- 92.5.6 **Hopea coriacea** Burck, **FMi9** 398; *Hopea kelantanensis* Symington, **S74** 130; tall buttressed tree; lowland forest, often near rivers; Kl, Tg, Ph.
- 92.5.7 **Hopea dryobalanoides** Miq., **S74** 123, **FMi9** 402; tall buttressed tree; lowland forest; widespread.
- 92.5.8 **Hopea dyeri** F. Heim, **S74** 124, **FMi9** 407; *Hopea pierrei* auct. non Hance, **FMP1** 238 in part; medium-sized tree; lowland and hill forest to 1000 m; widespread.
- 92.5.9 **Hopea ferrea** Laness., **S74** 124, **FMi9** 421; *Balanocarpus anomalus* King, **FMP1** 247; small gnarled tree; mostly on limestone; Ps, P. Langkawi, Kd.
- 92.5.10 **Hopea ferruginea** Parijs, **S74** 125, **FMi9** 404; *Hopea micrantha* auct. non Hook.f., **FMP1** 237 in part; stilt-rooted/buttressed tree; lowland and hill forest to 750 m; Pk and Ph southward.
- 92.5.11 **Hopea glaucescens** Symington, **S74** 126, **FMi9** 429; medium-sized tree; lowland forest to 500 m; Kd, Pk, Ph, Jh; endemic.
- 92.5.12 **Hopea griffithii** Kurz, **S74** 127, **FMi9** 406; medium-sized tree; lowland forest; widespread.

- 92.5.13 **Hopea helferi** (Dyer) Brandis, **S74** 128, **FMi9** 418; large tree; lowland forest; P. Langkawi, Kd, Pk.
- 92.5.14 **Hopea johorensis** Symington, **S74** 130, **FMi9** 404; stilt-rooted tree; lowland forest; East Jh; endemic.
- 92.5.15 **Hopea kerangasensis** P.S. Ashton, **FMi9** 401; medium-sized tree; lowland forest on sandy soils; Tg, Ph.
- 92.5.16 **Hopea latifolia** Symington, **S74** 131, **FMi9** 404; medium-sized tree; lowland forest, including limestone; widespread.
- 92.5.17 **Hopea mengerawan** Miq., **FMP1** 238, **S74** 132, **FMi9** 400; tall buttressed tree; swampy lowland forest; Ph and NS southward.
- 92.5.18 **Hopea montana** Symington, **S74** 133, **FMi9** 413; medium-sized tree; lower montane forest to 1200 m; Kl, Pk.
- 92.5.19 **Hopea myrtifolia** Miq., **S74** 134, **FMi9** 408; medium-sized tree; lowland forest; Pk and Ph southward.
- 92.5.20 **Hopea nervosa** King, **FMP1** 236, **S74** 135, **FMi9** 410; medium-sized tree; lowland forest; widespread.
- 92.5.21 **Hopea nutans** Ridl., **FMP1** 235, **S74** 136, **FMi9** 424; largish buttressed tree; swampy lowland forest; east coast, Tg southward.
- 92.5.22 **Hopea odorata** Roxb., **S74** 137, **FMi9** 422; tall buttressed tree; lowland forest near rivers; Tg and Pk northward.
- 92.5.23 **Hopea pachycarpa** (F. Heim) Symington, **FMi9** 433; *Balanocarpus pubescens* Ridl., **FMP1** 247; *Hopea resinosa* Symington, **S74** 141; tree; lowland forest; Ph, Jh.
- 92.5.24 **Hopea pedicellata** (Brandis) Symington, **S74** 138, **FMi9** 408; *Hopea pierrei auct. non* Hance, **FMP1** 238 in part; medium-sized tree; hill forest to 750 m; Tg and Pk northward.
- 92.5.25 **Hopea pierrei** Hance, **S74** 139, **FMi9** 405; medium-sized tree; ridges to 700 m; Ph, Sl, NS.
- 92.5.26 **Hopea polyalthioides** Symington, **S74** 140, **FMi9** 431; small tree; lowland forest; Jh; endemic.
- 92.5.27 **Hopea pubescens** Ridl., **FMP1** 239, **S74** 140, **FMi9** 397; medium-sized tree; lowland forest; Kl, Ph; endemic.
- 92.5.28 **Hopea sangal** Korth., **S74** 141, **FMi9** 420; *Hopea curtisii* King, **FMP1** 236; *Hopea globosa* Brandis, **FMP1** 236; *Hopea lowii* Dyer ex Brandis, **FMP1** 237; largish tree; lowland forest to 500 m; widespread.

- 92.5.29 **Hopea semicuneata** Symington, **S74** 143, **FMi9** 426; tall buttressed tree; lowland forest to 500 m; Tg, Pk, Ph, NS, MI.
- 92.5.30 **Hopea subalata** Symington, **S74** 143, **FMi9** 413; small tree; lowland forest; Kanching F.R., SI; endemic.
- 92.5.31 **Hopea sublanceolata** Symington, **S74** 144, **FMi9** 411; medium to large tree; lowland forest; Kd, Kl, Pk, Ph; endemic.
- 92.5.32 **Hopea sulcata** Symington, **S74** 145, **FMi9** 399; medium-sized tree; lowland forest to 400 m; Tg, Pk, SI, Jh; endemic.
- 92.6.1 **Neobalanocarpus heimii** (King) P.S. Ashton, **FMi9** 388; *Balanocarpus heimii* King, **FMP1** 247, **S74** 147; very large buttressed tree; lowland and hill forest to 1000 m; widespread.
- 92.7.1 **Parashorea densiflora** Slooten & Symington, **S74** 100, **FMi9** 380; large tree; lowland forest below 500 m; scattered widely; endemic.
- 92.7.2 **Parashorea globosa** Symington, **S74** 101, **FMi9** 381; large tree; lowland forest; Pk.
- 92.7.3 **Parashorea stellata** Kurz, **FMP1** 234, **FMi9** 383; *Parashorea lucida* [non (Miq.) Kurz] Slooten, **S74** 102; medium to large tree, lowland and hill forest to 650 m; Tg and Pk northward.
- 92.8.1 **Shorea acuminata** Dyer, **FMP1** 225, **S74** 65, **FMi9** 535; large buttressed tree to 50 m tall; lowland forest; Pk and Tg southward.
- 92.8.2 **Shorea assamica** Dyer ssp. **globifera** (Ridl.) Symington, **S74** 31, **FMi9** 491; *Shorea globifera* Ridl., **FMP1** 232; large buttressed tree; lowland and hill forest to 1000 m; Pk and Ph northward.
- 92.8.3 **Shorea atrinervosa** Symington, **S74** 9, **FMi9** 457; large tree; lowland forest; Tg, Ph, Jh.
- 92.8.4 **Shorea balanocarpoides** Symington, **S74** 47, **FMi9** 475; small to middling tree; lowland and hill forest to 700 m; Kd, Kl, Tg, Pk, Ph, Jh.
- 92.8.5 **Shorea bentongensis** Foxw., **S74** 33, **FMi9** 494; large buttressed tree; lowland forest; SI, Ph, Jh; endemic.
- 92.8.6 **Shorea blumutensis** Foxw., **S74** 49, **FMi9** 480; large tree; lowland forest below 500 m; Jh.
- 92.8.7 **Shorea bracteolata** Dyer, **FMP1** 229, **S74** 34, **FMi9** 496; medium to large tree; coastal hills to 600 m; Kd, Pn, Kl, Tg, Pk, Ph, SI, NS, MI, Jh, Sp.
- 92.8.8 **Shorea ciliata** King, **FMP1** 229, **S74** 16, **FMi9** 450; medium-sized tree; hill and lower montane forest to 1200 m; Pn and Main Range; endemic.

- 92.8.9 ***Shorea collina*** Ridl., **FMP1** 231, **S74** 12, **FMI9** 447; medium to large tree; lowland forest; East Coast, Tg southwards; endemic.
- 92.8.10a ***Shorea curtisii*** Dyer *ex* King ssp. ***curtisii***, **FMP1** 223, **S74** 67, **FMI9** 541; large tree; ridges to 850 m; throughout.
- 92.8.10b ***Shorea curtisii*** Dyer *ex* King ssp. ***grandis*** P.S. Ashton, **FMI9** 543; *Shorea sp. B*, **S74** 95; large tree; lowland forest; Pk; endemic subspecies.
- 92.8.11 ***Shorea dasyphylla*** Foxw., **S74** 69, **FMI9** 546; moderately big tree; lowland and hill forest to 1000 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 92.8.12 ***Shorea dealbata*** Foxw., **S74** 35, **FMI9** 485; medium-sized tree; lowland forest; Ph (Kuantan district).
- 92.8.13 ***Shorea exelliptica*** Meijer, **FMI9** 455; *Shorea ? elliptica*, **S74** 13; tall buttressed tree; lowland forest; Kd, Tg, Pk, Ph, Jh.
- 92.8.14 ***Shorea faguëtiana*** F. Heim, **S74** 50, **FMI9** 484; *Shorea ridleyana* King, **FMP1** 226 in part; medium to large buttressed tree; mostly in the hills to 700 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 92.8.15 ***Shorea falcifera*** Dyer *ex* Brandis, **FMI9** 456; medium-sized tree; coastal hills; Tg, Ph.
- 92.8.16 ***Shorea farinosa*** C.E.C. Fisch., **S74** 36, **FMI9** 487; large tree; lowland forest; Ps, Kl (presence somewhat doubtful).
- 92.8.17 ***Shorea foxworthyi*** Symington, **S74** 14, **FMI9** 453; tall buttressed tree; lowland and hill forest to 700 m; Kd, Kl, Tg, Pk, Ph, Sl, Jh.
- 92.8.18 ***Shorea gibbosa*** Brandis, **FMP1** 229, **S74** 51, **FMI9** 482; very tall buttressed tree; lowland forest; Jh, Sp.
- 92.8.19 ***Shorea glauca*** King, **FMP1** 223, **S74** 15, **FMI9** 461; medium to large tree; coastal hills to 600 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh.
- 92.8.20 ***Shorea gratissima*** (Wall. *ex* Kurz) Dyer, **FMP1** 226, **S74** 36, **FMI9** 487; large tree; lowland forest; Kl, Sl, Sp.
- 92.8.21 ***Shorea guiso*** (Blanco) Blume, **S74** 16, **FMI9** 447; large buttressed tree; lowland forest; widespread.
- 92.8.22 ***Shorea hemsleyana*** (King) King *ex* Foxw., **S74** 70, **FMI9** 536; *Pachychlamys hemsleyanus* (King) Ridl., **FMP1** 234; tree; peat swamp forest; Pk.
- 92.8.23 ***Shorea henryana*** Pierre, **FMI9** 489; *Shorea sericeiflora* C.E.C. Fisch. & Hutch., **S74** 41; large buttressed tree; lowland forest; Ps, P. Langkawi, Kd.

- 92.8.24 **Shorea hopeifolia** (F. Heim) Symington, **S74** 52, **FMI9** 482; *Shorea ridleyana* King, **FMP1** 226 in part; *Hopea albescens* Ridl., **FMP1** 236; very tall buttressed tree; lowland forest to 600 m; Kl and Pk southward.
- 92.8.25 **Shorea hypochra** Hance, **S74** 37, **FMI9** 494; *Shorea crassifolia* Ridl., **FMP1** 231; very large tree; lowland forest; Sl and Ph northward.
- 92.8.26 **Shorea inappendiculata** Burck, **FMI9** 455; large buttressed tree; lowland forest; Jh.
- 92.8.27 **Shorea johorensis** Foxw., **S74** 72, **FMI9** 513; large buttressed tree; lowland forest; Jh.
- 92.8.28 **Shorea kuantanensis** P.S. Ashton, **FMI9** 472; medium-sized tree; lowland forest; Bt Goh F.R., Ph; endemic.
- 92.8.29 **Shorea kunstleri** King, **FMP1** 228, **S74** 72, **FMI9** 519; large buttressed tree; lowland and hill forest to 800 m; Kl, Tg, Pk, Ph.
- 92.8.30 **Shorea laevis** Ridl., **FMP1** 232, **S74** 18, **FMI9** 461; vast buttressed tree; lowland and hill forest to 1000 m; Kd and Ph southward.
- 92.8.31 **Shorea lamellata** Foxw., **S74** 39, **FMI9** 493; large tree; lowland and hill forest to 650 m; Pk.
- 92.8.32 **Shorea lepidota** (Korth.) Blume, **S74** 73, **FMI9** 538; large buttressed tree; lowland forest; Kd, Pn, Tg, Pk, Ph, NS, MI, Jh.
- 92.8.33 **Shorea leprosula** Miq., **FMP1** 222, **S74** 75, **FMI9** 540; large buttressed tree; lowland and hill forest to 700 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 92.8.34 **Shorea longisperma** Roxb., **FMP1** 233, **FMI9** 481; *Shorea resina-nigra* Foxw., **S71** 56; very large buttressed tree; lowland to montane forest at 1400 m; widespread.
- 92.8.35 **Shorea lumutensis** Symington, **S74** 19, **FMI9** 453; medium to large tree; coastal hills; Pk, ?Jh; ?endemic.
- 92.8.36 **Shorea macrantha** Brandis, **S74** 77, **FMI9** 536; tree of middle size; peat swamp forest; Pk, Ph, Jh.
- 92.8.37 **Shorea macroptera** Dyer, **FMP1** 225, **S74** 78, **FMI9** 532; large tree; lowland and hill forest to 900 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 92.8.38 **Shorea materialis** Ridl., **FMP1** 227, **S74** 29, **FMI9** 456; medium-sized tree; heath forest; Tg, Ph, Jh.
- 92.8.39 **Shorea maxima** (King) Symington, **S74** 53, **FMI9** 478; *Balanocarpus maximus* King, **FMP1** 248; small to medium-sized tree; lowland and hill forest to 1300 m; Pk and Ph southward; endemic.



- 92.8.40 **Shorea maxwelliana** King, **FMP1** 227, **S74** 21, **FM19** 465; *Shorea alba* Ridl., **FMP1** 230; *Shorea barbata* Brandis, **FMP1** 230; *Shorea utilis* King, **FMP1** 230; *Balanocarpus ovalifolius* Ridl., **FMP1** 247 in part; tall buttressed tree; lowland and hill forest to 700 m; Pn and Tg southward.
- 92.8.41 **Shorea multiflora** (Burck) Symington, **S74** 54, **FM19** 475; *Hopea multiflora* (Burck) Brandis, **FMP1** 237; *Balanocarpus penangianus* (F. Heim) King, **FMP1** 246; small to medium-sized tree; lowland and hill forest to 700 m; throughout.
- 92.8.42 **Shorea ochrophloia** Strugnell *ex* Symington, **S74** 23, **FM19** 447; large buttressed tree; lowland forest; widespread.
- 92.8.43a **Shorea ovalis** (Korth.) Blume ssp. **ovalis**, **S74** 80, **FM19** 548; *Shorea furfuracea* (*non* Miq.) Brandis, **FMP1** 232; large tree; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 92.8.43b **Shorea ovalis** (Korth.) Blume ssp. **sericea** (Dyer) P.S. Ashton, **FM19** 551; *Shorea sericea* Dyer, **FMP1** 224; *Shorea rigida* Brandis, **FMP1** 223; large tree; widespread.
- 92.8.44 **Shorea ovata** Dyer *ex* Brandis, **S74** 82, **FM19** 545; small to medium-sized tree; hills and ridges to 1500 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS.
- 92.8.45 **Shorea palembanica** Miq., **S74** 83, **FM19** 513; tree, rarely of great size; swampy lowland forest; Tg, Pk, Ph, Jh.
- 92.8.46a **Shorea parvifolia** Dyer ssp. **parvifolia**, **FMP1** 224, **S74** 85, **FM19** 546; *Shorea scutulata* King, **FMP1** 222; large tree; common in lowland and hill forest to 800 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 92.8.46b **Shorea parvifolia** Dyer ssp. **velutinata** P.S. Ashton, **FM19** 547; large tree; lowland forest; Ph, Jh.
- 92.8.47 **Shorea pauciflora** King, **FMP1** 228, **S74** 87, **FM19** 511; large buttressed tree; lowland and hill forest to 700 m; throughout.
- 92.8.48 **Shorea peltata** Symington, **S74** 56, **FM19** 473; small tree; lowland forest; NW Jh.
- 92.8.49 **Shorea platycarpa** F. Heim, **S74** 88, **FM19** 541; *Shorea palustris* Ridl., **FMP1** 224; large buttressed tree; swamp forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 92.8.50 **Shorea platyclados** Slooten *ex* Foxw., **S74** 89, **FM19** 515; large tree; hill and mountains to 1300 m; Kl, Tg, Pk, Ph, Sl, NS.
- 92.8.51 **Shorea resinosa** Foxw., **S74** 40, **FM19** 496; large tree; lowland forest to 500 m; Pk and Kl to Jh.

- 92.8.52 **Shorea roxburghii** G. Don, **FMi9** 493; *Shorea talura* Roxb., **S74** 42; tree, sometimes big; lowlands, sometimes on limestone; Ps, P. Langkawi, Kd.
- 92.8.53 **Shorea scrobiculata** Burck, **FMi9** 449; *Shorea meadiana* Symington, **S74** 22; medium-sized tree; lowland and hill forest to 700 m; Tg, Ph, Pk.
- 92.8.54 **Shorea siamensis** Miq., **FMi9** 466; *Pentacme malayana* King, **FMP1** 220; *Pentacme siamensis* (Miq.) Kurz, **S74** 105, **C14** 115; small gnarled tree; rocky headlands, limestone; Ps, P. Langkawi.
- 92.8.55a **Shorea singkawang** (Miq.) Miq. ssp. *scabrosa* P.S. Ashton, **FMi9** 537; *Shorea* sp. C, **S74** 95; small tree; forest near the sea; Tg, Ph; endemic subspecies.
- 92.8.55b **Shorea singkawang** (Miq.) Miq. ssp. *singkawang*, **S74** 92, **FMi9** 537; *Pachyklamys thistletonii* (King) Ridl., **FMP1** 233; small tree; lowland forest below 400 m; Kd and Kl to Jh.
- 92.8.56 **Shorea submontana** Symington, **S74** 24, **FMi9** 450; *Shorea costata* [non (Correa) Presl] King, **FMP1** 231; large buttressed tree; mostly hill forest at 800–1000 m; Pn, Tg, Pk, Ph, Sl; endemic.
- 92.8.57 **Shorea sumatrana** (Slooten ex Thorenaar) Symington ex Desch, **S74** 25, **FMi9** 453; *Isoptera borneensis* auct. non Scheff. ex Burck, **FMP1** 245; medium to large tree; usually on river banks; Kd, Tg, Ph, Sl, Jh.
- 92.8.58 **Shorea teysmanniana** Dyer ex Brandis, **S74** 94, **FMi9** 538; medium-sized buttressed tree; peat swamp forest; Sl.
- 92.8.59 **Shorea uliginosa** Foxw., **FMi9** 539; *Shorea rugosa* F. Heim var. *uliginosa* (Foxw.) Symington, **S74** 91; large buttressed tree; peat swamp forest; Pk, Sl.
- 92.9.1 **Vatica bella** Slooten, **S74** 218, **FMi9** 352; tree to 50 m tall; lowland forest; Pk and Ph southward; endemic.
- 92.9.2 **Vatica cinerea** King, **S74** 218, **FMi9** 360; *Synaptea lancaviensis* (Ridl.) Ridl., **FMP1** 241; *Synaptea cinerea* (King) Ridl., **FMP1** 243; small to medium-sized tree; lowland and hill forest to 600 m, including limestone; Ps, P. Langkawi, Ps.
- 92.9.3 **Vatica cuspidata** (Ridl.) Symington, **S74** 219, **FMi9** 367; *Synaptea maingayi* (Dyer) Ridl., **FMP1** 240 in part; *Synaptea cuspidata* Ridl., **FMP1** 242; medium to large tree; lowland ridge forest often near the sea; widespread; endemic.
- 92.9.4 **Vatica flavida** Foxw., **S74** 220, **FMi9** 359; medium-sized tree; swampy lowland forest; Pk; endemic.
- 92.9.5 **Vatica havilandii** Brandis, **S74** 220, **FMi9** 351; tree; lowland and hill forest; Tg, Pk, Ph.

- 92.9.6 **Vatica heteroptera** Symington, **S74** 221, **FMI9** 359; medium-sized tree; lower montane forest at 1000–1300 m; Pk, Ph; endemic.
- 92.9.7 **Vatica hullettii** (Ridl.) P.S. Ashton, **FMI9** 358; *Vatica stipulata* Ridl., *nom. illeg.*, **FMP1** 244, **S74** 229; *Otophora hullettii* (Ridl.) Ridl., **FMP1** 494; small tree; lowland forest; NS, MI, Jh; endemic.
- 92.9.8 **Vatica lobata** Foxw., **S74** 221, **FMI9** 358; small tree; lowland forest near streams; Tg, Ph, Jh; endemic.
- 92.9.9 **Vatica lowii** King, **S74** 222, **FMI9** 369; *Synaptea lowii* (King) Ridl., **FMP1** 241 in part; small to medium-sized tree; lowland and hill forest to 750 m; Kl, Pk.
- 92.9.10 **Vatica maingayi** Dyer, **S74** 223, **FMI9** 369; *Synaptea maingayi* (Dyer) Ridl., **FMP1** 240 in part; tree; lowland forest to 500 m; widespread.
- 92.9.11 **Vatica mangachapoi** Blanco, **FMI9** 364; *Synaptea reticulata* [non Thwaites] (King) Ridl., **FMP1** 243; *Vatica patula* Symington, **S74** 226; tree; lowland and hill forest; Kd, Kl, Tg, Pk.
- 92.9.12 **Vatica nitens** King, **S74** 223, **FMI9** 367; *Synaptea nitens* (King) Ridl., **FMP1** 241; tree; lowland and hill forest to 600 m; widespread.
- 92.9.13 **Vatica odorata** (Griff.) Symington, **S74** 224, **FMI9** 360; *Synaptea dyeri* (Pierre ex Laness.) Pierre, **FMP1** 240; *Synaptea faginea* (Dyer) Pierre, **FMP1** 242; tree; lowland forest, mostly coastal; Ph and NS northwards.
- 92.9.14 **Vatica pallida** Dyer, **FMP1** 244, **S74** 225, **FMI9** 358; small tree; lowland forest to 350 m; Pn; endemic.
- 92.9.15 **Vatica pauciflora** (Korth.) Blume, **FMI9** 351; *Vatica kelsallii* Ridl., **FMP1** 244; *Pachynocarpus umbonatus* *auct. non* Hook.f., **FMP1** 249 in part; *Pachynocarpus wallichii* (Dyer) King, **FMP1** 250 in part; *Pachynocarpus ridleyanus* *auct. non* (Brandis) T. Anderson., **FMP1** 250 in part; *Vatica wallichii* Dyer, **S74** 230; small or medium-sized tree; swampy lowland forest; widespread.
- 92.9.16 **Vatica perakensis** King, **S74** 226, **FMI9** 367; *Synaptea perakensis* (King) Ridl., **FMP1** 242; small to medium-sized tree; lowland and hill forest to 600 m; Kd, Pk.
- 92.9.17 **Vatica ridleyana** Brandis, **S74** 227, **FMI9** 352; *Pachynocarpus ridleyanus* (Brandis) T. Anderson., **FMP1** 250 in part; medium-sized tree, lowland forest; Sp.
- 92.9.18 **Vatica scortechinii** (King) Brandis, **FMP1** 244, **S74** 227, **FMI9** 357; medium-sized tree; lowland and hill forest to 1800 m; Tg, Pk, Ph, SI; endemic.

- 92.9.19 **Vatica stapfiana** (King) Slooten, **S74** 228, **FM19** 349; *Pachynocarpus stapfianus* King, **FMP1** 249; *Pachynocarpus umbonatus* auct. non Hook.f., **FMP1** 249 in part; *Pachynocarpus verrucosus* auct. non F. Heim, **FMP1** 249 in part; medium-sized tree; lowland forest; widespread.
- 92.9.20 **Vatica umbonata** (Hook.f.) Burck, **FM19** 349; *Pachynocarpus umbonatus* Hook.f., **FMP1** 249 in part; *Pachynocarpus verrucosus* F. Heim, **FMP1** 249 in part; tree; lowland and hill forest; Tg, Ph.
- 92.9.21 **Vatica venulosa** Blume, **FM19** 350; *Vatica kunstleri* (King) Brandis, **FMP1** 243; *Vatica bancana* Scheff., **S74** 217; small tree; swampy lowland forest; Pk, Ph.
93. DROSERACEAE
- 93.1.1 **Drosera burmannii** Vahl, **FMP1** 688, **FM14** 378; rosette herb to 30 cm tall; damp sandy spots, lowlands and mountains; widespread.
- 93.1.2 **Drosera indica** L., **FMP1** 688, **FM14** 379; herb to 30 cm tall; damp sandy spots; P. Langkawi, Pn.
- 93.1.3 **Drosera spathulata** Labill., **FM14** 379, **V15** 595; rosette herb to 20 cm tall; once from Gg Jerai, Kd.
94. EBENACEAE
- 94.1.1 **Diospyros adenophora** Bakh., **TFM3** 60; tree to 10 m tall; lowland forest, also on limestone; Kl, Ph, NS; endemic.
- 94.1.2 **Diospyros andamanica** (Kurz) Bakh., **TFM3** 61; *Maba racemosa* Ridl., **FMP5** 320; tree to 20 m tall; lowland forest, including that on limestone; Kl, Ph, Sl, NS, MI, Jh.
- 94.1.3 **Diospyros apiculata** Hiern, **FMP2** 285, **TFM3** 61; tree to 18 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Ph, NS, MI, Jh.
- 94.1.4 **Diospyros areolata** King & Gamble, **FMP2** 292, **TFM3** 63; tree to 50 m tall; lowland and hill forest to 700 m; Kd, Pn, Pk, Ph, Sl, NS, Jh.
- 94.1.5 **Diospyros argentea** Griff., **FMP2** 289, **TFM3** 63; tree to 11 m tall; lowland and hill forest to 800 m; Tg, Pk, Ph, Sl, NS, MI, Jh, Sp; endemic.
- 94.1.6 **Diospyros bibracteata** Bakh., **TFM3** 63; tree to 20 m tall; lowland, often disturbed, forest to 500 m; Ps, P. Langkawi, Kd, Kl, Pk, Ph; endemic.
- 94.1.7 **Diospyros blumutensis** Ng, **TFM3** 64; slender monopodial treelet to 3 m tall; lowland forest at 400 m; known only from type, Gg Belumut, Jh; endemic.

- 94.1.8 **Diospyros borneensis** Hiern, **TFM3** 64; tree to 13 m tall; lowland forest; Pk, Jh.
- 94.1.9 **Diospyros buxifolia** (Blume) Hiern, **TFM3** 64; *Diospyros microphylla* Bedd., **FMP2** 283; tree to 35 m tall; lowland and hill forest to 600 m; throughout.
- 94.1.10 **Diospyros cauliflora** Blume, **TFM3** 64; *Diospyros caliginosa* Ridl., **FMP2** 295; *Diospyros trunciflora* Ridl., **FMP2** 295; small tree to 17 m tall; lowland forest, sometimes on limestone; Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh.
- 94.1.11 **Diospyros clavigera** C.B. Clarke, **FMP2** 288, **TFM3** 65; tree to 46 m tall; lowland forest to 500 m; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.
- 94.1.12 **Diospyros confertiflora** (Hiern) Bakh., **TFM3** 65; *Maba perakensis* King & Gamble, **FMP2** 280; tree to 27 m tall; lowland to montane forest at 1250 m; Kd, Pn, Kl, Tg, Ph, Sl, Jh.
- 94.1.13 **Diospyros conformis** Bakh., **TFM3** 65; tree to 20 m tall; lowland forest; only known from type, Lenggong, Pk; endemic.
- 94.1.14 **Diospyros confusa** Bakh., **TFM3** 67; tree to 17 m tall; lowland forest; Tg, Jh, Sp.
- 94.1.15 **Diospyros coriacea** Hiern, **TFM3** 67; tree; lowland forest; thrice from Sp.
- 94.1.16 **Diospyros daemona** Bakh., **TFM3** 67; tree; lowland forest, once on limestone; Kd, Kl, Ph (once each); endemic.
- 94.1.17 **Diospyros dictyoneura** Hiern, **TFM3** 68; tree to 20 m tall; lowland and hill forest to 1000 m; Kd, Tg, Pk, Ph, Jh.
- 94.1.18 **Diospyros diepenhorstii** Miq., **TFM3** 68; *Diospyros pyrifer* Ridl., **FMP2** 294; tree to 17 m tall; lowland forest; Kl, Pk, Ph, Sl, Sp.
- 94.1.19 **Diospyros elegantissima** Bakh., **TFM3** 70; *Maba elegans* Ridl., **FMP2** 281; tree to 5 m tall; lowland forest; Pk, Ph; endemic.
- 94.1.20 **Diospyros ellipsoidea** King & Gamble, **FMP2** 290, **TFM3** 70; tree to 14 m tall; lowland forest to 700 m; Pk, Sl, Jh.
- 94.1.21 **Diospyros ferrea** (Willd.) Bakh., **TFM3** 71; *Maba buxifolia* Pers., **FMP2** 281; tree to 12 m tall; sandy and rocky shores, also on limestone; widespread.
- 94.1.22 **Diospyros foxworthyi** Bakh., **TFM3** 71; tree to 23 m tall; hill forest to 1100 m; Kl, Tg, Pk, Ph; endemic.
- 94.1.23 **Diospyros frutescens** Blume, **TFM3** 73; *Diospyros cymosa* Ridl., **FMP2** 293; *Diospyros kunstleri* King & Gamble, **FMP2** 293; tree to 10 m tall; lowland forest; Kl, Tg, Pk, Ph.

- 94.1.24 **Diospyros gambleana** Bakh., **TFM3** 73; tree; hill forest; twice from Keladang Range, Pk; endemic.
- 94.1.25 **Diospyros hasseltii** Zoll., **TFM3** 73; *Diospyros brachiata* King & Gamble, **FMP2** 293; *Diospyros horsfieldii* Hiern, **FMP2** 293; tree to 20 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph.
- 94.1.26 **Diospyros insidiosa** Bakh., **TFM3** 74; tree to 15 m tall; lowland forest; twice from P. Tioman, Ph; endemic.
- 94.1.27 **Diospyros ismailii** Ng, **TFM3** 74; tree to 27 m tall; lowland and hill forest to 1000 m; Kd, Tg, Ph, Sl, NS, Jh; endemic.
- 94.1.28 **Diospyros johorensis** Ng, **TFM3** 74; tree to 17 m tall; lowland forest; known only from type, Gg Panti, Jh; endemic.
- 94.1.29 **Diospyros kingii** Bakh., **TFM3** 74; small tree; hill forest; thrice from Pk; endemic.
- 94.1.30 **Diospyros kurzii** Hiern, **FMP2** 286, **TFM3** 76; *Diospyros wrayi* King & Gamble, **FMP2** 283; *Diospyros pubicarpa* Ridl., **FMP2** 286; tree to 30 m tall; lowland forest to 500 m, on limestone as well; Ps, Pk, Ph, Sl.
- 94.1.31 **Diospyros lanceifolia** Roxb., **TFM3** 76; *Diospyros lucida* Wall. ex A.DC., **FMP2** 286; *Diospyros clavigera* C.B. Clarke var. *pachyphylla* (C.B. Clarke) Ridl., **FMP2** 288; tree to 20 m tall; lowland and hill forest to 700 m; throughout.
- 94.1.32 **Diospyros latisepala** Ridl., **FMP2** 294, **TFM3** 76; tree to 16 m tall; lowland to lower montane forest at 1000 m; throughout.
- 94.1.33 **Diospyros maingayi** (Hiern) Bakh., **TFM3** 76; *Diospyros bilocularis* Oliv., **FMP2** 288; tree to 40 m tall; lowland and hill forest to 600 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 94.1.34 **Diospyros malabarica** (Descr.) Kotel., **TFM3** 77; *Diospyros siamensis* auct. non Hochr., **FMP2** 288; tree to 37 m tall; open country; Kd, Tg, Pk, Ph.
- 94.1.35 **Diospyros montana** Roxb., **TFM3** 79; *Diospyros cordifolia* Roxb., **FMP2** 295; tree to 7 m tall; dry lowland forest; P. Langkawi.
- 94.1.36 **Diospyros nutans** King & Gamble, **FMP2** 294, **TFM3** 79; tree to 17 m tall; lowland and hill forest to 700 m; Kl, Pk, Ph, Sl, NS, Ml, Jh; endemic.
- 94.1.37 **Diospyros pauciflora** King & Gamble, **FMP2** 290, **TFM3** 79; tree to 10 m tall; lowland and hill forest to 600 m; Tg, Pk, Jh.
- 94.1.38 **Diospyros penangiana** King & Gamble, **FMP2** 289, **TFM3** 80; tree to 27 m tall; lowland forest to 500 m; Kd, Pn, Kl, Pk, Ph, NS, Ml; endemic.

- 94.1.39 **Diospyros pendula** Hasselt *ex* Hassk., **TFM3** 80; *Diospyros oleifolia* Wall. *ex* A.DC., **FMP2** 292; tree to 30 m tall; lowland and hill forest to 1100 m; Kd, Pn, Tg, Pk, Ph, Sl, Jh.
- 94.1.40a **Diospyros pilosanthera** Blanco var. **chikusensis** Ng, **TFM3** 80; tree to 27 m tall; swampy lowland forest; Pk; endemic variety.
- 94.1.40b **Diospyros pilosanthera** Blanco var. **helferi** (C.B. Clarke) Bakh., **TFM3** 81; *Diospyros helferi* C.B. Clarke, **FMP2** 292; tree to 17 m tall; lowland forest; Ps, Kd, P. Langkawi, Kl.
- 94.1.40c **Diospyros pilosanthera** Blanco var. **nurii** Ng, **TFM3** 81; tree to 17 m tall; peat swamp forest; Sl; endemic variety.
- 94.1.40d **Diospyros pilosanthera** Blanco var. **oblonga** (Wall. *ex* G. Don) Ng, **TFM3** 81; *Diospyros oblonga* Wall. *ex* G. Don, **FMP2** 291; tree to 24 m tall; lowland and hill forest to 900 m; Kd, Pn, Kl, Tg, Pk, Ph, Jh, Sp.
- 94.1.41 **Diospyros pyrrocampa** Miq., **TFM3** 83; *Diospyros reflexa* King & Gamble, **FMP2** 292; tree to 30 m tall; lowland and hill forest to 900 m; Kd, Tg, Pk, Sl, NS, Ml, Jh.
- 94.1.42 **Diospyros retrofacta** Bakh., **TFM3** 83; tree to 21 m tall; limestone hills; Ps, Kl, Pk, Ph.
- 94.1.43 **Diospyros ridleyi** Bakh., **TFM3** 84; tree to 30 m tall; lowland and hill forest to 1200 m; Pn, Tg, Ph, Sl, Jh; endemic.
- 94.1.44 **Diospyros rigida** Hiern, **FMP2** 291, **TFM3** 84; tree to 30 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, Jh.
- 94.1.45 **Diospyros rufa** King & Gamble, **FMP2** 290, **TFM3** 84; tree to 27 m tall; lowland to lower montane forest at 1300 m; Kd, Kl, Tg, Pk, Ph, NS, Ml, Jh; endemic.
- 94.1.46 **Diospyros scortechinii** King & Gamble, **FMP2** 284, **TFM3** 86; tree to 20 m tall; hill and montane forest at 400–1500 m; Kl, Tg, Pk, Ph, NS; endemic.
- 94.1.47 **Diospyros selangorensis** Bakh., **TFM3** 86; small tree; montane forest; known only from type, Gg Ulu Semangkok, Sl; endemic.
- 94.1.48 **Diospyros siamang** Bakh., **TFM3** 86; tree to 47 m tall; swamp forest; Sl, Jh, Sp.
- 94.1.49 **Diospyros singaporensis** Bakh., **TFM3** 86; tree to 34 m tall; lowland forest to 600 m; Kd, Pk, Ph, Sl, NS, Ml, Jh; endemic.
- 94.1.50 **Diospyros styraciformis** King & Gamble, **FMP2** 288, **TFM3** 87; tree to 30 m tall; lowland and hill forest to 1000 m; Ph, Sl, Ml, Jh, Sp.

- 94.1.51 **Diospyros subrhomboidea** King & Gamble, **FMP2** 283, **TFM3** 87; tree to 8 m tall; lowland and hill forest to 1000 m; Pn, Pk, Sl.
- 94.1.52 **Diospyros sumatrana** Miq., **TFM3** 87; *Diospyros graciliflora* auct. non Hiern, **FMP2** 284; *Diospyros dumosa* King & Gamble, **FMP2** 285; *Diospyros flavicans* (Wall.) Hiern, **FMP2** 285; *Diospyros tubicalyx* Ridl., **FMP2** 285; *Diospyros hendersonii* Ridl., **FMP5** 320; tree to 30 m tall; lowland to montane forest at 1500 m; common throughout.
- 94.1.53 **Diospyros tahanensis** Bakh., **TFM3** 89; tree to 20 m tall; lowland forest; Ph.
- 94.1.54 **Diospyros toposia** Buch.-Ham., **TFM3** 89; tree to 27 m tall; lowland and hill forest to 700 m; Tg, Ph, Jh.
- 94.1.55 **Diospyros toposioides** King & Gamble, **FMP2** 290, **TFM3** 89; tree to 13 m tall; lowland and hill forest to 700 m; Kd, Kl, Pk, Ph, Sl.
- 94.1.56 **Diospyros transistoria** Bakh., **TFM3** 90; tree to 30 m tall; lowland forest, sometimes on limestone; P. Langkawi, Pk.
- 94.1.57 **Diospyros trengganuensis** Ng, **TFM3** 90; tree to 21 m tall; lowland and hill forest; Tg; endemic.
- 94.1.58 **Diospyros tristis** King & Gamble, **FMP2** 289, **TFM3** 90; tree to 20 m tall; lowland to lower montane forest at 1200 m; Kd, Tg, Pk, Ph, Sl, Jh; endemic.
- 94.1.59 **Diospyros truncata** Zoll. & Moritzi, **TFM3** 91; tree to 10 m tall; montane forest at 1300–1700 m; Ph.
- 94.1.60 **Diospyros undulata** Wall. ex G. Don, **TFM3** 91; tree to 10 m tall; limestone hills; Ps, Kd, P. Langkawi.
- 94.1.61a **Diospyros venosa** Wall. ex A. DC. var. **olivacea** (King & Gamble ex F.N. Williams) Bakh., **TFM3** 93; *Maba olivacea* King & Gamble ex F.N. Williams, **FMP2** 279; lowland forest; P. Langkawi, Pk, Ph; endemic variety.
- 94.1.61b **Diospyros venosa** Wall. ex A. DC. var. **venosa**, **TFM3** 93; *Maba venosa* (Wall. ex A. DC.) King & Gamble, **FMP2** 279; *Maba merguensis* Hiern, **FMP2** 280; tree to 27 m tall; lowland to lower montane forest at 1300 m; throughout.
- 94.1.62 **Diospyros wallichii** King & Gamble ex F.N. Williams, **FMP2** 291, **TFM3** 93; tree to 20 m tall; lowland and hill forest to 700 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, MI.
- 94.1.63 **Diospyros yeobii** Bakh., **TFM3** 94; tree to 20 m tall; lowland forest; Pk, Ph.



## 95. ELAEAGNACEAE

- 95.1.1 **Elaeagnus confertus** Roxb., **FMI10** 153 '*conferta*'; *Elaeagnus latifolius* L., **FMP3** 149 '*latifolia*'; liana to 12 m long; hill forest; Pn, Pk.

## 96. ELAEOCARPACEAE

- 96.1.1 **Elaeocarpus acmosepalus** Ridl., **FMP1** 314, **TFM4** 86, stilt-rooted tree to 20 m tall; swamp forest; Ph, Sl, Jh.
- 96.1.2 **Elaeocarpus acronodia** Mast. ssp. **sumatranus** Coode, **C20** 274; tree 5–17 m tall; upper montane forest; (?) once each Gg Rabong, Kl, and Gg Lawit, Tg.
- 96.1.3 **Elaeocarpus angustifolius** Blume, **TFM4** 86; *Elaeocarpus ganitrus* Roxb., **FMP1** 310; tree to 30 m tall; lowland and hill forest to 1000 m; Kd, Tg, Pk, Ph, Sl.
- 96.1.4 **Elaeocarpus apiculatus** Mast., **TFM4** 86; tree to 30 m tall; lowland and hill forest to 330 m; Kd, Kl, Tg, Pk; endemic.
- 96.1.5 **Elaeocarpus cruciatus** Corner, **TFM4** 87; tree to 20 m tall; montane forest at 1200–1800 m; Tg, Ph; endemic.
- 96.1.6 **Elaeocarpus eriobotryoides** Ridl., **FMP1** 320, **TFM4** 87; tree to 15 m tall; montane forest at 1220–1510 m; Ph/Sl borders; endemic.
- 96.1.7a **Elaeocarpus ferrugineus** (Jack) Steud. ssp. **ferrugineus**, **TFM4** 87; *Elaeocarpus jackianus* Wall. ex King, **FMP1** 318; tree to 28 m tall; lowland to lower montane forest at 1200 m; common throughout.
- 96.1.7b **Elaeocarpus ferrugineus** (Jack) Steud. ssp. **glabrescens** (Mast.) Coode, **C20** 282; *Elaeocarpus glabrescens* Mast., **FMP1** 319, **TFM4** 88; tree to 24 m tall; hill and montane forest at 450–1830 m; Kd, Pn, Tg, Ph, Sl, NS, Jh; endemic subspecies.
- 96.1.8a **Elaeocarpus floribundus** Blume var. **floribundus**, **FMP1** 313, **TFM4** 88; tree to 30 m tall; lowland to montane forest at 1500 m; Kd, Kl, Pk, Ph, Sl, NS, Jh.
- 96.1.8b **Elaeocarpus floribundus** Blume var. **tahanensis** (M.R. Hend.) Ng, **TFM4** 88; *Elaeocarpus tahanensis* M.R. Hend., **H34** 74; small tree; montane forest above 1000 m; Fraser's Hill and Gg Tahan, Ph; endemic variety.
- 96.1.9 **Elaeocarpus fraseri** Coode, **C21** 242; *Elaeocarpus robustus* Roxb. var. *ovalis* Ridl., **FMP1** 313; tree to 12 m tall; montane forest at 1200 m; Fraser's Hill, Ph; endemic.

- 96.1.10 ***Elaeocarpus grandiflorus*** Sm., **TFM4** 88; tree to 20 m tall; hill and montane forest to 1200 m; Kd, Ph, Sl.
- 96.1.11 ***Elaeocarpus griffithii*** (Wight) A. Gray, **FMP1** 316, **TFM4** 89; *Elaeocarpus paniculatus* Wall., **FMP1** 315; tree usually only to 7 m tall; swampy lowland forest, near rivers; Kd, Pk, Ph, Sl, Jh, Sp.
- 96.1.12 ***Elaeocarpus knuthii*** Merr. ssp. ***cuspidatus*** (Ridl.) Coode, **C20** 287; *Elaeocarpus reticulatus* var. *cuspidatus* Ridl., **FMP1** 321; tree; montane forest at 900–1500 m; Pk, Ph; endemic subspecies.
- 96.1.13 ***Elaeocarpus macrocarpus*** Miq., **C19** 98, tree, once from Mersing F.R., Jh.
- 96.1.14 ***Elaeocarpus macrocerus*** (Turcz.) Merr., **TFM4** 90; *Elaeocarpus obtusus auct. non* Blume, **FMP1** 317; tree to 45 m tall; tidal swamps and river estuaries; Kd, Tg, Pk, Ph, Sl, NS, Jh.
- 96.1.15 ***Elaeocarpus mastersii*** King, **FMP1** 319, **TFM4** 90, **C20** 288; tree to 20 m tall; lowland to montane forest at 2000 m; common throughout.
- 96.1.16 ***Elaeocarpus nanus*** Corner, **TFM4** 90, **C20** 292; *Elaeocarpus reticulatus* (*non* Sm.) Ridl., **FMP1** 320; bushy tree to 8 m tall; upper montane forest at 1000–2000 m; Pk, Ph, Sl, Jh; type subspecies endemic.
- 96.1.17a ***Elaeocarpus nitidus*** Jack var. ***nitidus***, **FMP1** 314, **TFM4** 91; *Elaeocarpus parvifolius* Wall., **FMP1** 310; tree to 24 m tall; lowland to montane forest at 1500 m; common throughout.
- 96.1.17b ***Elaeocarpus nitidus*** Jack var. ***salicifolius*** (King) Ng, **TFM4** 91; *Elaeocarpus salicifolius* King, **FMP1** 313; tree to 10 m tall; lowland forest; Ph, Jh, Sp; endemic variety.
- 96.1.17c ***Elaeocarpus nitidus*** Jack var. ***velutinus*** Ng, **TFM4** 91; tree to 21 m tall; montane forests at 800–1500 m; K1, Ph, Jh; endemic variety.
- 96.1.17d ***Elaeocarpus nitidus*** Jack var. ***wrayi*** (King) Ng, **TFM4** 91; *Elaeocarpus wrayi* King, **FMP1** 312; tree to 21 m tall; montane forest at 1300–1700 m; Tg, Pk, Ph; endemic variety.
- 96.1.18 ***Elaeocarpus palembanicus*** (Miq.) Corner, **TFM4** 91; *Elaeocarpus hullettii* King, **FMP3** 316; *Elaeocarpus leptomischus* Ridl., **FMP3** 320; tree generally to 15 m tall; lowland and hill forest to 900 m; Kd, Pn, K1, Tg, Ph, Sl, NS, Jh.
- 96.1.19 ***Elaeocarpus pedunculatus*** Wall. *ex* Mast., **FMP1** 316, **TFM4** 92; tree to 27 m tall; lowland and hill forest to 670 m; common throughout.
- 96.1.20 ***Elaeocarpus petiolatus*** (Jack) Wall., **FMP1** 315, **TFM4** 92; tree to 21 m tall; lowland and hill forest to 500 m; widespread.

- 96.1.21 ***Elaeocarpus polystachyus*** Wall. *ex* Müll.Berol., **FMP1** 319, **TFM4** 92; tree to 24 m tall; lowland and hill forest to 1100 m; Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp; endemic.
- 96.1.22 ***Elaeocarpus pseudopaniculatus*** Corner, **TFM4** 93; tree to 12 m tall; montane forest; Fraser's Hill and Gg Tahan, Ph.
- 96.1.23 ***Elaeocarpus reticosus*** Ridl., **FMP1** 321, **TFM4** 94; shrub to 5 m tall; mountain ridges and summits above 1000 m; Kl, Pk, Ph, Jh; endemic.
- 96.1.24a ***Elaeocarpus robustus*** Roxb. var. ***collinus*** Coode, **C19** 90; tree, montane forest at about 1400 m; Gg Mandi Angin, Tg; endemic variety.
- 96.1.24b ***Elaeocarpus robustus*** Roxb. var. ***megacarpus*** Coode, **C19** 90; *Elaeocarpus macrocarpus* (*non* Miq.) Ridl., **FMP1** 321; tree, lowlands to mountains; widespread.
- 96.1.24c ***Elaeocarpus robustus*** Roxb. var. ***robustus***, **FMP1** 313, **TFM4** 94, **C19** 90; tree, lowland and hill forest; widespread.
- 96.1.25 ***Elaeocarpus rugosus*** Roxb., **FMP1** 318, **TFM4** 94; *Elaeocarpus kunstleri* King, **FMP1** 317; tree to 39 m tall; lowland and hill forest to 700 m; Tg, Pk, Ph, Sl, Jh, Sp; endemic.
- 96.1.26 ***Elaeocarpus sallehianus*** Ng, **TFM4** 95 '*sallehiana*'; tree to 30 m tall; hill forest; Tg, Ph; endemic.
- 96.1.27a ***Elaeocarpus stipularis*** Blume var. ***latifolius*** King, **TFM4** 96 '*latifolia*'; tree to 30 m tall; lowland forest to 300 m; Pk, Sl.
- 96.1.27b ***Elaeocarpus stipularis*** Blume var. ***stipularis***, **FMP1** 311, **TFM4** 95; tree to 30 m tall; lowland to lower montane forest at 1250 m; throughout.
- 96.1.28 ***Elaeocarpus submonoceras*** Miq., **C21** 251; *Elaeocarpus longifolius* Blume var. *fusiformis* Corner, **TFM4** 89; tree to 8 m tall; riverbank tree; Sg Rompin, Ph.
- 96.1.29 ***Elaeocarpus symingtonii*** Ng, **TFM4** 96; tree to 7 m tall; mountain tops above 1400 m; Tg, Pk, Ph; endemic.
- 96.2.1 ***Sloanea javanica*** (Miq.) Syzyl. *ex* K. Schum., **FMP1** 308, **TFM4** 97; tree to 27 m tall; lowland forest to 450 m; Sl, NS, Jh.
- 96.2.2 ***Sloanea malayana*** Coode, **TFM4** 97; tree to 20 m tall; lowland and hill forest to 1000 m; Ph, Sl; endemic.
- 96.2.3 ***Sloanea sigun*** (Blume) K. Schum., **TFM4** 97; tree to 36 m tall; montane forest at 1000–1500 m; Ph, Sl.

## 97. EPACRIDACEAE

- 97.1.1 **Styphelia malayana** (Jack) Spr., **FM16** 426, **TFM2** 32; *Leucopogon malayanus* Jack, **FMP2** 223 incl. var. *moluccanus* (non Scheff.) Ridl.; shrub to 5 m tall; upper montane forest, lowland sandy heaths; widespread.

## 98. ERICACEAE

- 98.1.1 **Agapetes scortechinii** (King & Gamble) Sleumer, **FM16** 879, **TFM3** 97; *Pentapterygium scortechinii* King & Gamble, **FMP2** 205; sprawling shrub or epiphyte; upper montane forest above 1200 m; Ph; endemic.
- 98.2.1 **Cheilotheca malayana** Scort. ex Hook.f., **FMP2** 222, **K08** 83, **TFM3** 97; *Andresia malayana* (Scort. ex Hook.f.) Sleumer, **FM16** 669; fleshy white herbaceous parasite to 25 cm long; hill forest; thrice from Pk (Larut and Maxwell's Hill); endemic.
- 98.3.1 **Diplycosia elliptica** Ridl., **FMP2** 213, **FM16** 723, **TFM3** 98; *Diplycosia microphylla* auct. non Becc., **FMP2** 213; *Diplycosia cordifolia* Ridl., **FMP2** 214; epiphytic or terrestrial shrub to 1 m tall; montane forest at 900–1800 m; Kl, Pk, Ph, Sl.
- 98.3.2 **Diplycosia heterophylla** Blume var. **latifolia** (Blume) Sleumer, **FMP2** 214, **FM16** 738, **TFM3** 98; *Diplycosia latifolia* Blume, **FMP2** 214; shrub or climber, sometimes epiphytic; montane forest at 1200–1700 m; Kl, Pk, Ph, Sl.
- 98.3.3a **Diplycosia lancifolia** Ridl. var. **calvescens** Sleumer, **FMP2** 214, **FM16** 728, **TFM3** 98; shrub; known from type, Gg Tahan, Ph; endemic.
- 98.3.3b **Diplycosia lancifolia** Ridl. var. **lancifolia**, **FMP2** 214, **FM16** 728, **TFM3** 98; shrub; known from type, Gg Benom, Ph; endemic.
- 98.3.4 **Diplycosia pseudorufescens** Sleumer var. **elliptifolia** Sleumer, **FM16** 711, **TFM3** 98; shrub or small tree to 6 m tall; upper montane forest at 1300–1500 m; Gg Korbu, Pk, Gg Benom, Ph.
- 98.4.1 **Gaultheria hirta** Ridl., **FMP2** 213, **FM16** 691, **TFM3** 99; scandent shrub; upper montane forest at 1370–1525 m; twice from Gg Korbu, Pk; endemic.
- 98.4.2 **Gaultheria leucocarpa** Blume, **FMP2** 212, **FM16** 692, **TFM3** 99; scandent shrub to 3 m tall; montane forest above 1000 m; Pk, Ph.
- 98.4.3 **Gaultheria malayana** Airy Shaw, **FM16** 690, **TFM3** 99; *Gaultheria fragrantissima* auct. non Wall., **FMP2** 212; shrub to 2 m tall; montane forest above 1300 m; Pk, Ph; endemic.

- 98.5.1 **Lyonia ovalifolia** (Wall.) Drude, **FMi6** 675, **TFM3** 99; *Pieris ovalifolia* (Wall.) D. Don, **FMP2** 215; shrub or small tree to 8 m tall; montane forest above 1200 m; Kd, Pk, Ph.
- 98.6.1 **Pernettyopsis malayana** King & Gamble, **FMP2** 221, **FMi6** 676, **TFM3** 97; *Pernettyopsis subglabra* King & Gamble, **FMP2** 221; *Pernettyopsis breviflora* (Ridl.) Ridl., **FMP2** 222; epiphytic or terrestrial shrub to 60 cm tall; upper montane forest above 1500 m; Pk, Ph, Sl; endemic.
- 98.7.1 **Rhododendron hybridogenum** Sleumer, **FMi6** 537; shrub; montane forest; once from Cameron Highlands; endemic.
- 98.7.2a **Rhododendron jasminiflorum** Hook. var. **jasminiflorum**, **FMP2** 218 in part, **FMi6** 566, **TFM3** 101 in part; scrambling shrub to 2.5 m tall, usually epiphytic; open places at 1100–1500 m; Gg Ledang, Jh; endemic variety.
- 98.7.2b **Rhododendron jasminiflorum** Hook. var. **oblongifolium** Sleumer, **FMi6** 567; shrub; montane forest; P. Tioman; Gg Belumut, Jh.
- 98.7.2c **Rhododendron jasminiflorum** Hook. var. **punctatum** Ridl., **FMi6** 566; *Rhododendron jasminiflorum* Hook. var. *maculatum* Ridl., **FMP2** 218; shrub to 3 m tall; montane forest at 850–1800 m; Kd, Pk, Ph; endemic variety.
- 98.7.3 **Rhododendron javanicum** (Blume) Benn. var. **teysmannii** (Miq.) King & Gamble, **FMi6** 625, **TFM3** 102; *Rhododendron teysmannii* Miq., **FMP2** 216; epiphytic shrub; on riverside trees in the lowlands; Kl, Ph.
- 98.7.4 **Rhododendron klossii** Ridl., **FMP2** 218, **FMi6** 667, **TFM3** 102; shrub to 4 m tall; rocky ridges in the lowlands; Bt Raka Bintang and Tras, Ph.
- 98.7.5 **Rhododendron longiflorum** Lindl., **FMP2** 219, **FMi6** 640, **TFM3** 104; *Rhododendron orion* Ridl. var. *aurantiacum* Ridl., **FMP2** 217; terrestrial or epiphytic shrub to 4.5 m tall; lowland and hill forest to 1000 m, also on rocky ridges; Kd, Ph, Sl, Sp.
- 98.7.6 **Rhododendron malayanum** Jack, **FMP2** 219, **FMi6** 532, **TFM3** 102; epiphytic or terrestrial shrub to 3 m tall; montane forest at 1000–1800 m; Kl, Pk, Ph, Sl, Jh.
- 98.7.7 **Rhododendron mouleinese** Hook., **FMP2** 218, **FMi6** 666, **TFM3** 102; *Rhododendron leucobotrys* Ridl., **FMP2** 218; shrub to 10 m tall; montane forest at 1000–1500 m; Gg Jerai, Kd; Cameron Highlands, Ph.
- 98.7.8 **Rhododendron obscurum** Sleumer, **FMi6** 535; shrub to 3 m tall; montane forest at 2015 m; once from summit of Gg Benom, Ph; endemic (probably of hybrid origin).
- 98.7.9a **Rhododendron pauciflorum** King & Gamble var. **calocodon** (Ridl.) Sleumer, **FMi6** 591; *Rhododendron calocodon* Ridl., **FMP2** 219; epiphytic shrub; montane forest at 1500–1800 m; Sl; endemic.

- 98.7.9b **Rhododendron pauciflorum** King & Gamble var. **pauciflorum**, **FMP2** 219, **FMi6** 591, **TFM3** 102; *Rhododendron elegans* Ridl., **FMP2** 220; shrubby epiphyte to 2 m tall; montane forest at 1500–2100 m; Pk, Ph; endemic.
- 98.7.10 **Rhododendron perakense** King & Gamble, **FMP2** 216, **FMi6** 488, **TFM3** 101; epiphytic or terrestrial shrub to 2 m tall; montane forest at 1800 m; Cameron Highlands, Ph; endemic.
- 98.7.11 **Rhododendron robinsonii** Ridl., **FMP2** 216, **FMi6** 620, **TFM3** 102; *Rhododendron javanicum auct. non* (Blume) Benn., **FMP2** 216; epiphytic or sometimes terrestrial shrub to 3 m tall; montane forest at 1000–1800 m; Pk, Ph, Sl; endemic.
- 98.7.12 **Rhododendron seimundii** J.J. Sm., **FMi6** 490, **TFM3** 101; epiphytic or terrestrial shrub to 1.5 m tall; montane forest at about 1500 m; Gg Tahan, Ph; endemic.
- 98.7.13 **Rhododendron scortechinii** King & Gamble, **FMP2** 219, **FMi6** 490, **TFM3** 102; *Rhododendron orion* Ridl., **FMP2** 217; epiphytic or terrestrial shrub to 2 m tall; upper montane forest above 1500 m; Gg Bubu, Pk; Gg Benom & Gg Ulu Kali, Ph; endemic.
- 98.7.14 **Rhododendron spathulatum** Ridl., **FMP2** 220, **FMi6** 487, **TFM3** 101; epiphytic or terrestrial shrub to 1.5 m tall; montane forest at 1500–2100 m; Gg Korbu, Pk; Gg Siku, Ph; endemic.
- 98.7.15 **Rhododendron wrayi** King & Gamble, **FMP2** 217 incl. var. *elliptica* Ridl., **FMi6** 659, **TFM3** 101; *Rhododendron corruscum* Ridl., **FMP2** 217; *Rhododendron dubium* King & Gamble, **FMP2** 221; shrub or tree to 16 m tall; montane forest above 1000 m; Kl, Tg, Pk, Ph, Sl; endemic.
- 98.8.1 **Vaccinium acuminatissimum** Miq., **FMP2** 210, **FMi6** 761, **TFM3** 105; epiphytic or climbing shrub; lowland forest to 460 m; Pk, Sp.
- 98.8.2a **Vaccinium bancanum** Miq. var. **kunstleri** (King & Gamble) Sleumer, **FMi6** 842; *Vaccinium bancanum* Miq., **FMP2** 209 in part, **TFM3** 107 in part; *Vaccinium breviflos* Ridl., **FMP2** 208; shrub or small treelet, often epiphytic; montane forest; widespread.
- 98.8.2b **Vaccinium bancanum** Miq. var. **tenuinervium** J.J. Sm., **FMi6** 842; *Vaccinium bancanum* Miq., **FMP2** 209 in part, **TFM3** 107 in part; *Vaccinium wrayi* Ridl., **FMP2** 208; *Vaccinium ardisiiflorum* Ridl., **FMP2** 209; *Vaccinium eburneum* Ridl., **FMP2** 209; shrub or small treelet, often epiphytic; montane forest; widespread.
- 98.8.3 **Vaccinium bracteatum** Thunb., **FMi6** 801, **TFM3** 104; *Vaccinium malaccense* Wight, **FMP2** 211; *Vaccinium pubicarpum* Ridl., **FMP2** 211; shrub or small tree to 6 m tall; sandy seashores and mountains; commonest on East Coast.

- 98.8.4 **Vaccinium dialypetalum** J.J.Sm., **FM16** 753, **TFM3** 105; *Agapetes micrantha* Ridl., **FMP2** 205; *Agapetes perakensis* Ridl., **FMP2** 205; *Agapetes wrayi* Ridl., **FMP2** 205; *Agapetes pubescens* Ridl., **FMP5** 318; epiphytic climber; montane forest above 800 m; Tg, Pk, Ph, Sl, Jh.
- 98.8.5 **Vaccinium glabrescens** King & Gamble, **FMP2** 208, **FM16** 804, **TFM3** 105; *Vaccinium longibracteatum* Ridl., **FMP2** 208; shrub, sometimes epiphytic, to 5 m tall; montane forest above 1000 m; Kl, Tg, Pk, Ph, Sl; endemic.
- 98.8.6 **Vaccinium leptanthum** Miq., **FM16** 764, **TFM3** 107; small, usually epiphytic, shrub; lowland forest; Kl, Tg, Ph, Jh.
- 98.8.7 **Vaccinium littoreum** Miq., **FM16** 854, **TFM3** 107; *Vaccinium hasseltii* Miq., **FMP2** 209; shrub, often epiphytic; sandy shores, rocky ridges, montane forest; Kl, Tg, Pk, Ph, Sl, Jh, Sp.
- 98.8.8 **Vaccinium loranthifolium** Ridl., **FMP2** 208, **FM16** 853, **TFM3** 105; shrub to 4 m tall; upper montane forest; above 1800 m; Gg Rabong, Kl; Gg Korbu, Pk; Cameron Highlands, Ph; endemic.
- 98.8.9 **Vaccinium pseudodialypetalum** Ng, **TFM3** 105; epiphytic shrub; montane forest at 1000–1500 m; Sl/Ph border area; endemic.
- 98.8.10 **Vaccinium scortechinii** King & Gamble, **FMP2** 207, **FM16** 807, **TFM3** 104; epiphytic or terrestrial shrub; montane forest at 1500–1900 m; Pk, Ph; endemic.
- 98.8.11 **Vaccinium varingiifolium** (Blume) Miq., **FM16** 815, **TFM3** 107; *Vaccinium erythrinum* Hook., **FMP2** 211; shrub; montane forest at 1500–1900 m; Gg Bubu, Pk; Gg Mengkuang Lebak, Ph/Sl.
- 98.8.12a **Vaccinium viscifolium** King & Gamble var. **bicalcaratum** Sleumer, **FM16** 852, **TFM3** 105; shrub; montane forest; Gg Mandi Angin, Tg; Gg Jasar, Ph; endemic variety.
- 98.8.12b **Vaccinium viscifolium** King & Gamble var. **viscifolium**, **FMP2** 207, **FM16** 852, **TFM3** 105; *Vaccinium decorum* Ridl., **FMP2** 207; *Vaccinium perakense* Ridl., **FMP2** 207; shrub to 5 m tall, sometimes epiphytic; hill and montane forest; Kl, Pk, Ph, Sl, NS, Jh.
- 98.8.13 **Vaccinium whitmorei** Ng, **TFM3** 107; shrub or small tree; montane forest at 1000–1700 m; Gg Ulu Kali and Fraser's Hill, Sl/Ph; endemic.

## 99. ERYTHROXYLACEAE

- 99.1.1 **Erythroxylum cuneatum** (Miq.) Kurz, **FM15** 548, **TFM1** 194; *Erythroxylum burmanicum* Griff., **FMP1** 324; tree to 30 m tall; lowland and hill forest, common near the sea; throughout.

99.1.2 **Erythroxylum kochummenii** Ng, **N02** 235; tree to 30 m tall; lowland and hill forest; Ulu Lebir, Kl, & Ulu Gombak, Sl; endemic.

100. ESCALLONIACEAE

100.1.1 **Itea macrophylla** Wall., **FMP1** 687, **TFM4** 462; small tree; montane forest above 1200 m; Gg Mandi Angin, Tg, and Gg Tahan, Ph.

100.2.1 **Polyosma conocarpa** Ridl., **FMP1** 684, **TFM4** 464; tree to 15 m tall; lowland forest; throughout.

100.2.2 **Polyosma coriacea** King, **FMP1** 685, **TFM4** 465; shrub to 3 m tall; montane forest above 1400 m; Tg, Pk; endemic.

100.2.3 **Polyosma fasciculata** Ridl., **FMP1** 685, **TFM4** 465; tree to 7 m tall; montane forest above 1000 m; Gg Jerai, Kd; endemic.

100.2.4 **Polyosma fragrans** Benn., **FMP1** 684, **TFM4** 465; tree to 17 m tall; lowland to montane forest; Ph, Sl, Jh.

100.2.5 **Polyosma glaucescens** Ridl., **FMP1** 684, **TFM4** 46; tree to 7 m tall; montane forest above 1000 m; Gg Tahan and Gg Tapis, Ph; endemic.

100.2.6 **Polyosma integrifolia** Blume, **FMP1** 683, **TFM4** 466; *Polyosma grandis* Ridl., **FMP1** 683; tree to 14 m tall; montane forest above 1000 m; Pk, Ph, Sl.

100.2.7 **Polyosma kingiana** Schltr., **TFM4** 46; *Polyosma flavovirens* Ridl., **FMP1** 686; tree to 20 m tall; lowland forest; Pn, Kl, Pk, Sl, Sp.

100.2.8 **Polyosma laetevirens** Griff. ex King, **FMP1** 685, **TFM4** 467; tree to 17 m tall; lowland and hill forest to 1000 m; Pn, Kl, Pk, Ph, Sl, NS, Jh.

100.2.9 **Polyosma nullii** B.C. Stone, **S48** 258, **TFM4** 467; shrub to 2.5 m tall; montane forest above 1300 m; Genting Highlands, Ph; endemic.

100.2.10 **Polyosma parviflora** King, **TFM4** 468; *Polyosma ilicifolia auct. non* Blume, **FMP1** 683; tree to 8 m tall; montane forest above 1300 m; Tg, Pk, Ph, Sl; endemic.

100.2.11 **Polyosma ridleyi** King, **FMP1** 686, **TFM4** 468; tree to 22 m tall; lowland forest to 600 m; Jh, Sp.

100.2.12 **Polyosma robusta** (Ridl.) L.G. Saw, **TFM4** 468; *Polyosma laetevirens* Griff. ex King var. *robusta* Ridl., **FMP1** 686; small tree; montane forest above 1600 m; Gg Tahan, Ph; endemic.

100.2.13 **Polyosma scortechinii** King, **FMP1** 685, **TFM4** 468; tree to 30 m tall; montane forest above 1000 m; Pk, Ph; endemic.



- 100.2.14 **Polyosma** sp. 1, **TFM4** 469; tree to 13 m tall; lowland forest; once from Gg Lawit, Tg; endemic.
- 100.2.15 **Polyosma** sp. 2, **TFM4** 469; tree to 15 m tall; lowland forest; once from Jh; endemic.
- 100.2.16 **Polyosma** sp. 3, **TFM4** 469; tree to 10 m tall; montane forest above 1600 m; Cameron Highlands, Ph; endemic.

## 101. EUPHORBIACEAE

- 101.1.1 **Acalypha caturus** Blume, **TFM2** 51; shrub; hill and montane forest; Sl.
- 101.1.2 **Acalypha indica** L., **FMP3** 274, **TFM2** 51; herb about 30 cm tall; common weed; widespread.
- 101.1.3 **Acalypha lanceolata** Willd., **TFM2** 51; *Acalypha fallax* Müll.Arg., **FMP3** 274; hairy herb to 1 m tall; waste ground; north of Malaya.
- 101.1.4 **Acalypha siamensis** Oliv. ex Gage, **FMP3** 274, **TFM2** 51; shrub to 4 m tall; open sandy places; Ml and Ph northward.
- 101.2.1a **Actephila excelsa** (Dalzell) Müll.Arg. var. **acuminata** Airy Shaw, **TFM2** 52; *Actephila excelsa* (Dalzell) Müll.Arg., **FMP3** 196; shrub to 3 m tall; lowland forest, sometimes on limestone; scattered throughout.
- 101.2.1b **Actephila excelsa** (Dalzell) Müll.Arg. var. **javanica** (Miq.) Pax & K. Hoffm., **TFM2** 52; *Actephila javanica* Miq., **FMP3** 196; shrub about 1 m tall; near the sea, often on islands; P. Langkawi, P. Jarak, P. Tioman, Jh, Sp.
- 101.2.2 **Actephila ovalis** (Ridl.) Gage, **FMP3** 196, **TFM2** 51; shrub; mostly on limestone; Ps, P. Langkawi, Kd, Pn.
- 101.3.1 **Agrostistachys gaudichaudii** Müll.Arg., **FMP3** 268, **TFM2** 53; small tree to 15 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Jh, Sp.
- 101.3.2a **Agrostistachys longifolia** (Wight) Benth. var. **leptostachya** (Pax & K. Hoffm.) Whitmore, **FMP3** 53; small tree to 9 m tall; lowland and hill forest; Kd, Tg, Pk, Ph.
- 101.3.2b **Agrostistachys longifolia** (Wight) Benth. var. **longifolia**. **FMP3** 53; *Agrostistachys borneensis* Becc., **FMP3** 268; *Agrostistachys sessilifolia* (Kurz) Pax & K. Hoffm., **FMP3** 267; small tree to 9 m tall; lowland to lower montane forest at 1050 m; throughout.
- 101.4.1 **Alchornea adenophila** Pax & K. Hoffm., **FMP3** 278, **TFM2** 54; shrub; lowland forest; Pk, Ph; endemic.

- 101.4.2 **Alchornea rhodophylla** Pax & K. Hoffm., **FMP3** 278, **TFM2** 54; shrub to 3 m tall; hill and montane forest; Kd, Pn, Pk, Ph, Sl; endemic.
- 101.4.3a **Alchornea rugosa** (Lour.) Müll.Arg. var. **macrocarpa** Airy Shaw, **TFM2** 53; shrub; lowland forest; Kl, Ph.
- 101.4.3b **Alchornea rugosa** (Lour.) Müll.Arg. var. **rugosa**, **TFM2** 53; *Alchornea javensis* (Endl. ex Hassk.) Müll.Arg., **FMP3** 278; shrub to 1.5 m tall; lowland forest; Pk northward.
- 101.4.4 **Alchornea tiliifolia** (Benth.) Müll.Arg., **FMP3** 277, **TFM2** 54; shrub; once from ?Gg Panti, Jh.
- 101.4.5 **Alchornea villosa** (Benth.) Müll.Arg., **FMP3** 277, **TFM2** 54; shrub; lowland forests and forest margins; Pk and Ph southward.
- 101.5.1 **Antidesma brachybotrys** Airy Shaw, **TFM2** 57; shrub; lowland and hill forest; Pk, Jh.
- 101.5.2 **Antidesma coriaceum** Tul., **FMP3** 233, **TFM2** 57; *Antidesma cordatum* Airy Shaw, **TFM2** 56; small tree to 15 m tall; lowland to lower montane forest at 1500 m; only missing from the far north.
- 101.5.3 **Antidesma cruciforme** Gage, **FMP3** 230, **TFM2** 55; small tree; montane forest at 1000–1400 m; Pk, Sl; endemic.
- 101.5.4 **Antidesma cuspidatum** Müll.Arg., **FMP3** 232, incl. var. *leiodiscus* Ridl., **TFM2** 58; small tree; lowland forest; common throughout.
- 101.5.5 **Antidesma ghaesembilla** Gaertn., **FMP3** 230, **TFM2** 56; small tree to 6 m tall; lowland to montane forest at 1200 m; Ml northward.
- 101.5.6 **Antidesma helferi** Hook.f., **FMP3** 228, **TFM2** 58; tree to 18 m tall; swampy lowland forest; Kl, Pk.
- 101.5.7 **Antidesma hosei** Pax & K. Hoffm., **TFM2** 57; shrub; Kl, NS.
- 101.5.8 **Antidesma japonicum** Siebold & Zucc., **TFM2** 57; *Antidesma gracillimum* Gage, **FMP3** 227; small tree; lowlands and mountains, also on limestone; Ps, Tg, Pk, Ph.
- 101.5.9 **Antidesma laurifolium** Airy Shaw, **FMP3** 57; shrub; hill forest at 300–400 m; Gg Belumut, Jh.
- 101.5.10 **Antidesma leucocladon** Hook.f., **FMP3** 233, **TFM2** 57; shrub to 5 m tall; lowland forest; Ps, Kd, Kl, Tg, Pk, Sl, Ml.
- 101.5.11 **Antidesma leucopodum** Miq., **TFM2** 56; *Antidesma hirtellum* Ridl., **FMP3** 229; small tree to 5 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Jh.

- 101.5.12 **Antidesma montanum** Blume, **FMP3** 231, **TFM2** 58; *Antidesma phanerophlebium* Merr., **FMP3** 230; small tree about 12 m tall; lowland and hill forest; throughout.
- 101.5.13 **Antidesma neurocarpum** Miq., **TFM2** 57; *Antidesma alatum* Hook.f., **FMP3** 227; small tree to 8 m tall; lowland and hill forest to 750 m; throughout.
- 101.5.14 **Antidesma orthogyne** (Hook.f.) Airy Shaw, **TFM2** 55; *Antidesma velutinosum* Blume var. *orthogyne* Hook.f., **FMP3** 231; shrub; lowland forest; Kd, Tg, Pk, Ph, Ml.
- 101.5.15 **Antidesma pachystachys** Hook.f., **FMP3** 226, **TFM2** 56; shrub to 4 m tall; lowland forest; Pn, Pk, Jh; endemic.
- 101.5.16 **Antidesma pahangense** Airy Shaw, **TFM2** 56; shrub; hill and montane forest; Pk, Ph, Jh; endemic.
- 101.5.17 **Antidesma pendulum** Hook.f., **FMP3** 227, **TFM2** 56; shrub to 2 m tall; hill and montane forest to 1200 m; Tg, Pk, Ph, Sl; endemic.
- 101.5.18 **Antidesma puncticulatum** Miq., P. Hoffmann *pers. comm.*; *Antidesma thwaitesianum* Müll.Arg., **TFM2** 57; shrub, twice collected, Bt Tanjung, Kd and Tasek Bera, Ph.
- 101.5.19 **Antidesma salicinum** Ridl., **FMP3** 228; incl. var. *latior* Ridl., **TFM2** 56; wiry shrub to 2 m or more tall; swiftly flowing mountain streams; widespread.
- 101.5.20 **Antidesma stipulare** Blume, **FMP3** 226, **TFM2** 56; *Antidesma kunstleri* Gage, **FMP3** 225; shrub or small tree to 5 m tall; lowland and hill forest; Tg, Ph, Jh.
- 101.5.21 **Antidesma tomentosum** Blume, **FMP3** 226, **TFM2** 55; *Antidesma longipes* Hook.f., **FMP3** 229; *Antidesma persimile* Kurz, **FMP3** 229; *Antidesma perakense* Pax & K. Hoffm., **FMP3** 233; shrub or small tree to 7 m tall; hill and montane forest to 1200 m; throughout except far north-west.
- 101.5.22 **Antidesma velutinosum** Blume, **FMP3** 231 incl. var. *lancifolium* Hook.f., **TFM2** 55; small tree to 5 m tall; lowland to lower montane forest at 1200 m; common throughout.
- 101.5.23 **Antidesma velutinum** Tul., **TFM2** 55; shrub; once from Kd.
- 101.6.1 **Aporusa arborea** (Blume) Müll.Arg., **FMP3** 239, **TFM2** 61; tree to 12 m tall; lowland and hill forest to 600 m; scattered throughout.
- 101.6.2 **Aporusa aurea** Hook.f., **FMP3** 240, **TFM2** 59; small tree to 15 m tall; lowland and hill forest; scattered throughout.
- 101.6.3 **Aporusa benthamiana** Hook.f., **FMP3** 236, **TFM2** 59; small tree to 12 m tall; lowland and hill forest to 600 m; Tg, Pk, Sl, NS, Jh, Sp.

- 101.6.4 **Aporusa bracteosa** Pax & K. Hoffm., **FMP3** 237, **TFM2** 60; tree to 20 m tall; lowland forest; Kl and Pk southward.
- 101.6.5 **Aporusa confusa** Gage, **FMP3** 238, **TFM2** 59; small tree to 18 m tall; lowland forest; scattered throughout.
- 101.6.6 **Aporusa falcifera** Hook.f., **FMP3** 236, **TFM2** 60; tree to 24 m tall; lowland and hill forest to 540 m; scattered throughout.
- 101.6.7 **Aporusa frutescens** Blume, **FMP3** 241, **TFM2** 59; shrub or small tree; lowland forest; Kd, Pn, Kl, Ph, Jh, Sp.
- 101.6.8 **Aporusa globifera** Hook.f., **FMP3** 237, **TFM2** 59; small tree to 12 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph; endemic.
- 101.6.9 **Aporusa isabellina** Airy Shaw; **A03** 474, **TFM2** 61; small tree to 15 m tall; ridge tops in lowland forest; Kl, Tg, Ph, Sl; endemic.
- 101.6.10 **Aporusa lunata** (Miq.) Kurz, **FMP3** 237, **TFM2** 59; small tree; lowland to montane forest at 1500 m; Pn, Pk, Ph, Jh, Sp.
- 101.6.11 **Aporusa microstachya** (Tul.) Müll.Arg., **TFM2** 61; *Aporusa maingayi* Hook.f., **FMP3** 241; tree; hillsides in lowland forest to 400 m; Kd and Tg southward.
- 101.6.12 **Aporusa miqueliana** Müll.Arg., **FMP3** 241, **TFM2** 61; tree to 12 m tall; lowland and hill forest to 700 m; scattered throughout.
- 101.6.13 **Aporusa nervosa** Hook.f., **FMP3** 238, **TFM2** 61; tree exceptionally to 30 m tall; lowland and hill forest to 660 m; scattered throughout; endemic.
- 101.6.14 **Aporusa nigricans** Hook.f., **FMP3** 239, **TFM2** 61; tree to 14 m tall; lowland and hill forest to 600 m; scattered throughout.
- 101.6.15 **Aporusa nigropunctata** Pax & K. Hoffm. var. **antennifera** Airy Shaw, **TFM2** 61; small tree; usually in lowland forest, occasional at higher elevations; Sl and Ph northward.
- 101.6.16 **Aporusa nitida** Merr., **TFM2** 60; small tree to 9 m tall; disturbed lowland forest; twice from Pk.
- 101.6.17 **Aporusa octandra** (Buch.-Ham. ex D. Don) A.R. Vickery, **C01** 166; *Aporusa dioica* (Roxb.) Müll.Arg., **TFM2** 60; *Aporusa microcalyx* (Hassk.) Hassk., **FMP3** 238; small tree; damp lowland forest; throughout.
- The Malayan plants are presumably var. *malesiana* Schot (**S09** 452).
- 101.6.18 **Aporusa penangensis** (Ridl.) Airy Shaw, **TFM2** 61; *Aporusa maingayi* Hook.f. var. *penangensis* Ridl., **FMP3** 242; tree to 45 m tall; lowland to lower montane forest at 1200 m; sparsely scattered through Malaya; endemic.

- 101.6.19 **Aporusa prainiana** King *ex* Gage, **FMP3** 240, **TFM2** 60; tree to 20 m tall; hillsides in lowland forest; Kd, Pn, Tg, Pk, Ph, Ml, Jh, Sp.
- 101.6.20 **Aporusa pseudoficifolia** Pax & K. Hoffm., **FMP3** 237, **TFM2** 59; shrub to 3 m tall; hill forest 450–900 m; Pn, Pk, NS.
- 101.6.21 **Aporusa selangorica** Pax & K. Hoffm., **TFM2** 59; small tree to 6 m tall; lowland and hill forest, often near rivers; Kd, Pk, Ph, Sl; endemic.
- 101.6.22 **Aporusa stellifera** Hook.f., **FMP3** 239, **TFM2** 60; small tree to 15 m tall; lowland forest; Kl, Tg, Ph, Sl, Jh.
- 101.6.23 **Aporusa symplocoides** (Hook.f.) Gage, **FMP3** 240, **TFM2** 60; small tree to 12 m tall; lowland forest; common throughout.
- 101.6.24 **Aporusa sp. nov.**, **TFM2** 60; small tree; swampy lowland forest; twice collected in S.E. Jh; ?endemic.
- 101.7.1 **Ashtonia praeterita** Airy Shaw, **TFM2** 62; tree to 30 m tall; hill and montane forest, 450–1200 m; Ph, Sl, NS; endemic.
- 101.8.1a **Austrobuxus nitidus** Miq. var. **macrocarpus** Airy Shaw; **A03** 506, **TFM2** 63; once from near Bt Tangga, NS; endemic variety.
- 101.8.1b **Austrobuxus nitidus** Miq. var. **montanus** (Ridl.) Whitmore, **TFM2** 63; *Longetia montanus* Ridl., **FMP3** 224; *Austrobuxus montanus* (Ridl.) Airy Shaw; **A03** 507; shrub or small tree; high mountains; Ph.
- 101.8.1c **Austrobuxus nitidus** Miq. var. **nitidus**, **TFM2** 63; *Longetia malayana* (Benth.) Pax & K. Hoffm., **FMP3** 224; tree to 27 m tall; lowland forest, coastal forest, swamps, mountains; throughout.
- 101.9.1 **Baccaurea bracteata** Müll.Arg., **FMP3** 246, **TFM2** 67; tree to 15 m tall, sometimes stilt-rooted; swamp forest; Tg and Pk southward.
- 101.9.2 **Baccaurea brevipes** Hook.f., **FMP3** 250, **TFM4** 66; small tree to 9 m tall; damp lowland forest; throughout.
- 101.9.3 **Baccaurea griffithii** Hook.f., **FMP3** 248, **TFM2** 66; tree to 18 m tall; lowland forest; throughout; endemic.
- 101.9.4 **Baccaurea hookeri** Gage, **FMP3** 247, **TFM2** 67; tree to 18 m tall; lowland forest; Pk, Jh, Sp; endemic.
- 101.9.5 **Baccaurea javanica** (Blume) Müll.Arg., **TFM2** 65; *Baccaurea leucodermis* Hook.f. *ex* Ridl., **FMP3** 244; tree to 15 m tall; disturbed lowland forest; Kl, Pk, Ph, Jh.
- 101.9.6 **Baccaurea kunstleri** King *ex* Gage, **FMP3** 248, **TFM2** 65; buttressed tree to 21 m tall; lowland and hill forest to 750 m; Kl, Tg, Sl southward.

- 101.9.7 **Baccaurea lanceolata** (Miq.) Müll.Arg., **FMP3** 248, **TFM2** 65; small tree; lowland and hill forest, rarely on limestone; Ph and Sl southward.
- 101.9.8 **Baccaurea latifolia** King *ex* Hook.f., **FMP3** 249, **TFM2** 67; tree to 18 m tall; lowland forest; Tg, Pk, Sp; endemic.
- 101.9.9 **Baccaurea macrophylla** (Müll.Arg.) Müll.Arg., **FMP3** 247, **TFM2** 66; tree to 12 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 101.9.10 **Baccaurea maingayi** Hook.f., **FMP3** 246, **TFM2** 65; tree to 27 m tall; hill forest at 150–780 m; Pk, Tg, NS, Jh.
- 101.9.11 **Baccaurea minor** Hook.f., **FMP3** 245, **TFM2** 66; small tree; lowland forest; Kl, Pk, Ph, NS, Jh, Sp.
- 101.9.12 **Baccaurea motleyana** (Müll.Arg.) Müll.Arg., **FMP3** 250, **TFM2** 66; *Baccaurea pubescens* Pax & K. Hoffm., **FMP3** 250; tree to 24 m tall; lowland and hill forest to 900 m; scattered throughout.
- 101.9.13 **Baccaurea parviflora** (Müll.Arg.) Müll.Arg., **FMP3** 243, **TFM2** 64; *Baccaurea scortechinii* Hook.f., **FMP3** 244; small tree to 5 m tall; lowland and hill forest to 600 m; widespread, commoner in the north.
- 101.9.14 **Baccaurea polyneura** Hook.f., **FMP3** 248, **TFM2** 67; tree to 24 m tall; lowland forest; Pk, MI; endemic.
- 101.9.15 **Baccaurea pyriformis** Gage, **FMP3** 249, **TFM2** 67; tree to 15 m tall; lowland forest to 300 m; Pn, Ph, Sl, MI, Jh, Sp; endemic.
- 101.9.16 **Baccaurea racemosa** (Reinw.) Müll.Arg., **TFM2** 65; *Baccaurea wallichii* Hook.f., **FMP3** 245; tree to 15 m tall; lowland forest; throughout, commoner in the south.
- 101.9.17 **Baccaurea ramiflora** Lour., **TFM2** 65; *Baccaurea wrayi* King *ex* Hook.f., **FMP3** 244; tree to 15 m tall; lowlands, rarely in the hills; Kd, Pn, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 101.9.18 **Baccaurea reniformis** Chakrab. & M.G. Gangop., **C02** 449; tree to 13 m tall; lowland forest, only known from type, Ulu Bubong, Pk; endemic.
- 101.9.19 **Baccaurea reticulata** Hook.f., **FMP3** 246, **TFM2** 67; tree to 30 m tall; lowland forest to 300 m; Tg and Pk southward.
- 101.9.20 **Baccaurea sumatrana** Müll.Arg., **TFM2** 65; *Baccaurea kingii* Gage, **FMP3** 245; tree to 30 m tall; lowland forest; common throughout.
- 101.9.21 **Baccaurea velutina** (Ridl.) Ridl., **FMP5** 331, **TFM2** 67; *Baccaurea reticulata* Hook.f. var. *velutina* Ridl., **FMP3** 246; tree to 15 m tall; montane forest at 600–1350 m; Kd, Tg, Pk, Ph, Sl, NS.

- 101.10.1 **Baliospermum solanifolium** (Burm.) Suresh, **N11** 106; *Baliospermum axillare* Blume, **FMP3** 312; *Baliospermum montanum* (Willd.) Müll.Arg., **TFM2** 68; shrub to 90 cm tall; open ground in the lowlands; Ps, Pn, Pk, Ml.
- 101.11.1 **Bischofia javanica** Blume, **FMP1** 447; tree to 45 m tall; lowlands and mountains; Kl, Ph, Sl.
- 101.12.1 **Blachia andamanica** (Kurz) Hook.f., **TFM2** 68; shrub; ?on limestone; Pk.
- 101.13.1 **Blumeodendron borneense** Pax & K. Hoffm., **TFM2** 70; *Blumeodendron concolor* Gage, **FMP3** 281; small tree; lowland forest; once each from P. Langkawi and P. Pangkor.
- 101.13.2 **Blumeodendron calophyllum** Airy Shaw, **TFM2** 70; tree to 18 m or more tall; hillsides in lowland forest to 300 m; Kd, Tg, Pk, Ph, Sl, Jh.
- 101.13.3 **Blumeodendron kurzii** (Hook.f.) J.J.Sm., **FMP3** 281, **TFM2** 70; tree to 15 m tall; lowland forest; Kd, Kl, Pk, Ph, Jh.
- 101.13.4 **Blumeodendron subrotundifolium** (Elmer) Merr., **TFM2** 70; tree to 36 m tall; lowland forest; scattered through Malaya.
- 101.13.5 **Blumeodendron tokbrai** (Blume) J.J.Sm., **TFM2** 71; *Blumeodendron vernicosum* (Hook.f.) Gage, **FMP3** 282; tree to 36 m, sometimes stilt-rooted; lowland forest to 450 m, often in swamps; Tg, Pk, Ph, Sl, Ns, Jh, Sp.
- 101.14.1 **Botryophora geniculata** (Miq.) Beumée *ex* Airy Shaw, **TFM2** 72; *Botryophora kingii* Hook.f., **FMP3** 282; tree to 12 m tall; lowland to lower montane forest at 1500 m; Pn, Kl, Pk, Sl, Jh.
- 101.15.1 **Breynia coronata** Hook.f., **FMP3** 218, **TFM2** 73; small tree to 5 m tall; lowland and mountains to 1200 m; widespread; endemic.
- 101.15.2 **Breynia discigera** Müll.Arg., **FMP3** 217, **TFM2** 73; small tree to 5 m tall; lowland and hill forest; widespread.
- 101.15.3 **Breynia microphylla** (Kurz *ex* Teijsm. & Binn.) Müll.Arg. var. **angustifolia** (Hook.f.) Airy Shaw, **A06** 272; *Breynia angustifolia* Hook.f., **FMP3** 218, **TFM2** 73; shrub to 3 m tall; lowland forest; Ps, Pk, Ph, NS.
- 101.15.4 **Breynia reclinata** (Roxb.) Hook.f., **FMP3** 219, **TFM2** 73; scandent shrub; lowlands and coasts; throughout.
- 101.15.5 **Breynia vitis-idaea** (Burm.f.) C.E.C. Fisch., **TFM2** 73; *Breynia rhamnoides* (Willd.) Müll.Arg., **FMP3** 218; *Breynia keithii* Ridl., **FMP3** 219; shrub; open sandy places and coasts; north of Malaya.
- 101.16.1 **Bridelia cinnamomea** Hook.f., **FMP3** 185, **TFM2** 74; scrambling shrub or small tree; lowland forest, forest margins; Pk, Sl, Jh, Sp.

- 101.16.2 **Bridelia griffithii** Hook.f., **FMP3** 185, **TFM2** 75; scrambling shrub; lowland forest; Pk, Ml, Jh, Sp; endemic.
- 101.16.3 **Bridelia ovata** Decne., **FMP3** 184, **TFM2** 74; small tree; dry open country; Ps, Kd, Pn.
- 101.16.4 **Bridelia penangiana** Hook.f., **FMP3** 185, **TFM2** 75; tree to 18 m tall; lowland and hill forest; Kd, Pn, Tg, Ph, Sl.
- 101.16.5 **Bridelia pustulata** Blume, **FMP3** 185, **TFM2** 74; tree to 15 m tall; lowland forest; Pk, Ph, Sl, Ml, Jh, Sp; endemic.
- 101.16.6 **Bridelia stipularis** (L.) Blume, **FMP3** 183, **TFM2** 74; ?*Bridelia retusa* auct. non (L.) Spreng., **FMP3** 184; shrub or small tree; open country, often near streams; scattered throughout.
- 101.16.7 **Bridelia tomentosa** Blume, **FMP3** 184, **TFM2** 74; tree to 18 m tall; secondary forest; common throughout.
- 101.16.8 **Bridelia whitmorei** Airy Shaw, **TFM2** 74; woody climber; lowland forest; Ulu Tembeling, Ph; endemic.
- 101.17.1 **Cephalomappa lepidotula** Airy Shaw, **TFM2** 76; small tree; lowland swamp forest; S.E. Jh.
- 101.17.2 **Cephalomappa malloticarpa** J.J. Sm., **TFM2** 76; tree to 36 m tall; lowland forest; Kl, Tg, Jh.
- 101.17.3 **Cephalomappa penangensis** Ridl., **FMP3** 279, **TFM2** 76; tree to 36 m tall; lowland forest including swamps; Pn, Tg, Pk, Pk, Jh; endemic.
- 101.18.1 **Chaetocarpus castanocarpus** (Roxb.) Thwaites, **FMP3** 310, **TFM2** 76; tree to 12 m tall; mainly coastal; Kd, Pn, Kl, Pk.
- 101.19.1 **Cheilosa montana** Blume, **V24** 163; *Baccaurea malayana* auct. non King ex Hook.f., **FMP3** 247; *Baliospermum malayanum* Hook.f., **FMP3** 313; *Cheilosa malayana* (Hook.f.) Corner ex Airy Shaw, **TFM2** 77; tree to 24 m tall; lowland forest; Kl, Tg, Pk, Sl, Sp.
- 101.20.1 **Chondrostylis kunstleri** (King ex Hook.f.) Airy Shaw, **TFM2** 77; *Kunstleriodendron sub lanceolata* Ridl., **FMP3** 283; tree to 15 m tall; hill forest; Kd, Kl, Tg, Pk, Ph.
- 101.21.1 **Cladogynos orientalis** Zipp. ex Spanoghe, **FMP3** 276, **TFM2** 78; shrub to 150 cm tall; on limestone; Ps, P. Langkawi, Kl, Ph.
- 101.22.1 **Claoxylon indicum** (Reinw. ex Blume) Hassk., **FMP3** 271, **TFM2** 78; shrub to 4 m tall; lowland forest, often near the sea; widespread.
- 101.22.2 **Claoxylon kingii** Hook.f. ex Ridl., **FMP3** 272, **TFM2** 79; shrub; hill and montane forest at 300–1100 m; Kd, Pn, Pk.



- 101.22.3 **Claoxylon longifolium** (Blume) Endl. *ex* Hassk., **FMP3** 272 incl. var. *brachystachys* Hook.f., **TFM2** 79; tree to 9 m tall; lowland to montane forest at 1350 m; throughout.
- 101.22.4 **Claoxylon wallichianum** Müll.Arg., **FMP3** 272, **TFM2** 79; shrub to 4 m tall; lowland to montane forest at 1200 m; Pn, Pk, Jh; endemic.
- 101.23.1 **Cleidion spiciflorum** (Burm.f.) Merr., **TFM2** 79; *Cleidion javanicum* Blume, **FMP3** 296; shrub or small tree; lowland forest, sometimes on limestone; Pn, Kl, Pk, Sl.
- 101.24.1 **Cleistanthus bracteosus** Jabl., **FMP3** 187, **TFM2** 80; small tree; hillsides in lowland forest; Pk; endemic.
- 101.24.2 **Cleistanthus contractus** Airy Shaw, **A03** 511, **TFM2** 80; tree to 10 m tall; lowland forest; once from Lenggong F.R., Jh; endemic.
- 101.24.3 **Cleistanthus decurrens** Hook.f., **FMP3** 191, **TFM2** 81; shrub; lowlands, often near limestone; Pn, Tg, Pk, Ph, NS, Jh.
- 101.24.4 **Cleistanthus ellipticus** Hook.f., **FMP3** 194, **TFM2** 82; tree; rocky lowland forest; Tg, Pk; endemic.
- 101.24.5 **Cleistanthus flavescens** Jabl., **FMP3** 188, **TFM2** 81; small tree; Pk, Tg; endemic.
- 101.24.6 **Cleistanthus glaber** Airy Shaw, **TFM2** 80; lowland forest; Tg, Jh.
- 101.24.7 **Cleistanthus glandulosus** Jabl., **FMP3** 189, **TFM2** 81; small tree; hill forest; known only from type, Gg Keledang, Pk; endemic.
- 101.24.8 **Cleistanthus glaucus** Jabl., **FMP3** 188, **TFM2** 80; tree; on limestone and other rocky outcrops; Pk; endemic.
- 101.24.9 **Cleistanthus gracilis** Hook.f., **FMP3** 190 incl. var. *parvifolia* Ridl., **TFM2** 80; shrub; often but always on limestone; Ps, P. Langkawi, Kd, Tg, Pk, Ph, Jh.
- 101.24.10 **Cleistanthus hirsutipetalus** Gage, **FMP3** 189 '*hirsutipetalus*', **TFM2** 81; tree; lowland forest; Pn, Tg, Ph, NS, Jh; endemic.
- 101.24.11 **Cleistanthus hirsutululus** Hook.f., **FMP3** 192, **TFM2** 81; *Cleistanthus siamensis* Craib, **FMP3** 190; tree; lowland forest, rarely on limestone; scattered throughout.
- 101.24.12 **Cleistanthus kingii** Jabl., **FMP3** 193, **TFM2** 83; tree; on limestone or in swampy lowland forest; Pk, Jh; endemic.
- 101.24.13 **Cleistanthus lanuginosus** Jabl., **FMP3** 192, **TFM2** 80; small tree; twice from Jh; endemic.

- 101.24.14 **Cleistanthus longinervis** Airy Shaw, **A04** 309; shrub or tree; lowland forest; twice from Tg; endemic.
- 101.24.15 **Cleistanthus macrophyllus** Hook.f., **FMP3** 192, **TFM2** 81; tree; lowland forest, also on limestone; Kl, Pk, Ph, Sl, Jh, Sp; endemic.
- 101.24.16 **Cleistanthus maingayi** Hook.f., **FMP3** 193, **TFM2** 82; ?tree; lowland forest; Sl, NS, Ml, Jh; endemic.
- 101.24.17 **Cleistanthus major** Airy Shaw, **A03** 510, **TFM2** 81; tree about 6 m tall; lowland forest; once from Bt Kajang, Tg; endemic.
- 101.24.18 **Cleistanthus malaccensis** Hook.f., **FMP3** 189, **TFM2** 82; ?tree; lowland forest; Ph, Sl, Ml, Sp; endemic.
- 101.24.19 **Cleistanthus membranaceus** Hook.f., **FMP3** 188, **TFM2** 80; tree; lowland forest; Pk; endemic.
- 101.24.20 **Cleistanthus myrianthus** (Hassk.) Kurz, **FMP3** 194, **TFM2** 82; *Cleistanthus pseudomyrianthus* Jabl., **FMP3** 194; small tree; lowland forest; Tg, Pk, Ph, Sl, Jh, Sp.
- 101.24.21 **Cleistanthus nitidus** Hook.f., **FMP3** 188 incl. var. *curtisi* (Jabl.) Ridl., **TFM2** 81; lowland and hill forest; Kd, Pn, Pk; endemic.
- 101.24.22 **Cleistanthus parvifolius** Hook.f., **FMP3** 191, **TFM2** 82; small tree; limestone; once from Gopeng, Pk; endemic.
- 101.24.23 **Cleistanthus pedicellatus** Hook.f., **FMP3** 187, **TFM2** 80; small tree; hill forest; Pn, Pk; endemic.
- 101.24.24 **Cleistanthus podocarpus** Hook.f., **FMP3** 189, **TFM2** 81; tree to 20 m tall; lowland and hill forest; Tg, Pk, Jh; endemic.
- 101.24.25 **Cleistanthus polyphyllus** F.N. Williams, **FMP3** 193, **TFM2** 82; small tree; forest near the sea; Ps, Kd, Pn, Pk, Ph.
- 101.24.26 **Cleistanthus praetermissus** Gage, **FMP3** 193, **TFM2** 81; shrub; forest; once each from Pn, Pk and Jh.
- 101.24.27 **Cleistanthus pseudopodocarpus** Jabl., **TFM2** 83; ?tree; once from S.E. Jh.
- 101.24.28 **Cleistanthus rufus** (Hook.f.) Gehrm., **FMP3** 195, **TFM2** 82; shrub; lowland forest; ?Pn, Ph; endemic.
- 101.24.29 **Cleistanthus sumatranus** (Miq.) Müll.Arg., **FMP3** 192, **TFM2** 82; *Cleistanthus heterophyllus* Hook.f., **FMP3** 190; small tree; lowland forest; Ph, Ml, Jh, Sp.
- 101.24.30 **Cleistanthus vestitus** Jabl., **TFM2** 83; *Cleistanthus perakensis* (Jabl.) Gage ex Ridl., **FMP3** 195; shrub to 2 m tall; lowland forest; Kd, Ph, Jh.

- 101.25.1 **Cnesmone javanica** Blume, **FMP3** 306, **TFM2** 83; stinging slender woody climber; open country, lowlands and hills; Ml and Ph northward.
- 101.25.2 **Cnesmone laevis** (Ridl.) Airy Shaw, **TFM2** 83; *Tragia laevis* Ridl., **FMP3** 307; stinging twining vine; on limestone; Ps, P. Langkawi.
- 101.25.3 **Cnesmone subpeltata** Ridl., **FMP3** 307, **TFM2** 83; slender twining climber; on limestone; Gg Pondok and Temengor, Pk; Batu Caves, Sl; endemic.
- 101.26.1 **Croton argyratus** Blume, **FMP3** 260, **TFM2** 85; tree to 18 m tall; lowland forest to 600 m; common throughout.
- 101.26.2 **Croton bonplandianus** Baill., **TFM2** 84; *Croton sparsiflorus* Morong, **C26** 661; herb; waste ground; Sp; naturalized from tropical America.
- 101.26.3 **Croton cascarilloides** Raeusch., **TFM2** 84; *Croton cumingii* Müll.Arg., **FMP3** 261; shrub or small tree; on limestone or other rocks near the sea; Ps, P. Langkawi, Kl, Pk, Ph, P. Tioman.
- 101.26.4 **Croton caudatus** Geisel., **TFM2** 85; *Croton caudatus* var. *malaccanus* Hook.f., **FMP3** 259; rheophytic shrub; Ulu Endau, Ph.
- 101.26.5 **Croton erythrostachys** Hook.f., **FMP3** 260, **TFM2** 85; *Croton calcicola* Ridl., **FMP3** 262; tree to 15 m tall; hill forest to 900 m. also limestone: Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.
- 101.26.6 **Croton heterocarpus** Müll.Arg., **FMP3** 262 '*heteropetalum*', **TFM2** 85; tree to 12 m tall; tidal creeks. inland edge of mangroves; Ph, Ml, Jh, Sp.
- 101.26.7 **Croton hirtus** L'Hér., **TFM2** 84, **C26** 661, **M47** 282; herb; waste ground; widespread; naturalized from tropical America.
- 101.26.8 **Croton kelantanicus** Airy Shaw, **A03** 515; tree; once from Sg Ketil, Kl; endemic.
- 101.26.9 **Croton laevifolius** Blume, **TFM2** 85; *Croton confusus* Gage, **FMP3** 261; *Croton griffithii* Hook.f., **FMP3** 261; tree to 12 m tall; lowland forest margins; common throughout.
- 101.26.10 **Croton lucidus** Gage, **FMP3** 262, **TFM2** 85; shrub or small tree; Gg Pulai, Jh; endemic.
- 101.26.11 **Croton macrocarpus** Ridl., **FMP5** 332, **TFM2** 85; small tree to 5 m tall; peat swamp forest; once from Telok Forest Reserve, Sl; endemic.
- 101.26.12 **Croton rheophyticus** Airy Shaw, **S48** 249; rheophytic shrub.; fast-flowing rivers; Sg Endau, Jh/Ph.
- 101.26.13 **Croton tigilium** L., **FMP3** 262; shrub or small tree; cultivated ground, around villages.

- 101.27.1 **Dicoelia beccariana** Benth., **TFM2** 86; small tree; lowland forest; once from Panching, Ph.
- 101.28.1 **Dimorphocalyx luzoniensis** Merr., **TFM2** 87; tree to 15 m tall; once from Gg Panti, Jh.
- 101.28.2 **Dimorphocalyx malayanus** Hook.f., **FMP3** 266, **TFM2** 86; *Dimorphocalyx kunstleri* Hook.f., **FMP3** 266; tree to 7 m tall; lowland and hill forest; Pn, Ml, Jh.
- 101.28.3a **Dimorphocalyx muricatus** (Hook.f.) Airy Shaw var. **minor** (Hook.f.) Airy Shaw, **TFM2** 87; *Ostodes muricatus* Hook.f. var. *minor* Hook.f., **FMP3** 269; small tree; lowland and hill forest; Pn, NS, Ml.
- 101.28.3b **Dimorphocalyx muricatus** (Hook.f.) Airy Shaw var. **muricatus**, **TFM2** 87; *Ostodes muricatus* Hook.f., **FMP3** 269; small tree to 7 m or more tall; lowland forest to 300 m; Pn, Pk, Ph, Sl, NS, Jh.
- 101.28.4 **Dimorphocalyx murinus** Elmer, **TFM2** 87; tree to 12 m tall; swampy lowland forest; S.E. Jh.
- 101.29.1 **Drypetes cockburnii** Airy Shaw, **A03** 502, **TFM2** 88, **A04** 298; tree to 20 m tall; lowland and hill forest; Ph, Jh; endemic.
- 101.29.2 **Drypetes curtisii** (Hook.f.) Pax & K. Hoffm., **FMP3** 223, **TFM2** 88; small tree; lowland and hill forest; Pn, Kl, Tg, Ph, Jh; endemic.
- 101.29.3 **Drypetes detersibilis** Airy Shaw, **TFM2** 88; tree; only known from type, Ph; endemic.
- 101.29.4 **Drypetes indica** (Müll.Arg.) Pax & K. Hoffm., **TFM2** 88; tree; montane forest at 1200 m; Maxwell's Hill, Pk, Fraser's Hill, Ph.
- 101.29.5 **Drypetes kikir** Airy Shaw, **TFM2** 89; tree to 30 m tall; lowland forest; Tg, Pk, Ph.
- 101.29.6 **Drypetes laevis** (Miq.) Pax & K. Hoffm., **TFM2** 89; tree, rarely to 40 m tall; lowland forest; Kd, Ph, NS, Jh.
- 101.29.7 **Drypetes longifolia** (Blume) Pax & K. Hoffm., **FMP3** 222, **TFM2** 89; tree to 20 m tall; lowland forest; widespread.
- 101.29.8 **Drypetes microphylla** (Merr.) Pax & K. Hoffm., **TFM2** 88; tree; lowland forest; P. Langkawi, Ph.
- 101.29.9 **Drypetes nervosa** (Hook.f.) Pax & K. Hoffm., **FMP3** 222, **TFM2** 88; tree; on limestone; Pk; endemic.
- 101.29.10 **Drypetes oxyodonta** Airy Shaw, **TFM2** 87; small tree to 10 m tall; lowland forest, also on limestone; Kl, Ph; endemic.

- 101.29.11 **Drypetes pachycarpa** Airy Shaw, **A04** 297; tree to 14 m tall; lowland forest; Kl, Tg, Pk; endemic.
- 101.29.12 **Drypetes pendula** Ridl., **FMP3** 222, **TFM2** 89; tree to 20 m tall; lowland forest; common throughout.
- 101.29.13 **Drypetes perakensis** Gage, **FMP3** 223, **TFM2** 89; small tree; Pk (poorly known); endemic.
- 101.29.14a **Drypetes rhakodiskos** (Hassk.) Airy Shaw var. **laevigata** Airy Shaw, **TFM2** 88; tree; NS, MI.
- 101.29.14b **Drypetes rhakodiskos** (Hassk.) Airy Shaw var. **rhakodiskos**, **TFM2** 88; tree; Pn.
- 101.29.15 **Drypetes riparia** Ridl., **FMP3** 223, **TFM2** 88; small tree; on lowland river banks; Kl, Tg; endemic.
- 101.30.1 **Elateriospermum tapos** Blume, **FMP3** 252, **TFM2** 91; tree to 27 m tall; lowland and hill forest to 600 m; throughout.
- 101.31.1 **Endospermum diadenum** (Miq.) Airy Shaw, **A06** 293; *Endospermum malaccense* Müll.Arg., **FMP3** 305, **TFM2** 93; *Endospermum ovalifolium* Pax & K. Hoffm., **FMP3** 305; tree to 40 m tall; lowland to lower montane forest at 1000 m; common throughout.
- 101.32.1 **Epiprinus malayanus** Griff., **FMP3** 279, **TFM2** 95; tree to 15 m tall; lowland forest; MI northwards.
- 101.33.1 **Erismanthus obliquus** Wall. ex Müll.Arg., **FMP3** 271, **TFM2** 95; shrub or small tree to 9 m tall; lowland forest, sometimes on limestone; Ps, Kd, Pn, Kl, Pk, Ph, MI.
- 101.34.1 **Euphorbia antiquorum** L., **FMP3** 180, **TFM2** 96; cactus-like shrub; on limestone; Ps, P. Langkawi.
- 101.34.2 **Euphorbia atoto** G. Forst., **FMP3** 181, **TFM2** 96; succulent herb to 60 cm tall; sandy seashores; common on all coasts.
- 101.34.3 **Euphorbia heterophylla** L., **FMP3** 181; succulent herb to 1 m tall; seashores and waste ground; widespread; naturalized from tropical America.
- 101.34.4 **Euphorbia hirta** L., **FMP3** 181, **M47** 284; *Chamaesyce hirta* (L.) Millsp.; herb to 30 cm tall; common weed of waste ground; throughout; naturalized from tropical America.
- 101.34.5 **Euphorbia hypericifolia** L., **FMP5** 331, **M47** 286; *Chamaesyce hypericifolia* (L.) Millsp.; herb to 30 cm tall; roadsides; Kd, MI; ?naturalized.

- 101.34.6 **Euphorbia synadenium** Ridl., **FMP3** 180, **TFM2** 96; shrub about 60 cm tall; rocky forest; Pn, Sl.
- 101.34.7 **Euphorbia thymifolia** L., **FMP3** 182; *Chamaesyce thymifolia* (L.) Millsp.; tufted prostrate herb; common on paths; widespread.
- 101.35.1 **Excoecaria agallocha** L., **FMP3** 314, **TFM2** 96; small tree; mangrove swamps and rocky shores; all coasts.
- 101.35.2 **Excoecaria cochinchinensis** Lour. var. **viridis** (Pax & K. Hoffm.) Merr., **TFM2** 97; *Excoecaria quadrangularis* Müll.Arg., **FMP3** 314; shrub; hill forest; Kd, Pn, Pk.
- 101.35.3 **Excoecaria oppositifolia** Griff., **TFM2** 96; shrub or small tree to 10 m tall; on limestone; P. Langkawi, Kl, Pk.
- 101.36.1 **Flueggea virosa** (Roxb. ex Willd.) Voigt, **W08** 287; *Flueggea microcarpa* Blume, **FMP3** 216; *Securinega virosa* (Roxb. ex Willd.) Baill., **TFM2** 131; straggling bush or small tree; open places, forming thickets; Ps, Kd, Pk, Ph, Sl.
- 101.37.1 **Glochidion arborescens** Blume, **FMP3** 211, **TFM2** 100; small tree; lowland forest; P. Langkawi, Ph, Sl, MI, Sp.
- 101.37.2 **Glochidion borneense** (Müll.Arg.) Boerl.; **A04** 289; *Glochidion trilobum* Ridl., **FMP3** 210 in part; *Glochidion microbotrys* Hook.f., **FMP3** 209, **TFM2** 99; small tree, exceptionally reaching 15 m in height; lowland forest; Pn, Pk, Jh, Sp.
- 101.37.3 **Glochidion brunneum** Hook.f., **FMP3** 207, **TFM2** 100; *Glochidion goniocarpum* Hook.f., **FMP3** 211; *Glochidion maingayi* Gage, **FMP3** 210; *Glochidion pedunculatum* Ridl., **FMP3** 207; small tree to 6 m tall; lowland forest; Pk, Ph, MI, Jh, Sp.
- 101.37.4 **Glochidion carrickii** Airy Shaw, **A03** 482, **TFM2** 100; tree to 8 m tall; hill forest; twice from Ulu Gombak F.R., Sl; endemic.
- 101.37.5 **Glochidion fuscum** (Müll.Arg.) Boerl., **TFM2** 100; small tree to 8 m tall; lowland forest; Pk, Jh, Sp.
- 101.37.6 **Glochidion glomerulatum** (Miq.) Boerl., **FMP3** 209, **TFM2** 100; *Glochidion nanogynum* (Müll.Arg.) Hook.f., **FMP3** 214; shrub or small tree to 9 m tall; lowland forest margins; Pn, Tg, Pk, Sl, MI, Jh.
- 101.37.7 **Glochidion hypoleucum** (Miq.) Boerl., **TFM2** 101; *Glochidion laevigatum* (Müll.Arg.) Hook.f., **FMP3** 215; shrub or small tree to 6 m tall; lowland to lower montane forest at 1290 m; throughout.
- 101.37.8 **Glochidion insulare** Hook.f., **FMP3** 213, **TFM2** 101; tree; only known from type, Pn; endemic.

- 101.37.9 **Glochidion kunstlerianum** Gage, **FMP3** 210, **TFM2** 102; shrub; lowland forest; Pk, Sl, Jh, Sp.
- 101.37.10 **Glochidion littorale** Blume, **FMP3** 207, **TFM2** 101; shrub; coasts; Pk, Ph, Jh.
- 101.37.11 **Glochidion lucidum** Blume, **TFM2** 99; tree to 30 m tall; lowland to lower montane forest; Tg, Ph.
- 101.37.12 **Glochidion macrostigma** Hook.f., **FMP3** 214, **TFM2** 100, **A04** 289; small tree; hill forest; Kd, Pn, Pk.
- 101.37.13 **Glochidion obscurum** (Roxb. ex Willd.) Blume, **FMP3** 208, **TFM2** 99; small tree to 15 m tall; mainly lowland secondary forest; common throughout.
- 101.37.14 **Glochidion penangense** (Müll.Arg.) Airy Shaw, **TFM2** 101; *Glochidion villicaule* Hook.f., **FMP3** 211; *Glochidion coronatum* Hook.f., **FMP3** 212; shrub or small tree; lowland and hill forest to 900 m; Ph.
- 101.37.15 **Glochidion perakense** (Müll.Arg.) Airy Shaw, **FMP3** 213, **TFM2** 101; *Glochidion glaberrimum* Ridl., **FMP3** 208; shrub or small tree to 6 m tall; mainly coastal swampy places; widespread.
- 101.37.16 **Glochidion rubrum** Blume, **TFM2** 101; *Glochidion leiostylum* Kurz, **FMP3** 212; *Glochidion laevigatum* (Müll.Arg.) Hook.f. var. *cuspidatum* Ridl., **FMP3** 215; shrub or small tree to 6 m tall; lowland forest; widespread.
- 101.37.17 **Glochidion sericeum** Hook.f., **FMP3** 215, **FMP3** 101; shrub or small tree to 6 m tall; lowland to lower montane forest at 1290 m; Tg and Pk southward.
- 101.37.18 **Glochidion singaporense** Gage, **FMP3** 209, **TFM2** 101; shrub to 3 m tall; lowland forest fringes; Sl, NS, MI, Jh, Sp.
- 101.37.19 **Glochidion stylosum** Ridl., **FMP3** 215, **TFM2** 100; small tree; lower montane forest; only known from type; Semangkok Pass, Sl; endemic.
- 101.37.20 **Glochidion superbum** Baill., **FMP3** 208, **TFM2** 99; tree to 18 m tall; lowland forest; common throughout.
- 101.37.21 **Glochidion symingtonii** Airy Shaw, **TFM2** 100; treelet; hill forest; Keledang Saiong and Gg Peninjau, Pk; endemic.
- 101.37.22 **Glochidion tetrapteron** Gage, **FMP3** 211, **TFM2** 100; shrub or small tree; fringes of lowland and montane forest; Ph; endemic.
- 101.37.23 **Glochidion wallichianum** Müll.Arg., **FMP3** 213, **TFM2** 99; *Glochidion trilobum* Ridl., **FMP3** 210 in part; *Glochidion desmocarpaceum* Hook.f., **FMP3** 214; small tree, rarely to 27 m tall; lowland forest; Sl and Ph northward.
- 101.37.24 **Glochidion xestophyllum** Airy Shaw, **TFM2** 99; 15 m tall tree; once from Banang Forest Reserve, Jh.

- 101.38.1 **Hevea brasiliensis** (Willd. ex A. Juss.) Müll.Arg., **K09** 110; the rubber tree; ubiquitously planted, often escaping and persisting; throughout; naturalized from South America.
- 101.39.1 **Homalanthus populneus** (Geisel.) Pax, **TFM2** 102; *Homalanthus populifolius* Grah., **FMP3** 313; small tree to 9 m tall; lowlands and mountains, recorded from limestone; Sl northward.
- 101.40.1 **Homonoia riparia** Lour., **FMP3** 309, **TFM2** 103, **V20** 241; rheophytic shrub; beds of swiftly flowing rocky rivers; Ph northward.
- 101.41.1 **Hymenocardia punctata** Wall. ex Lindl., **FMP3** 251, **TFM2** 103; scrambling shrub or small tree to 9 m tall; hill forests; Ph.
- 101.42.1 **Koilodepas ferrugineum** Hook.f., **FMP3** 276 '*Coelodepas*', **TFM2** 104; small tree; only known from type, Ml; endemic.
- 101.42.2 **Koilodepas longifolium** Hook.f., **FMP3** 275 '*Coelodepas*', **TFM2** 104; *Coelodepas glanduligerum* Pax & K. Hoffm., **FMP3** 275; small tree; lowland forest; P, Langkawi, Tg, Pk, Ml, Jh, Sp.
- 101.42.3 **Koilodepas wallichianum** Benth., **FMP3** 275 '*Coelodepas*', **TFM2** 104; small tree; hill forest; Pn; endemic.
- 101.43.1 **Lasiococca malaccensis** Airy Shaw, **TFM2** 104; small tree to 7 m tall; lowland forest; once from Batang Melaka F.R., Ml; endemic.
- 101.44.1 **Leptopus australis** (Zoll. & Moritzi) Pojark., **TFM2** 105; *Andrachne australis* Zoll. & Moritzi, **FMP3** 197; *Andrachne calcarea* Ridl., **FMP3** 198; *Andrachne hirta* Ridl., **FMP3** 197; subshrub to 50 cm tall; on limestone; Ps, P, Langkawi, Kd, Kl, Pk, Sl.
- 101.45.1 **Macaranga amissa** Airy Shaw, **TFM2** 112; *Endospermum perakense* King, **FMP3** 306; tree to 30 m tall; swampy lowland forest; Tg, Pk, Ml, Jh; endemic.
- 101.45.2 **Macaranga andamanica** Kurz, **TFM2** 112; *Macaranga brandisii* King ex Hook.f., **FMP5** 333; tree to 13 m tall; hill and montane forest; Kd, Pn, Ph.
- 101.45.3 **Macaranga baccaureifolia** Airy Shaw, **TFM2** 112; tree to 15 m tall; lowland swamp forest; Jh.
- 101.45.4 **Macaranga caladiifolia** Becc., **TFM2** 111; small tree; peat swamp forest; Ph.
- 101.45.5 **Macaranga conifera** (Zoll.) Müll.Arg., **TFM2** 112; *Macaranga populifolia* Müll.Arg., **FMP3** 304; tree to 24 m tall; secondary forest; scattered throughout.
- 101.45.6 **Macaranga constricta** Whitmore & Airy Shaw, **TFM2** 107; tree to 18 m tall; lowland and hill forest; Tg, Ph; endemic.



- 101.45.7a **Macaranga curtisii** Hook.f. var. **curtisii**, **FMP3** 301, **TFM2** 107; tree to 15 m tall; hill and lower montane forest 660–1200 m; widespread.
- 101.45.7b **Macaranga curtisii** Hook.f. var. **glabra** Whitmore, **TFM2** 111; small tree; montane forest at 660–1200 m; Tg, Pk, Ph, Sl; endemic variety.
- 101.45.8 **Macaranga denticulata** (Blume) Müll.Arg., **FMP3** 303, **TFM2** 111; tree to 9 m tall; secondary forest; widespread, commoner in the north.
- 101.45.9 **Macaranga diepenhorstii** Müll.Arg., **TFM2** 111; tree to 24 m tall; along rivers in primary forest; Kl, Tg, Pk, Ph, Sl, Ml.
- 101.45.10 **Macaranga gigantea** (Rchb.f. & Zoll.) Müll.Arg., **TFM2** 107; *Macaranga megalophylla* (Müll.Arg.) Müll.Arg., **FMP3** 298; *Macaranga incisa* Gage, **FMP3** 301; tree to 15 m tall; disturbed lowland forest; throughout.
- 101.45.11 **Macaranga heynei** I.M. Johnst., **TFM2** 112; *Macaranga robiginosa* Ridl., **FMP3** 303; small tree; secondary forest; Ps, Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 101.45.12 **Macaranga hosei** King ex Hook.f., **FMP3** 298, **TFM2** 111; tree to 24 m tall; lowland forest; common throughout.
- 101.45.13 **Macaranga hullettii** King ex Hook.f., **FMP3** 301, **TFM2** 107; tree to 9 m tall; lowland forest to 600 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 101.45.14 **Macaranga hypoleuca** (Rchb.f. & Zoll.) Müll.Arg., **FMP3** 300, **TFM2** 106; tree to 30 m tall; secondary forest; throughout.
- 101.45.15 **Macaranga indica** Wight, **TFM2** 107; tree to 21 m tall; montane forest above 1000 m; Main Range.
- 101.45.16 **Macaranga kingii** Hook.f., **FMP3** 300, **TFM2** 106; slender treelet to 5 m tall; lowland forest; Jh.
- 101.45.17 **Macaranga laciniata** Whitmore & Airy Shaw, **TFM2** 112; small tree; secondary forest; Kl, Tg, Ph.
- 101.45.18 **Macaranga lowii** King ex Hook.f., **FMP3** 304, **TFM2** 112; *Mallotus auriculatus* Merr., **FMP5** 333; small tree; primary lowland forest; throughout, commoner in the north.
- 101.45.19 **Macaranga motleyana** (Müll.Arg.) Müll.Arg. ssp. **griffithiana** (Müll.Arg.) Whitmore, **W13** 448; *Macaranga griffithiana* Müll.Arg., **FMP3** 299, **TFM2** 107; small bushy tree; swampy lowland forest; common throughout.
- 101.45.20 **Macaranga pruinosa** (Miq.) Müll.Arg., **TFM2** 106; *Macaranga maingayi* Hook.f., **FMP3** 298; tree to 15 m tall; lowland swamp forest; throughout.
- 101.45.21 **Macaranga puncticulata** Gage, **FMP3** 302, **TFM2** 111; tree to 15 m tall; swampy lowland forest; Pk, Sl, Ml, Jh, Sp.

- 101.45.22      **Macaranga quadricornis** Ridl., **FMP3** 300, **TFM2** 107; tree to 12 m tall; montane forest above 630 m and lowland swamp forest; Sl, Jh.
- 101.45.23      **Macaranga recurvata** Gage, **FMP3** 301, **TFM2** 111; tree to 30 m tall; swampy lowland forest; Kl, Tg, Ph, Sl, NS, Ml, Jh, Sp.
- 101.45.24      **Macaranga setosa** Gage, **FMP3** 304, **TFM2** 112; small tree to 9 m tall; lowland forest; Ph, Jh.
- 101.45.25      **Macaranga tanarius** (L.) Müll.Arg., **FMP3** 302, **TFM2** 111; tree to 9 m tall; secondary forest; common throughout.
- 101.45.26      **Macaranga trichocarpa** (Rechb.f. & Zoll.) Müll.Arg., **FMP3** 303, **TFM2** 112; scandent shrub or tree to 5 m tall; lowland forest; Kd, Pk, Ph, Sl, Jh, Sp.
- 101.45.27      **Macaranga triloba** (Blume) Müll.Arg., **FMP3** 298, **TFM2** 107; small tree; lowland forest including secondary growth; common throughout.
- 101.46.1        **Mallotus barbatus** Müll.Arg., **FMP3** 289, **TFM2** 113; small tree; secondary forest, also on limestone; Kd, Kl, Tg, Pk.
- 101.46.2        **Mallotus bracteatus** Hook.f., **FMP3** 286, **TFM2** 115; shrub or small tree to 5 m; limestone; Ps, Pk; endemic (but dubiously distinct from **M. dispar** (Blume) Müll.Arg.).
- 101.46.3        **Mallotus brevipetiolatus** Gage, **FMP3** 287, **TFM2** 114; shrub; on limestone hills; Ps, Kd, Pk.
- 101.46.4        **Mallotus cuneatus** Ridl., **FMP3** 288, **TFM2** 115; shrub to 3 m tall; on limestone; Ps.
- 101.46.5        **Mallotus dispar** (Blume) Müll.Arg., **FMP3** 286, **TFM2** 115; *Mallotus leucocalyx* Müll.Arg., **FMP3** 286; small tree; usually on limestone; scattered in the north.
- 101.46.6        **Mallotus eriocarpus** (Thwaites) Müll.Arg., **TFM2** 115; *Coelodiscus montanus* Müll.Arg., **FMP3** 280; small tree; lowlands, occasionally on limestone; Pn, Ph, Ml, Jh.
- 101.46.7        **Mallotus floribundus** (Blume) Müll.Arg., **FMP3** 290, **TFM2** 113; small tree; common on river banks; Ph northward, also Jh.
- 101.46.8        **Mallotus griffithianus** Hook.f., **FMP3** 291, **TFM2** 116; tree to 12 m tall; lowland forest; throughout; endemic.
- 101.46.9        **Mallotus kingii** Hook.f., **FMP3** 293, **TFM2** 115; tree to 15 m tall; lowland forest; NS, Pk and Ph northward.
- 101.46.10      **Mallotus korthalsii** Müll.Arg., **TFM2** 115; small tree; lowland forest; Kd, Ph, Jh.

- 101.46.11 **Mallotus lackeyi** Elmer, **TFM2** 114; small tree; hill forest; Kl, Ph.
- 101.46.12 **Mallotus leucodermis** Hook.f., **FMP3** 291, **TFM2** 116; *Coccoceras muticum* Müll.Arg. var. *pedicellatum* Hook.f., **FMP3** 294; tree to 24 m tall; lowland forest; Kl, Ph, Sl.
- 101.46.13 **Mallotus macrostachyus** (Miq.) Müll.Arg., **FMP3** 288, **TFM2** 114; tree to 18 m tall; lowland to lower montane forest at 1200 m; throughout.
- 101.46.14 **Mallotus miquelianus** (Scheff.) Boerl., **TFM2** 114; *Mallotus anisophyllus* Hook.f., **FMP3** 293; small tree; lowland forest; Ml and Ph northward.
- 101.46.15 **Mallotus moritzianus** Müll.Arg., **TFM2** 115; tree; Tg, Jh.
- 101.46.16 **Mallotus muticus** (Müll.Arg.) Airy Shaw, **TFM2** 117; *Coccoceras muticum* Müll.Arg., **FMP3** 294; tree to 24 m tall; swampy lowland forest; Kd, Ph, Sl.
- 101.46.17 **Mallotus oblongifolius** (Miq.) Müll.Arg., **FMP3** 293, **TFM2** 116; *Mallotus puberulus* Hook.f., **FMP3** 290; *Mallotus porterianus* Müll.Arg., **FMP3** 292; tree to 9 m tall; lowland forest; common throughout.
- 101.46.18 **Mallotus paniculatus** (Lam.) Müll.Arg., **TFM2** 114; *Mallotus cochinchinensis* Lour.; tree to 12 m tall; secondary forest in the lowlands and hills to 900 m; throughout.
- 101.46.19 **Mallotus peltatus** (Geisel.) Müll.Arg., **TFM2** 113; *Mallotus acuminatus* (Blume) Müll.Arg., **FMP3** 290; tree to 6 m tall; lowland forest; Pk, Ph, Sl.
- 101.46.20 **Mallotus penangensis** Müll.Arg., **FMP3** 293, **TFM2** 116; tree to 15 m tall; lowland to lower montane forest at 1100 m; throughout; endemic.
- 101.46.21 **Mallotus philippensis** (Lam.) Müll.Arg., **FMP3** 291 '*philippinensis*', **TFM2** 115; tree to 9 m tall; lowland forest margins, sometimes on limestone; Kd, Tg, Pk, Ph, NS.
- 101.46.22 **Mallotus repandus** (Willd.) Müll.Arg., **FMP3** 292, **TFM2** 114; scandent shrub; lowland and hill forest, recorded on limestone; Ps, Kl, Pk, Sl, NS.
- 101.46.23 **Mallotus smilaciformis** Gage, **FMP3** 288, **TFM2** 115; shrub; only known from type, Pk; endemic.
- 101.46.24 **Mallotus subcuneatus** (Gage) Airy Shaw, **TFM2** 115; *Ceolodiscus subcuneatus* Gage, **FMP3** 280; small tree; lowlands; scattered throughout.
- 101.46.25 **Mallotus subpeltatus** (Blume) Müll.Arg., **FMP3** 290, **TFM2** 116; tree to 12 m tall; lowland and hill forest to 540 m; scattered throughout.
- 101.46.26 **Mallotus tiliifolius** (Blume) Müll.Arg., **FMP3** 285, **TFM2** 114; small tree to 9 m tall; primary and secondary forest; widespread.

- 101.46.27 **Mallotus wrayi** King ex Hook.f., **FMP3** 287, **TFM2** 115; *Mallotus lanceifolius* Hook.f., **FMP3** 287; *Kunstlerodendron cuspidatum* Ridl., **FMP3** 283; tree to 24 m tall; lowland forest; Pn, Pk, Jh.
- 101.46.28 **Mallotus sp.**, **TFM2** 114; shrub; lowland forest; once near Kuala Lompat, Ph; endemic.
- 101.47.1 **Manihot esculenta** Crantz, **K09** 112; cassava; common relic of cultivation; wasteground throughout; naturalized from tropical America.
- 101.47.2 **Manihot glaziovii** Müll.Arg., **C26** 662, **K09** 112; small tree; ornamental, frequently escaping; waste ground; naturalized from tropical America.
- 101.48.1 **Margaritaria indica** (Dalzell) Airy Shaw, **TFM2** 117, **W07** 425; small tree; once at P. Berhala, Ph.
- 101.49.1 **Megistostigma burmanicum** (Kurz) Airy Shaw, **TFM2** 84; climber; Ps, Kl, Sl.
- 101.49.2 **Megistostigma malaccense** Hook.f., **TFM2** 83; *Sphaerostylis malaccense* (Hook.f.) Pax & K. Hoffm., **FMP3** 308; woody climber; lowland forest; Ph and NS southwards.
- 101.50.1 **Melanolepis multiglandulosa** (Reinw. ex Blume) Rechb.f. & Zoll., **FMP3** 284, **TFM2** 118; tree to 12 m tall; open country; central and north Malaya.
- 101.51.1 **Micrococca johorica** Airy Shaw, **A03** 525, **TFM2** 118; treelet to 5 m tall; lowland forest; Kluang and Sg Sedili, Jh; endemic.
- 101.51.2 **Micrococca malaccensis** Airy Shaw, **A03** 524, **TFM2** 118; shrub or small tree; lowland forest; Ml, Jh; endemic.
- 101.51.3 **Micrococca mercurialis** (L.) Benth., **FMP3** 273, **TFM2** 118; annual herb to 30 cm tall; open sandy places near the coast; Pn, Tg, Pk, Sp.
- 101.52.1 **Neoscortechinia kingii** (Hook.f.) Pax & K. Hoffm., **TFM2** 120, **V23** 310; *Scortechinia kingii* Hook.f., **FMP3** 251; tree to 18 m or more tall; lowland forest; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.
- 101.52.2 **Neoscortechinia nicobarica** (Hook.f.) Pax & K. Hoffm., **TFM2** 120, **V23** 314; *Scortechinia paniculata* Ridl., **FMP5** 332; tree to 27 m tall; lowland, or more frequently hill forest; Kd, Kl, Ph, Sl, Jh.
- 101.52.3 **Neoscortechinia philippinensis** (Merr.) Welzen, **V23** 316; *Neoscortechinia forbesii* auct. non Hook.f. ex S. Moore, **TFM2** 120; small tree; lowland and hill forest to 700 m, often in swamps; Kd, Tg, Sl, Jh.
- 101.52.4 **Neoscortechinia sumatrensis** S. Moore, **TFM2** 119, **V23** 318; tree to 15 m tall; swampy lowland forest; NS, Jh, Sp.

- 101.53.1 **Omphalea bracteata** (Blanco) Merr., **TFM2** 121; woody climber; once from near Gg Pantj, Jh.
- 101.53.2 **Omphalea malayana** Merr., **TFM2** 121, **M38** 48; *Trigonostemon arboreus* Ridl., **TFM2** 136; small tree to 6 m tall; twice from P. Tioman, Ph.
- 101.54.1 **Paracroton pendulus** (Hassk.) Miq., **B08** 719; *Ostodes macrophyllus* (Müll.Arg.) Benth., **FMP3** 269; *Fahrenheitia pendula* (Hassk.) Airy Shaw, **TFM2** 97; small tree to 9 m tall, sometimes bigger; damp or swampy lowland forest; Kd, Pn, Tg, Pk, Ph, NS, Ml, Jh, Sp.
- 101.55.1 **Phyllanthus albidiscus** (Ridl.) Airy Shaw, **TFM2** 123; *Cleistanthus albidiscus* Ridl., **FMP3** 191; small tree; Gg Jerai, Kd.
- 101.55.2 **Phyllanthus amarus** Schumach. & Thonn., **TFM2** 122, **B37** 469; *Phyllanthus niruri auct. non* L., **FMP3** 199; slender herb to 60 cm tall; weed of dry ground; widespread; naturalized from tropical America.
- 101.55.3 **Phyllanthus chamaepeuce** Ridl., **FMP3** 200, **TFM2** 122; small shrub to 7.5 cm tall; among rocks near fast-flowing rivers; Kl, Tg.
- 101.55.4 **Phyllanthus columnaris** Müll.Arg., **TFM2** 123; small tree to 7 m tall; on limestone; Ps, P. Langkawi.
- 101.55.5 **Phyllanthus debilis** Klein ex Willd., **T18** 87, **M47** 290; herb; waste ground; Sp; naturalized from southern India.
- 101.55.6 **Phyllanthus elegans** Wall. ex Müll.Arg., **FMP3** 203, **TFM2** 122; small shrub; stream banks; Kd.
- 101.55.7 **Phyllanthus emblica** L., **TFM2** 123; *Emblica pectinata* (Hook.f.) Ridl., **FMP3** 217; tree to 36 m tall; lowland and hill forest; scattered throughout.
- 101.55.8 **Phyllanthus filicifolius** Gage, **FMP3** 201, **TFM2** 121; shrub; lowland including limestone; P. Langkawi; endemic.
- 101.55.9 **Phyllanthus gomphocarpus** Hook.f., **FMP3** 204, **TFM2** 122; shrub to 3 m tall; lowlands to mountain tops at 2100 m; widespread.
- 101.55.10 **Phyllanthus gracilipes** (Miq.) Müll.Arg., **FMP3** 214, **TFM2** 122; *Phyllanthus hullettii* Ridl., **FMP3** 204; shrub; lowland and montane forest; P. Langkawi, Ml.
- 101.55.11 **Phyllanthus oxyphyllus** Miq., **TFM2** 123; *Phyllanthus frondosus* Wall. ex Müll.Arg., **FMP3** 202; shrub or small tree; lowlands to mountains, rarely on limestone; common throughout.
- 101.55.12 **Phyllanthus pachyphyllus** Müll.Arg., **TFM2** 123; *Phyllanthus campanulatus* Ridl., **FMP3** 203; *Phyllanthus coriaceus* Wall. ex Hook.f., **FMP3** 203; shrub or small tree; hill and montane forest; scattered widely.

- 101.55.13 **Phyllanthus pulcher** Wall. ex Müll.Arg., **FMP3** 201, **TFM2** 121; shrub to 60 cm tall; open ground, often near rivers, also cultivated; widespread.
- 101.55.14 **Phyllanthus reticulatus** Poir., **FMP3** 202, **TFM2** 123; *Phyllanthus dalbergioides* Wall. ex J.J.Sm., **FMP3** 201; *Phyllanthus erythrocarpus* Ridl., **FMP3** 202; shrub or small tree; open country, forest margins; Kd, Tg, Ph, Sl, Ml, Jh.
- 101.55.15 **Phyllanthus ridleyanus** Airy Shaw, **TFM2** 123; *Phyllanthodendron coriaceum* Gage, **FMP3** 205; *Phyllanthodendron dubium* (Ridl.) Gage, **FMP3** 205 in part; scandent shrub; on limestone; Kl, Pk.
- 101.55.16 **Phyllanthus roseus** (Craib & Hutch.) Beille, **TFM2** 123; *Phyllanthodendron dubium* (Ridl.) Gage, **FMP3** 205 in part; shrub; lowlands and hills to 750 m; P. Langkawi, Kd, Pn, Tg, Pk.
- 101.55.17 **Phyllanthus sikkimensis** Müll.Arg., **TFM2** 122; *Phyllanthus hamiltonianus* Müll.Arg., **FMP3** 204; shrub; open country; Ps.
- 101.55.18 **Phyllanthus urinaria** L., **FMP3** 200, **TFM2** 122, **M47** 292; herb to 60 cm tall; weed of cultivation, waste ground; throughout.
- R30** have split this species into four, with two subspecies of *P. urinaria* recognized. These authors indicate that *Phyllanthus urinaria* L. ssp. *urinaria*, *Phyllanthus nozeranii* Rossignol & Haicour and *Phyllanthus hookeri* Müll.Arg. are to be found in Malaya
- 101.55.19 **Phyllanthus virgatus** G. Forst., **TFM2** 121, **M47** 294; *Phyllanthus simplex* Retz., **FMP3** 200; small shrub; open ground; widespread.
- 101.55.20 **Phyllanthus watsonii** Airy Shaw, **A03** 493, **TFM2** 122; shrub to 15 cm tall; near fast-flowing rivers; Ulu Sg. Endau, Jh; endemic.
- 101.56.1 **Pimelodendron griffithianum** (Müll.Arg.) Benth., **FMP3** 313 'Pimeleodendron', **TFM2** 125; tree often to 21 m tall, sometimes reaching 39 m; lowland forest; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 101.56.2 **Pimelodendron macrocarpum** J.J.Sm.; **A03** 551, **TFM2** 126; tree to 18 m tall; swampy lowland forest; Sl, Ml, Jh.
- 101.57.1 **Pterococcus corniculatus** (Sm.) Pax & K. Hoffm., **TFM2** 84; *Pterococcus glaberrimus* Hassk., **FMP3** 309; slightly woody twiner; open ground, sometimes cultivated; Ph, Ml, Jh, Sp.
- 101.58.1 **Ptychopyxis caput-medusae** (Hook.f.) Ridl., **FMP3** 295, **TFM2** 127; tree to 27 m tall; lowland and hill forest to 480 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Sp; endemic.
- 101.58.2a **Ptychopyxis costata** Miq. var. *costata*, **TFM2** 127; tree to 4 m tall; lowland forest; once from Sg Krian, Pk.

- 101.58.2b **Ptychopyxis costata** Miq. var. **oblanceolata** Airy Shaw, **TFM2** 127; *Ptychopyxis costata* Miq., **FMP3** 295; tree to 4 m tall; lowland and hill forest; Pk, Ph, Sl, NS, Ml, Sp; endemic variety.
- 101.58.3 **Ptychopyxis javanica** (J.J.Sm.) Croizat, **TFM2** 127; *Ptychopyxis angustifolia* Gage ex Ridl., **FMP3** 296; tree 9–12 m tall; lowland forest; Kd, Pn, Pk.
- 101.58.4 **Ptychopyxis kingii** Ridl., **FMP3** 296, **TFM2** 127; tree to 11 m tall; lowland and hill forest to 750 m; Pk, Ph, Jh.
- 101.58.5 **Ptychopyxis triradiata** Airy Shaw, **TFM2** 127; tree to 15 m tall; known only from type, Bota Kiri F. R., Pk; endemic.
- 101.59.1 **Richeriella malayana** M.R. Hend., **H35** 122, **TFM2** 128; shrub or small tree 3–12 m tall; lowlands, also on limestone; Pn, Tg, Pk, P. Tioman, Ml.
- 101.60.1 **Ricinus communis** L., **FMP3** 309; shrub to 2 m tall; waste ground; naturalized from Africa.
- 101.61.1 **Sapium baccatum** Roxb., **FMP3** 315, **TFM2** 129; tree to 36 m tall; lowland and hill forest to 600 m; throughout.
- 101.61.2 **Sapium discolor** (Champ. ex Benth.) Müll.Arg., **FMP3** 316, **TFM2** 129; tree to 24 m tall; lowland and hill forest to 800 m; Pk, Ph, Sl, NS, Jh.
- 101.61.3 **Sapium indicum** Willd., **FMP3** 317, **TFM2** 129; tree to 18 m tall, usually smaller; lowland forest margins; widespread.
- 101.61.4 **Sapium insigne** (Royle) Benth & Hook.f. ex Pax & K. Hoffm., **TFM2** 129; tree to 9 m tall; on limestone; once from Batu Caves, Sl.
- In his recent revision of *Sapium*, Kruijt [**K71**] restricts the genus to tropical America and refers to the Malayan species as *Excoecaria baccata* (Roxb.) Müll.Arg., *Excoecaria discolor* (Champ. ex Benth.) Müll.Arg., *Shirakia indica* (Willd.) Hurus. and ?*Falconeria insignis* Royle.
- 101.62.1 **Sauropus androgynus** (L.) Merr., **TFM2** 131; *Sauropus albicans* Blume, **FMP3** 220; *Sauropus sumatranus* Miq., **FMP3** 220; shrub or small tree; lowlands, often cultivated; widespread.
- 101.62.2 **Sauropus bacciformis** (L.) Airy Shaw, **A05** 685; *Agyneia bacciformis* L., **FMP3** 198; *Synostemon bacciformis* (L.) G.L. Webster, **TFM2** 133; bushy herb; saline soils, usually near the sea; Tg, Ph, Jh, Sp.
- 101.62.3 **Sauropus brevipes** Müll.Arg., **TFM2** 130; *Sauropus parvifolius* Ridl., **FMP3** 221; shrub; lowlands, sometimes on limestone; Ps, P.Langkawi, Kd, Ph.
- 101.62.4 **Sauropus calcareus** M.R. Hend., **H35** 121, **TFM2** 130; small shrub; on limestone; once from Gg Senyum, Ph; endemic.

- 101.62.5 **Sauropus elegantissimus** Ridl., **TFM2** 130; treelet to 5 m tall; hill forest at 450 m; only known from type, Ulu Gombak, Sl; endemic.
- 101.62.6 **Sauropus macranthus** Hassk., **TFM2** 131; *Sauropus spectabilis* Miq., **FMP3** 220; ?*Sauropus forcipatus* Hook.f., **FMP3** 220; shrub to 4 m tall; on limestone; only definite record is Batu Caves, Sl.
- 101.62.7 **Sauropus suberosus** Airy Shaw, **TFM2** 130; shrub to 3 m tall; on limestone hills; Pk, Ph; endemic.
- 101.62.8 **Sauropus villosus** (Blanco) Merr., **TFM2** 130; *Sauropus llanosii* (Müll.Arg.) Gage, **FMP3** 221; shrub to 1 m tall; usually on limestone; Ps, Kd, Kl, Ph.
- 101.63.1 **Sebastiania borneensis** Pax & K. Hoffm., **TFM2** 131; small tree to 12 m tall; lowland forest; once from Gg Arong F. R., Jh.
- 101.63.2 **Sebastiania chamaelea** (L.) Müll.Arg., **FMP3** 317, **TFM2** 131; herb to 90 cm tall; open sandy places near the sea; widespread.
- 101.64.1 **Spathiostemon javensis** Blume, **TFM2** 132; *Polydragma mallotiforme* Hook.f., **FMP3** 310; small tree; once collected in Pk.
- 101.65.1 **Sumbaviopsis albicans** (Blume) J.J.Sm., **TFM2** 132; tree to 10 m tall; on limestone; Tembeling and Bt Serdam, Ph.
- 101.66.1 **Suregada angustifolia** (Müll.Arg.) Airy Shaw, **TFM2** 133; small tree; montane forest; once from Gg Mersing, Ml.
- 101.66.2a **Suregada multiflora** (Juss.) Baill. var. **lamellata** Airy Shaw; **A03** 550, **TFM2** 133; small tree; once from Gua Musang, Kl; endemic variety.
- 101.66.2b **Suregada multiflora** (Juss.) Baill. var. **multiflora**, **TFM2** 133; *Gelonium bifarium* Roxb., **FMP3** 311; *Gelonium glomerulatum* Hassk., **FMP3** 311; *Gelonium multiflorum* Juss., **FMP3** 311; *Gelonium tenuifolium* Ridl., **FMP3** 312; shrub or small tree to 12 m tall; rocky and sandy shores, also inland in rocky places to 750 m; widespread.
- 101.67.1 **Trewia nudiflora** L., **TFM2** 134; tree to 12 m tall; lowlands; once each from Temiang and Kota Bahru, Kl.
- 101.68.1 **Trigonopleura malayana** Hook.f., **FMP3** 263, **TFM2** 134; *Peniculifera penangensis* Ridl., **FMP1** 290; tree to 27 m tall; lowland forest; widespread.
- 101.69.1 **Trigonostemon aurantiacus** (Kurz ex Teijsm. & Binn.) Boerl., **TFM2** 136; *Actephila aurantiaca* Ridl., **FMP3** 197; *Actephilopsis malayana* Ridl., **FMP3** 252; shrub to 3 m tall; lowlands, sometimes on limestone; Sl and Ph northward.
- 101.69.2 **Trigonostemon croceus** B.C. Stone, **S48** 249; tree to 8 m tall; lower montane forest at about 900 m; Genting Highlands, Sl; endemic.



- 101.69.3 **Trigonostemon diffusus** Merr. ssp. **condensus** R.I. Milne, **M41** 47; *Dimorphocalyx capillipes* Hook.f., **FMP3** 26; *Trigonostemon capillipes* (Hook.f.) Airy Shaw, **TFM2** 135; shrub to 3 m tall; lowlands; once from Kaki Bukit, Ps.
- 101.69.4 **Trigonostemon elegantissimus** Airy Shaw, **TFM2** 135; tree to 20 m tall; lowland forest; once from Ulu Endau, Jh.
- 101.69.5 **Trigonostemon laevigatus** Müll.Arg., **FMP3** 265, **TFM2** 135; tree to 7 m tall; coasts; P. Langkawi, Pn, Tg, Pk, P. Tioman, Jh.
- 101.69.6 **Trigonostemon longifolius** Baill., **FMP3** 264, **TFM2** 136; shrub or small tree to 4 m tall; lowland and hill forest to 600 m; throughout.
- 101.69.7 **Trigonostemon malaccanus** Müll.Arg., **FMP3** 265, **TFM2** 136; shrub; lowland forest; widely scattered.
- 101.69.8 **Trigonostemon philippinensis** Stapf, **A06** 355; *Trigonostemon sumatranus* (*non* Pax & K. Hoffm.) S. Moore, **TFM2** 135; tree to 7 m tall; lowland forest; Jh.
- 101.69.9 **Trigonostemon polyanthus** Merr., **M41** 30; *Trigonostemon borneensis* Merr., **TFM2** 136; shrub to 2 m tall; swampy lowland forest; twice from S.E. Jh.
- 101.69.10 **Trigonostemon rufescens** Jabl., **TFM2** 135; shrub; Jh; endemic.
- 101.69.11 **Trigonostemon sinclairii** Jabl., **TFM2** 135; slender treelet to 4 m tall; Kd, Kl, Tg; endemic.
- 101.69.12a **Trigonostemon verticillatus** (Jack) Pax *ex* Pax & K. Hoffm. var. **salicifolius** (Ridl.) Whitmore, **TFM2** 136; *Trigonostemon salicifolius* Ridl., **FMP3** 264; shrub to 1 m tall; Sl, Pk; ?endemic variety.
- 101.69.12b **Trigonostemon verticillatus** (Jack) Pax *ex* Pax & K. Hoffm. var. **verticillatus**, **TFM2** 136; *Trigonostemon indicus* (Baill.) Müll.Arg., **FMP3** 264; tree to 8 m tall; hill forest; Pn, Pk, Sl, Ml.
- 101.69.13 **Trigonostemon villosus** Hook.f., **FMP3** 265, **TFM2** 135, **M41** 47; shrub to 4 m tall; lowland forest; Tg and Pk southward; endemic type subspecies.
- 101.69.14 **Trigonostemon viridissimus** (Kurz) Airy Shaw, **A03** 545, **TFM2** 135; shrub to 90 cm tall; most but not all records from limestone; Ulu Gali and Bt Serdam, Ph.
- 101.69.15 **Trigonostemon wetriifolius** Airy Shaw & Ng, **A07** 237; unbranched treelet, to 3 m tall; lowland forest; Lesong F.R., Endau-Rompin, south Ph; endemic.
- 101.70.1 **Wetria insignis** (Steud.) Airy Shaw, **TFM2** 136; tree to 18 m tall; lowland forest; Pk, Ph, Sl; ?endemic.

## 102. FAGACEAE

- 102.1.1 **Castanopsis acuminatissima** (Blume) A. DC., **TFM1** 201, **FMi7** 307; *Pasania acuminatissima* (Blume) Oerst., **FMP3** 386; tree to 36 m tall, often multi-stemmed; montane forest above 700 m; Kd, Tg, Pk, Ph, Sl.
- 102.1.2 **Castanopsis cattapifolia** King *ex* Hook.f., **FMP3** 389, **TFM1** 201, **FMi7** 311; tree to 27 m tall; lowland forest; known only from type, Gopeng, Pk; endemic.
- 102.1.3 **Castanopsis costata** (Blume) A. DC., **FMP3** 390, **TFM1** 203, **FMi7** 312; tree to 36 m tall; lowland to lower montane forest; Pk, Ph, Jh.
- 102.1.4 **Castanopsis curtisii** King, **FMP3** 392, **TFM1** 204, **FMi7** 298; tree to 20 m tall; lowland forest; P. Langkawi, Kd, Pn, Sl.
- 102.1.5 **Castanopsis foxworthyi** Schottky, **FMi7** 309; tree 15–36 m tall; lowland peatswamp and heath forest, also upper montane forest; Tg.
- 102.1.6 **Castanopsis fulva** Gamble, **FMP3** 389, **TFM1** 204, **FMi7** 312; tree 18–24 m tall; lowland forest; Tg, Pk, Ph, Sl, NS, Jh.
- 102.1.7 **Castanopsis inermis** (Lindl. *ex* Wall.) Benth. & Hook.f., **TFM1** 204, **FMi7** 315; *Castanopsis sumatrana* A. DC., **FMP3** 390; tree 10–30 m tall; lowland and hill forest; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.
- 102.1.8 **Castanopsis javanica** (Blume) A. DC., **TFM1** 205, **FMi7** 306; *Pasania discocarpa* (Hance) Gamble, **FMP3** 386; tree to 40 m tall; lowland to lower montane forest at 1650 m; throughout.
- 102.1.9 **Castanopsis johorensis** Soepadmo, **TFM1** 205, **FMi7** 300; tree to 10 m tall; lowland forest; Jh.
- 102.1.10 **Castanopsis lucida** (Nees) Soepadmo, **TFM1** 205, **FMi7** 318; *Alseodaphne lucida* Nees, **FMP3** 100; *Castanopsis hullettii* King, **FMP3** 389; tree to 20 m tall; lowland to lower montane forest; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 102.1.11 **Castanopsis malaccensis** Gamble, **FMP3** 388, **TFM1** 206, **FMi7** 303; tree to 15 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 102.1.12 **Castanopsis megacarpa** Gamble, **FMP3** 390, **TFM1** 206, **FMi7** 305; tree 12–36 m tall; lowland and hill forest to 600 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 102.1.13 **Castanopsis nephelioides** King *ex* Hook.f., **FMP3** 391, **TFM1** 207, **FMi7** 298; tree 10–20 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl, Jh, Sp; endemic.

- 102.1.14 **Castanopsis rhamnifolia** (Miq.) A. DC., **TFM1** 207, **FMI7** 299; tree 10–25 m tall; lowland to montane forest at 1600 m; Kl, Pk, Ph, Sl.
- 102.1.15 **Castanopsis schefferana** Hance, **TFM1** 207, **FMI7** 310; *Castanopsis andersonii* Gamble, **FMP3** 389; tree 10–24 m tall; lowland forest; Kd, Tg, Ph, NS, Jh, Sp.
- 102.1.16 **Castanopsis scortechinii** Gamble, **FMP3** 389, **TFM1** 208, **FMI7** 312; tree to 15 m tall; lower montane forest at 1000–1200 m; Pk, Ph; endemic.
- 102.1.17 **Castanopsis tunggurut** (Blume) A. DC., **TFM1** 208, **FMI7** 303; *Castanopsis ridleyi* Gamble, **FMP3** 391; tree 20–25 m tall; lowland forest; Sl, NS, MI.
- 102.1.18 **Castanopsis wallichii** King *ex* Hook.f., **FMP3** 391, **TFM1** 208, **FMI7** 300; tree 12–15 m tall; lowland forest; Kd, Pn, Pk, Sl, MI, Sp; endemic.
- 102.2.1 **Lithocarpus bancanus** (Scheff.) Rehder, **TFM1** 213, **FMI7** 360; tree to 25 m tall; lowland forest; Ph, Jh.
- 102.2.2 **Lithocarpus bennettii** (Miq.) Rehder, **TFM1** 215, **FMI7** 356; *Pasania bennettii* (Miq.) Gamble, **FMP3** 381; tree to 35 m tall; lowlands and mountains; Kl, Ph, NS, Jh, Sp.
- 102.2.3 **Lithocarpus burkillii** A. Camus, **TFM1** 215, **FMI7** 329; *Pasania beccariana auct. non* (Benth.) Prantl, **FMP3** 387; tree about 24 m tall; montane forest at 1200 m; only known from type, Fraser's Hill, Ph; endemic.
- 102.2.4 **Lithocarpus cantleyanus** (King *ex* Hook.f.) Rehder, **TFM1** 216, **FMI7** 352; *Pasania cantleyana* (King *ex* Hook.f.) Gamble, **FMP3** 381; tree to 36 m tall; lowland and hill forest to 850 m; Kl, Pk, Ph, Sl, Jh, Sp.
- 102.2.5 **Lithocarpus clementianus** (King *ex* Hook.f.) A. Camus, **TFM1** 216, **FMI7** 365; *Pasania clementiana* (King *ex* Hook.f.) Gamble, **FMP3** 383; tree to 36 m tall; lower montane forest; Pn, Kl, Tg, Ph.
- 102.2.6 **Lithocarpus confragosus** (King *ex* Hook.f.) A. Camus, **TFM1** 216, **FMI7** 335; *Pasania confragosa* (King *ex* Hook.f.) Gamble, **FMP3** 385; tree to 29 m tall; hill forest; once from Keledang Saiong F.R., Pk.
- 102.2.7 **Lithocarpus conocarpus** (Oudem.) Rehder, **TFM1** 217, **FMI7** 349; *Pasania conocarpa* (Oudem.) Schottky, **FMP3** 380; tree to 45 m tall; lowland to montane forest at 1800 m; Kd, Pk, Sl, Sp.
- 102.2.8 **Lithocarpus coopertus** (Blanco) Rehder, **TFM1** 217, **FMI7** 335; tree to 45 m tall; montane forest; only known from Gg Tapis, Ph.
- 102.2.9 **Lithocarpus curtisii** (King *ex* Hook.f.) A. Camus, **TFM1** 217, **FMI7** 380; *Pasania curtisii* (King *ex* Hook.f.) Gamble, **FMP3** 380; tree to 27 m tall; lowland forest; Pn, Kl, Tg, Pk, Ph, Sl; endemic.

- 102.2.10 **Lithocarpus cyclophorus** (Endl.) A. Camus, **TFM1** 218, **FMi7** 345; *Pasania cyclophora* (Endl.) Gamble, **FMP3** 384; tree to 40 m tall; montane forest to 1800 m; widespread.
- 102.2.11 **Lithocarpus daphnoideus** (Blume) A. Camus, **TFM1** 218, **FMi7** 352; tree to 24 m tall; lowland forest; Kl, Pk, Ph.
- 102.2.12 **Lithocarpus eichleri** (Wenz.) A. Camus, **TFM1** 218, **FMi7** 218; *Pasania eichleri* (Wenz.) Gamble, **FMP3** 383; tree to 15 m tall; swampy lowland forest; Pk, Sl, Jh.
- 102.2.13 **Lithocarpus elegans** (Blume) Hatus. ex Soepadmo, **TFM1** 219, **FMi7** 366; *Pasania spicata* (non Humb. & Bonpl.) Rees, **FMP3** 377 incl. var. *gracilipes* (Miq.) Schottky; tree to 30 m tall; lowland and montane forest, often in disturbed sites; widespread.
- 102.2.14 **Lithocarpus encleisacarpus** (Korth.) A. Camus, **TFM1** 219, **FMi7** 338; *Pasania encleisacarpa* (Korth.) Gamble, **FMP3** 386 incl. var. *aperta* (King ex Hook.f.) Gamble; tree to 40 m tall; lowlands to 1300 m in the mountains; widespread and common.
- 102.2.15 **Lithocarpus erythrocarpus** (Ridl.) A. Camus, **TFM1** 219, **FMi7** 369; *Pasania erythrocarpa* Ridl., **FMP5** 336; tree to 24 m tall; hill forest, often on ridges; Tg, Ph, Sl, NS; endemic.
- 102.2.16 **Lithocarpus ewyckii** (Korth.) Rehder, **TFM1** 220, **FMi7** 351; *Pasania ewyckii* (Korth.) Gamble, **FMP3** 380 incl. var. *latifolia* King; *Pasania lamponga* (Miq.) Gamble var. *ewyckioides* Gamble, **FMP3** 378; tree to 30 m tall; common in the lowlands, rarer in the mountains; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 102.2.17 **Lithocarpus falconeri** (Kurz) Rehder, **TFM1** 220, **FMi7** 371; *Pasania falconeri* (Kurz) Schottky, **FMP3** 378; tree to 10 m tall; lowland forest; Ps, P. Langkawi, Kd, Pk.
- 102.2.18 **Lithocarpus gracilis** (Korth.) Soepadmo, **TFM1** 220, **FMi7** 362; *Pasania cyrtorhyncha* (Miq.) Gamble, **FMP3** 381; tree to 40 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl, NS, Jh, Sp.
- 102.2.19 **Lithocarpus hendersonianus** A. Camus, **TFM1** 221, **FMi7** 328; tree 20–30 m tall; montane forest at 1300–1500 m; Cameron Highlands, Ph.
- 102.2.20 **Lithocarpus hystrix** (Korth.) Rehder, **FMi7** 384; *Pasania hystrix* (Korth.) Gamble, **FMP3** 379; tree to 30 m tall; lowland to lower montane forest; Pn, Pk, Ph, Sl, NS, Jh, Sp.
- 102.2.21 **Lithocarpus javensis** Blume, **TFM1** 221, **FMi7** 325; tree 20–50 m tall; montane forest; once from Ulu Selangor, Sl.

- 102.2.22 **Lithocarpus kingianus** (Gamble) A. Camus, **TFM1** 221, **FMi7** 381; *Pasania kingiana* Gamble, **FMP3** 221; tree to 20 m tall; lower montane forest; Tg, Ph, Sl; endemic.
- 102.2.23 **Lithocarpus kingii** (A. Camus) Whitmore, **TFM1** 222; *Pasania costata auct. non* (Blume) Gamble, **FMP3** 384; *Lithocarpus perakensis* Soepadmo, *nom. superfl.*, **FMi7** 340; tree to 30 m tall; lowland to lower montane forest at 1200 m; Tg, Pk, Jh; endemic.
- 102.2.24 **Lithocarpus kunstleri** (King ex Hook.f.) A. Camus, **TFM1** 222, **FMi7** 372; *Pasania kunstleri* (King ex Hook.f.) Gamble, **FMP3** 376; tree to 15 m tall; lowland forest; Kd, Kl, Pk, Ph, Sl, NS, Jh; endemic.
- 102.2.25 **Lithocarpus lampadarius** (Gamble) A. Camus, **TFM1** 222, **FMi7** 368; *Pasania lampadaria* Gamble, **FMP3** 384; tree to 36 m tall; mostly montane forest; Tg, Pk, Ph.
- 102.2.26 **Lithocarpus longispinus** Barnett, **TFM1** 223, **FMi7** 334; tree 8–30 m tall; lowland forest; Pk, Sl.
- 102.2.27 **Lithocarpus lucidus** (Roxb.) Rehder, **TFM1** 223, **FMi7** 341; *Pasania lucida* (Roxb.) Gamble, **FMP3** 383; *Pasania omalokos* (Korth.) Schottky, **FMP3** 383; tree to 40 m tall; forests to 1600 m; throughout.
- 102.2.28 **Lithocarpus macphailii** (M.R. Hend.) Barnett, **TFM1** 223, **FMi7** 339; *Pasania macphailii* M.R. Hend., **H32** 76; tree to 45 m tall; lowland to montane forest; Kl, Tg, Pk, Ph, Sl, Jh.
- 102.2.29 **Lithocarpus maingayi** (Benth.) Rehder, **TFM1** 224, **FMi7** 331; *Pasania maingayi* (Benth.) Schottky, **FMP3** 387; tree 10–15 m tall; hill forest at 600–1000 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.
- 102.2.30 **Lithocarpus neorobinsonii** A. Camus, **TFM1** 224, **FMi7** 336; *Pasania blumeana sensu* Ridl., **FMP3** 385; *Pasania robinsonii* (Ridl.) Gamble, **FMP3** 387; tree to 15 m tall; montane forest at 1500–1700 m; Ph, Sl.
- 102.2.31 **Lithocarpus pattaniensis** Barnett, **TFM1** 224, **FMi7** 336; tree to 20 m tall; montane forest at 1500–1700 m; Kl, Pk, Ph, Sl.
- 102.2.32 **Lithocarpus rassa** (Miq.) Rehder, **TFM1** 225, **FMi7** 364; *Pasania rassa* (Miq.) Gamble, **FMP3** 382 incl. var. *lanuginosa* Ridl.; *Pasania wenzigiana* (King ex Hook.f.) Gamble, **FMP3** 382; tree to 24 m tall; lowlands but commoner in the mountains; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 102.2.33 **Lithocarpus scortechinii** (King ex Hook.f.) A. Camus, **TFM1** 225, **FMi7** 380; *Pasania scortechinii* (King ex Hook.f.) Schottky, **FMP3** 376; tree to 20 m tall; hill forest; Kl, Pk, Ph.

- 102.2.34 **Lithocarpus suffruticosus** (Ridl.) Soepadmo, **TFM1** 226, **FMi7** 366; *Pasania rassa* (Miq.) Gamble var. *suffruticosa* Ridl., **FMP3** 382; shrub or tree 3–15 m tall; montane forest; Tg, Pk, Ph, Sl.
- 102.2.35 **Lithocarpus sundaicus** (Blume) Rehder, **TFM1** 226, **FMi7** 375; *Pasania sundaica* (Blume) Oerst., **FMP3** 379; *Pasania grandifrons* (King ex Hook.f.) Gamble, **FMP3** 377; *Pasania lamponga* (Miq.) Gamble, **FMP3** 378; tree to 36 m tall; lowland forest; widespread and common.
- 102.2.36 **Lithocarpus urceolaris** (Jack) Merr., **TFM1** 226, **FMi7** 344; tree to 33 m tall; lowland to lower montane forest; Tg, Ph, Jh.
- 102.2.37 **Lithocarpus wallichianus** (Lindl. ex Hance) Rehder, **TFM1** 227, **FMi7** 368; *Pasania wallichiana* (Lindl. ex Hance) Gamble, **FMP3** 378; tree to 30 m tall; lowland and hill forest; throughout.
- 102.2.38 **Lithocarpus wrayi** (King) A. Camus, **TFM1** 227, **FMi7** 334; *Pasania wrayi* (King) Gamble, **FMP3** 385; *Pasania lappacea auct. non* Oerst., **FMP3** 375; tree 12–30 m tall; lowland to lower montane forest at 1350 m; Kd, Kl, Tg, Pk, Ph, NS.
- 102.3.1 **Quercus argentata** Korth., **FMP3** 373, **TFM1** 228, **FMi7** 389; tree to 37 m tall; lowland to montane forest; Tg, Ph, Ml, Jh, Sp.
- 102.3.2 **Quercus elmeri** Merr., **TFM1** 229, **FMi7** 398; tree to 40 m tall; montane forest; Ph.
- 102.3.3 **Quercus gaharuensis** Soepadmo, **TFM1** 229, **FMi7** 391; *Quercus oidocarpa auct. non* Korth., **FMP3** 373 in part; tree to 30 m tall; lowland to lower montane forest; Pn, Pk, Sl.
- 102.3.4 **Quercus gemelliflora** Blume, **TFM1** 229, **FMi7** 395; *Quercus turbinata* Blume var. *crassilamellata* Gamble, **FMP3** 373; tree to 30 m tall; lowland to lower montane forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 102.3.5 **Quercus lineata** Blume, **TFM1** 230, **FMi7** 396; tree to 30 m tall; montane forest; Tg, Ph.
- 102.3.6 **Quercus nivea** King, **TFM1** 231, **FMi7** 391; tree to 25 m tall; hill forest; Kl, Tg, Ph.
- 102.3.7 **Quercus oidocarpa** Korth., **FMP3** 373 in part, **FMi7** 392; tree to 30 m tall; lowland and hill forest; Ph, Sl.
- 102.3.8 **Quercus subsericea** A. Camus, **TFM1** 231, **FMi7** 393; tree to 15 m tall; lowland to lower montane forest; Kl, Pk, Ph, NS, Ml.
- 102.4.1 **Trigonobalanus verticillata** Forman, **TFM1** 232, **FMi7** 400; tree to 36 m tall, often suckering; montane forest; Ph.

103. FLACOURTIACEAE
- 103.1.1 **Casearia albicans** Wall. *ex* C.B. Clarke, **FMP1** 833, **FM15** 89, **TFM2** 140; tree to 10 m tall; lowland forest to 550 m; Pn, Pk; endemic.
- 103.1.2 **Casearia capitellata** Blume, **FM15** 102, **TFM2** 141; *Casearia latifolia* Ridl., **FMP1** 831; shrub or small tree to 4 m tall; lowland forest; Pn, Tg, Pk, Ph, Sl.
- 103.1.3a **Casearia clarkei** King var. **clarkei**, **FMP1** 833, **FM15** 99, **TFM2** 141; tree 10–15 m tall; lowland and hill forest to 1000 m; Pn, Pk, Sl, Ml, Sp; endemic.
- 103.1.3b **Casearia clarkei** King var. **kunstleri** (King) Ridl., **FMP1** 833, **FM15** 100; tree 20–28 m tall; lowland forest; Pk, Ph, Sl, Jh; endemic.
- 103.1.4 **Casearia flavovirens** Blume, **FM15** 100, **TFM2** 140; *Casearia pallida* Craib, **FM15** 98; hill forest; P. Langkawi, Kl, Sl.
- 103.1.5 **Casearia flexula** Ridl., **FMP1** 832, **FM15** 102, **TFM2** 140; shrub to 7.5 m tall; montane forest at 660–1200 m; only known with certainty from Gg Jerai, Kd; endemic.
- 103.1.6a **Casearia grewiifolia** Vent. var. **deglabrata** Koord. & Valetton, **FM15** 95, **TFM2** 142; *Casearia leucolepis* Turcz., **FMP1** 831; shrub or tree; lowland forest; Pk, Tg, Jh.
- 103.1.6b **Casearia grewiifolia** Vent. var. **grewiifolia**, **FMP1** 830, **FM15** 93, **TFM2** 142; shrub or tree to 24 m tall; lowland forest; Pk, Jh.
- 103.1.7 **Casearia lobbiana** Turcz., **FMP1** 830, **FM15** 89, **TFM2** 140; shrub or small tree to 12 m tall; lowland and hill forest to 1000 m; Pn, Pk, Sl, NS, Ml, Sp.
- 103.1.8 **Casearia macrocarpa** C.B. Clarke, **FMP1** 833, **FM15** 100, **TFM2** 140; tree to 6 m tall; hill forest; Pn; endemic.
- 103.1.9 **Casearia minutiflora** Ridl., **FMP5** 311, **FM15** 101, **TFM2** 140; shrub 1.5 m tall; montane forest at 1200–1300 m; Ph; endemic.
- 103.1.10 **Casearia tuberculata** Blume, **FM15** 99, **TFM2** 141; *Casearia coriacea* *auct. non* Vent., **FMP1** 832; small tree; lowland to montane forest; Pk, Ph.
- 103.1.11 **Casearia velutina** Blume, **FM15** 91, **TFM2** 140; shrub or small tree to 15 m tall; lowlands; Kd.
- 103.1.12 **Casearia velutinosa** Ridl., **FMP1** 831, **FM15** 89, **TFM2** 140; shrub or occasionally small tree reaching 10 m tall; lowland forest often near streams; Tg, Pk, Sl, Jh.

- 103.2.1 **Erythrospermum candidum** (Becc.) Becc., **FM15** 7, **TFM2** 143; *Erythrospermum scortechinii* King, **FMP1** 157; tree to 15 m tall; ridge-top forest to 450 m; Pk, Ph, Sl, NS, Ml.
- 103.3.1 **Flacourtia rukam** Zoll. & Moritzi, **FMP1** 157, **FM15** 73, **TFM2** 144; small thorny tree; lowland forest; widespread.
- 103.4.1 **Hemiscolopia trimera** (Boerl.) Slooten, **FM15** 65, **TFM2** 144; tree to 10 m tall; coastal forest; Ph, Ml, Jh (mostly offshore).
- 103.5.1 **Homalium caryophyllaceum** (Zoll. & Moritzi) Benth., **FM15** 58, **TFM2** 145; *Homalium frutescens* Warb., **FMP1** 836; tree to 6 m tall; swampy lowland forest; central and south Malaya.
- 103.5.2 **Homalium dasyanthum** (Turcz.) W.Theob., **FM15** 56, **TFM2** 145, **M06** 155; *Homalium griffithianum* Kurz, **FMP1** 835; tree to 30 m tall; near the coast, including limestone areas; P. Langkawi, Kd, Ph, Jh.
- 103.5.3 **Homalium dictyoneurum** (Hance) Warb., **FM15** 565, **TFM2** 146; tree to 36 m tall; lowland forest; Kd, Tg, Jh.
- 103.5.4 **Homalium foetidum** (Roxb.) Benth., **FM15** 57, **TFM2** 146; *Homalium propinquum* C.B. Clarke, **FMP1** 835; tree to 24 m tall; lowland forest often near rivers; Pn, Kl, Pk, Ml.
- 103.5.5 **Homalium grandiflorum** Benth., **FMP1** 837, **FM15** 62, **TFM2** 146; tree to 36 m tall; lowland forest; Sl, NS, Ml, Sp.
- 103.5.6 **Homalium kunstleri** King, **FMP1** 825, **FM15** 56, **TFM2** 145, **C14** 143; tree 6–14 m tall; on limestone; only known from near Larut, Pk; endemic.
- 103.5.7 **Homalium longifolium** Benth., **FMP1** 834, **FM15** 55, **TFM2** 146; tree to 42 m tall; lowland forest; widespread.
- 103.5.8 **Homalium spathulatum** Ridl., **FMP1** 835, **FM15** 59, **TFM2** 145; tree; lowland forest; only known from type, P. Pangkor, Pk; endemic.
- 103.5.9 **Homalium undulatum** King, **FMP1** 837, **FM15** 61, **TFM2** 145, **C14** 143; tree to 20 m tall; limestone hills; P. Langkawi, Pk.
- 103.6.1 **Hydnocarpus castanea** Hook.f. & Thomson, **FMP1** 159, **FM15** 26, **TFM2** 150; tree to 30 m tall; lowlands to 460 m; P. Langkawi, Pn, Tg, Pk, Ph, NS, Jh.
- 103.6.2 **Hydnocarpus cucurbitina** King, **FMP1** 161, **FM15** 25; tree to 9 m tall; lowland forest; Pk, Ph, Jh; endemic.
- 103.6.3 **Hydnocarpus curtisii** King, **FMP1** 160, **FM15** 27, **TFM2** 150; tree to 30 m tall; lowland forest; P. Langkawi, Pn, Tg, Pk, Ph, NS, Jh.



- 103.6.4 **Hydnocarpus filipes** Symington *ex* Sleumer, **FMi5** 26, **TFM2** 150; tree to 36 m tall; lowland forest; Tg, Pk, Ph, Sl; endemic.
- 103.6.5 **Hydnocarpus humei** Ridl., **FMi5** 19, **TFM2** 149; tree to 10 m tall; lowland and hill forest; Larut, Pk, and Klang Gates, Sl; endemic.
- 103.6.6 **Hydnocarpus ilicifolia** King, **FMP1** 161, **FMi5** 19, **TFM2** 149, **C14** 143; small prickly-leaved tree; on limestone; Ps, P. Langkawi, Kd, Ph.
- 103.6.7a **Hydnocarpus kunstleri** (King) Warb. var. **kunstleri**, **FMi5** 20, **TFM2** 150; *Teraktogenos kunstleri* King, **FMP1** 162; *Teraktogenos scortechinii* King, **FMP1** 162; tree to 21 m tall; lowland and hill forest to 1000 m; Pk, Ph, Sl.
- 103.6.7b **Hydnocarpus kunstleri** (King) Warb. var. **tomentosa** (King) Sleumer, **FMi5** 21, **TFM2** 152; *Teraktogenos kunstleri* King var. *tomentosa* (King) Ridl., **FMP1** 163; tree to 21 m tall; lowland and hill forest; Tg, Pk, Ph, Sl, Jh; endemic variety.
- 103.6.8 **Hydnocarpus kurzii** (King) Warb. ssp. **australis** Sleumer, **FMi5** 21, **TFM2** 150; tree to 16 m tall; lowland to montane forest; Kl, Ph, Pk.
- 103.6.9 **Hydnocarpus nana** King, **FMP1** 159, **FMi5** 24, **TFM2** 149; shrub or tree to 6 m tall; lowland forest; widespread, commoner in the north; endemic.
- 103.6.10 **Hydnocarpus scortechinii** King, **FMP1** 161, **FMi5** 27, **TFM2** 149; tree; lowland forest; P. Pangkor & Dindings, Pk; endemic.
- 103.6.11 **Hydnocarpus woodii** Merr., **FMi5** 28, **TFM2** 152; tree to 36 m tall; lowland and hill forest to 1000 m; Ps, Tg, Pk, Ph, Sl, NS, Jh.
- 103.6.12 **Hydnocarpus wrayi** King, **FMP1** 161, **FMi5** 22, **TFM2** 149; small tree occasionally reaching 21 m tall; lowland forest, sometimes at greater altitudes; Kl, Tg, Pk, Ph, Jh.
- 103.7.1 **Osmelia maingayi** King, **FMP1** 833, **FMi5** 153, **TFM2** 153; tree to 12 m tall; lowland forest; widespread.
- 103.7.2 **Osmelia philippina** (Turcz.) Benth., **FMi5** 79, **TFM2** 153; tree to 12 m tall; lowland forest; Pk, Sp; [doubtfully distinct from previous species].
- 103.8.1 **Pangium edule** Reinw., **FMP1** 163, **FMi5** 36, **TFM2** 155; tree to 20 m tall; around villages, possibly not wild; widespread.
- 103.9.1 **Ryparosa fasciculata** King, **FMP1** 166, **FMi5** 43, **TFM2** 158; tree to 6 m tall; lowland forest; Ml and Ph northward; endemic.
- 103.9.2 **Ryparosa hullettii** King, **FMP1** 165, **FMi5** 48, **TFM2** 159; shrub or tree to 20 m tall; swampy lowland forest; Tg, Pk, Jh, Sp.

- 103.9.3 **Ryparosa javanica** Kurz *ex* Koord., **FMI5** 45, **TFM2** 159; *Ryparosa wrayi* King, **FMP1** 164; tree to 20 m tall; lowland forest; Pk, Ph, Sl.
- 103.9.4 **Ryparosa kunstleri** King, **FMP1** 165, **FMI5** 48, **TFM2** 159; *Xanthophyllum hebecarpum* Chodat, **FMP1** 149; tree to 18 m tall; lowland to montane forest at 1200 m; Kd, Pk, Ph, Sl.
- 103.9.5 **Ryparosa scortechinii** King, **FMP1** 166, **FMI5** 42, **TFM2** 159; small tree to 12 m tall; lowland and hill forest to 900 m; Pn & Kl southward; endemic.
- 103.9.6 **Ryparosa wallichii** Ridl., **FMP1** 165, **FMI5** 44; *Ryparosa acuminata sensu* Whitmore, **TFM2** 159; tree; lowland forest; Pn, Ph, Sl, NS.
- 103.10.1 **Scaphocalyx spathacea** Ridl., **FMP1** 164, **FMI5** 35, **TFM2** 159; *Scaphocalyx parviflora* Ridl., **FMP1** 164, **FMI5** 35; tree to 15 m tall; lowland forest; Kl, Ph, Sl, NS, Ml, Jh; endemic.
- 103.11.1 **Scolopia macrophylla** (Wight & Arn.) Clos, **FMI5** 8, **TFM2** 160; *Scolopia rhinantha* (Benn. & Br.) Clos, **FMP1** 155; spiny tree to 9 m tall; lowlands, usually coastal; widespread.
- 103.11.2 **Scolopia spinosa** (Roxb.) Warb., **FMI5** 10, **TFM2** 160; *Scolopia roxburghii* (Benn.) Clos, **FMP1** 156; spiny tree to 15 m tall; lowlands; widespread.
- 103.11.3 **Scolopia steenisiana** Sleumer, **TFM2** 161, **C14** 144; tree to 15 m tall; on limestone; Kl, Sl; endemic.
104. GENTIANACEAE
- 104.1.1 **Canscora andrographioides** Griff. *ex* C.B. Clarke, **FMP2** 433, **U01** 77; herb to 30 cm tall; montane forest; Gg Jerai, Kd.
- 104.1.2 **Canscora pentanthera** C.B. Clarke, **FMP2** 433, **C14** 144, **U01** 74; herb to 50 cm tall; mostly on dry limestone hills; Sl northward.
- 104.1.3 **Canscora trinervia** Ridl., **FMP2** 433; herb to 15 cm tall; banks of montane streams; Gg Tahan, Ph; endemic.
- 104.2.1 **Crawfurdia trinervis** (Blume) Dietr., **U01** 89; *Crawfurdia blumei* G. Don, **FMP2** 434; slender climber; upper montane forest; Pk, Ph.
- 104.3.1 **Exacum tetragonum** Roxb., **FMP2** 432, **C14** 144, **U01** 79; herb to 1 m tall; open grassy places; Pk northward.
- 104.4.1 **Gentiana malayana** Ridl., **FMP2** 434; herb to 10 cm tall; on damp rocks in high mountains; Gg Benom & Gg Tahan, Ph; endemic.
- 104.5.1 **Microrphium pubescens** C.B. Clarke, **FMP2** 434, **C14** 144, **U01** 82; herb to 1 m tall; on limestone; P. Langkawi, Ph.

## 105. GESNERIACEAE

- 105.1.1 **Aeschynanthus albidus** (Blume) Steud., **B52** 479; *Aeschynanthus purpurascens* Hassk., **FMP2** 497; slender erect epiphyte; lowland forest; Kl, Jh, Sp.
- 105.1.2 **Aeschynanthus angustifolius** (Blume) Steud., **W33** 22; *Aeschynanthus stenophyllus* Ridl., **FMP2** 498; slender epiphyte shrub; lowlands and hills; Pk, Jh.
- 105.1.3 **Aeschynanthus fecundus** P. Woods, **B52** 482; *Aeschynanthus breviflorus* [non (S. Moore) K. Schum.] Ridl., **FMP2** 497; tufted epiphyte to 30 cm tall; lowland forest near rivers; once from Telom, Ph.
- 105.1.4 **Aeschynanthus flippancei** Ridl., **R14** 473; creeping herb; lowlands; Balik Pulau, Pn; endemic.
- 105.1.5 **Aeschynanthus lamponga** Miq. var. **parvifolius** Ridl., **FMP5** 324; slender creeper; Kuala Teku, Ph; endemic variety.
- 105.1.6 **Aeschynanthus lanceolatus** Ridl., **FMP5** 324; slender epiphyte; montane forest; Fraser's Hill, Ph; endemic.
- 105.1.7 **Aeschynanthus longicalyx** Ridl., **FMP2** 499; small shrub about 30 cm tall; montane forest; Pk, Ph, Sl; endemic.
- 105.1.8 **Aeschynanthus longicaulis** Wall. ex R.Br., **B52** 481; *Aeschynanthus marmoratus* T. Moore, **FMP2** 498; trailing epiphyte or epilith; on limestone; Kaki Bukit and Bt Bintang, Ps.
- 105.1.9 **Aeschynanthus longiflorus** DC., **FMP2** 498; small shrub to 30 cm tall; lowland forest; Ph.
- 105.1.10 **Aeschynanthus myrmecophilus** P. Woods, **B52** 483; *Aeschynanthus hildebrandii* auct. non Hemsl., **FMP2** 499; shrubby epiphyte to 60 cm long; montane forest; Pk, Ph; endemic.
- 105.1.11 **Aeschynanthus obconicus** C.B. Clarke, **FMP2** 500 '*obconica*'; slender climber; lowland and hill forest; Pk, Sl.
- 105.1.12 **Aeschynanthus parvifolius** R.Br., **FMP2** 500; creeping epiphyte; lowland to montane forests; widespread.
- 105.1.13 **Aeschynanthus perakensis** Ridl., **FMP2** 498; shrub to 60 cm tall; montane forest; Pk, Ph; endemic.
- 105.1.14a **Aeschynanthus radicans** Jack var. **lanuginosus** Ridl., **FMP2** 500 '*lanuginosa*'; creeping epiphytic or epilithic herb; lowland forest; Pk.

- 105.1.14b **Aeschynanthus radicans** Jack var. **radicans**, **FMP2** 500; creeping epiphytic or epilithic herb; lowland forest; widespread.
- 105.1.15 **Aeschynanthus rhododendron** Ridl., **FMP2** 499; erect shrub to 60 cm tall; montain forests; Taiping Hills, Pk; endemic.
- 105.1.16 **Aeschynanthus speciosus** Hook., **FMP2** 498; small shrub about 30 cm tall; hill forests; Pk, Sl, Ph.
- 105.1.17 **Aeschynanthus wallichii** R.Br., **FMP2** 500; slender woody creeper; lowland and montane forest; scattered.
- 105.2.1 **Agalmyla parasitica** (Lam.) Kuntze, **B44** 224; *Agalmyla staminea* (Vahl) Blume, **FMP2** 501; climbing epiphytic shrub; hill and montane forest; Pk, Ph, Sl.
- 105.3.1 **Boea minutiflora** Ridl., **FMP2** 537, **B49** 420; herb to 10 cm tall; on limestone; known only from type, Gg Senyum, Ph; endemic.
- 105.4.1 **Boeica brachyandra** Ridl., **FMP2** 538, **B46** 370; stemless herb with woody rootstock; hill forest on sandstone; only known from Gg Chinchang, P. Langkawi; endemic.
- 105.4.2 **Boeica nutans** Ridl., **FMP2** 538, **B46** 372; stemless herb; montane forest; only known from type, Gg Kerbau, Pk; endemic.
- 105.5.1 **Chirita caliginosa** C.B. Clarke, **FMP2** 524, **W31** 186; *Chirita parvula* Ridl., **FMP2** 524; herb 30–40 cm tall; limestone rocks and cliffs; Pk, Ph, Sl.
- 105.5.2 **Chirita elata** Ridl., **FMP2** 524, **W31** 189; herb to 60 cm tall; montane forest; Taiping Hills, Pk; endemic.
- 105.5.3 **Chirita glasgovii** Ridl., **FMP2** 526; weak herb to 30 cm tall; probably known only from type; Pk.
- 105.5.4 **Chirita involucrata** Craib, **W31** 199; herb to 45 cm tall; on limestone; Kd, Kl.
- 105.5.5 **Chirita lacunosa** (Hook.f.) B.L. Burtt, **W31** 151; *Didymocarpus lacunosus* Hook.f., **FMP2** 510; stemless herb to 15 cm tall; crevices in limestone; P. Langkawi and Gua Badak, Pk.
- 105.5.6 **Chirita rupestris** Ridl., **FMP2** 525, **W31** 201; herb 10–30 cm tall; on limestone; Ps, P. Langkawi.
- 105.5.7 **Chirita sericea** Ridl., **FMP2** 525 incl. var. *scortechinii* Ridl., **W31** 187; silky herb to 25 cm tall; limestone rocks; Kd, Pk; endemic.

- 105.5.8 **Chirita viola** Ridl., **FMP2** 525, **W31** 190; weak herb to 25 cm tall; often, but not always, on limestone; P. Langkawi, Kd, Kl, Ph;  
Wood's [**W31** 191] single record of *Chirita hamosa* R.Br. from P. Langkawi is *C. viola* (B.L. Burtt *in litt.*).
- 105.6.1 **Cyrtandra barbata** Ridl., **FMP2** 547; herb; lowland forest; Temengoh, Pk; endemic.
- 105.6.2a **Cyrtandra cupulata** Ridl. var. **cupulata**, **FMP2** 546; shrub to 1 m tall; lowland and hill forest; Kd, Kl, Ph, Sl, Ml; endemic.
- 105.6.2b **Cyrtandra cupulata** Ridl. var. **minor** Ridl., **FMP2** 547; shrub to 1 m tall; lowland forest; Kl; endemic.
- 105.6.3 **Cyrtandra dispar** DC., **FMP2** 544; shrub to 1 m tall; montane forests; Pn, Pk.
- 105.6.4 **Cyrtandra falcata** Ridl., **FMP2** 545; epiphyte about 60 cm tall; lowland forest; Pk, Sl; endemic.
- 105.6.5 **Cyrtandra gimlettii** Ridl., **FMP2** 546; herb to 15 cm tall; lowland forest; Kuala Lebir, Kl.
- 105.6.6 **Cyrtandra lanceolata** Ridl., **FMP2** 546; herb to 30 cm tall; montane forest; Gg Panti, Jh; ?endemic.
- 105.6.7 **Cyrtandra patula** Ridl., **FMP2** 545; spreading shrub to 2 m tall; wet lowland forest; Bt Tangga, NS.
- 105.6.8 **Cyrtandra pendula** Blume, **FMP2** 544; creeping herb; lowland forests; widespread.
- 105.6.9 **Cyrtandra rotundifolia** Ridl., **FMP2** 545; herb to 10 cm tall; lowland forests; Pk.  
This species should probably be sunk into *C. pendula* (B.L. Burtt *pers. comm.*).
- 105.6.10 **Cyrtandra suffruticosa** Ridl., **FMP2** 545; shrub to 130 cm tall; on rocks or epiphytic; Pk, Ph, Jh; ?endemic.
- 105.6.11 **Cyrtandra stonei** B.L. Burtt, **B51** 229; *Cyrtandra dispar* DC. var. *glabriflora* B.C. Stone, **S48** 262; shrub to 2 m tall; montane forest about 1500 m; only known from Gg Ulu Kali, Ph; endemic.
- 105.6.12 **Cyrtandra wallichii** (C.B. Clarke) B.L. Burtt, **B47** 179; *Cyrtandra pilosa* auct. non Blume, **FMP2** 545; *Cyrtandra grandiflora* (non Gaudich.) Ridl., **FMP2** 546; shrub to 1 m tall; on banks in lowland and hill forest; widespread.

- 105.7.1 **Didissandra atrocyanea** Ridl., **FMP2** 503; woody-stemmed 'herb' to 15 cm tall; montane forest; Pk; endemic.
- 105.7.2 **Didissandra atropurpurea** Ridl., **FMP2** 504; 'herb' with short woody stem; montane forest; Pk; endemic.
- 105.7.3 **Didissandra castaneifolia** Ridl., **FMP2** 505; short-stemmed herb; on rocks; Kuala Teku, Ph; endemic.
- 105.7.4 **Didissandra frutescens** C.B. Clarke, **FMP2** 502; shrub about 1 m tall; damp spots in lowland and hill forest.
- 105.7.5 **Didissandra glabrescens** Ridl., **FMP2** 505; woody-stemmed herb to 10 cm tall; montane forest; Pk; endemic.
- 105.7.6 **Didissandra hirta** Ridl., **FMP2** 503; woody-stemmed herb to 20 cm tall; forest; Gg Bujong Malacca, Pk; endemic.
- 105.7.7 **Didissandra johorica** Ridl., **FMP2** 502; herb to 1 m tall; hill forest; Gg Panti, Jh; endemic.
- 105.7.8 **Didissandra kiewii** Kiew, **K29** 212; woody-stemmed herb to 15 cm tall; lowland forest; Sg Selai, Jh; endemic.
- 105.7.9 **Didissandra longisepala** Ridl., **FMP2** 503; herb to 15 cm tall; montane forest; Cameron Highlands, Ph; endemic.
- 105.7.10 **Didissandra morganii** Franch., **B42** 100; *Didissandra filicina* Ridl., **FMP2** 505; shrublet to 15 cm tall; montane forest; Pk, Ph, Ml; endemic.
- 105.7.11 **Didissandra petiolata** Ridl., **FMP2** 504; woody-stemmed 'herb'; montane forest; Gg Inas, Pk; endemic.
- 105.7.12 **Didissandra porphyrantha** A. Weber & Kiew, **K48** 1; woody-stemmed 'herb' to 50 cm tall; shaded slopes in lowland and hill forest; Sl; endemic.
- 105.7.13 **Didissandra quercifolia** Ridl., **FMP2** 505; woody-stemmed 'herb' to 15 cm tall; lower montane forest; Pk; endemic.
- 105.7.14 **Didissandra serratifolia** Ridl., **FMP2** 503; woody-stemmed 'herb' to 15 cm tall; montane forest; Gg Bujong Malacca, Pk; endemic.
- 105.7.15 **Didissandra violacea** Ridl., **FMP2** 504; woody-stemmed 'herb' to 15 cm tall; upper montane forest; summit of Gg Batu Puteh, Pk; endemic.
- 105.7.16 **Didissandra wrayi** Ridl., **FMP2** 504; woody-stemmed 'herb'; montane forest; Pk, Ph; endemic.

*Didissandra flammea* Ridl. [**FMP2** 504] and *D. latisejala* Ridl. [**FMP2** 503] have only been recorded from north of the Thai border.

- 105.8.1 **Didymocarpus albinellus** Ridl., **FMP2** 512; hairy herb to 40 cm tall; montane forest; Ph; endemic.
- 105.8.2 **Didymocarpus albinus** Ridl., **FMP2** 512; shrub to 1.5 m tall; lower montane forest; Pk, Ph, Sl.
- 105.8.3a **Didymocarpus albus** Ridl. var. **albus**, **FMP2** 517; woody creeper; montane forest; Pk; endemic.
- 105.8.3b **Didymocarpus albus** Ridl. var. **major** Ridl., **FMP2** 517; woody creeper; montane forest; Pk; endemic.
- 105.8.4 **Didymocarpus albomarginatus** Hemsl., **FMP2** 515; herb to 30 cm tall; montane forest; Taiping Hills, Pk; endemic.
- 105.8.5 **Didymocarpus alternans** Ridl., **FMP2** 513; herb about 30 cm tall; montane forest; Pk; endemic.
- 105.8.6 **Didymocarpus antirrhinoides** A. Weber, **W06** 303; *Didymocarpus corchorifolius* auct. non DC., **FMP2** 508 in part; *Didymocarpus* sp., **W06** 305; shrub 1–1.5 m tall; hill forest; Pk, Ph, Sl, NS, Jh; endemic.
- 105.8.7 **Didymocarpus anthonyi** Kiew, **K39** 24; woody-stemmed ‘herb’ to 40 cm tall; earth banks in lowland forest; Ulu Besut, Tg; endemic.
- 105.8.8 **Didymocarpus ascendens** Ridl., **FMP2** 517; creeping herb to 25 cm tall; lowland forest; Kl, Pk.
- 105.8.9 **Didymocarpus atosanguineus** Ridl., **FMP2** 518, **K30** 49; woody-stemmed ‘herb’ to 20 cm tall; lowland forest; Kl, Tg, Ph; endemic.
- 105.8.10 **Didymocarpus bombycinus** Ridl., **FMP2** 518; shrub to 1 m tall; lowland forest; Pk; endemic.
- 105.8.11 **Didymocarpus breviflorus** (Ridl.) A. Weber & Kiew, **K48** 7; *Didissandra breviflora* Ridl., **R14** 474; woody-stemmed herb 10–25 cm tall; steep slopes and rock faces in hill forest; Sl; endemic.
- 105.8.12 **Didymocarpus caelestis** (Ridl.) Kiew, **K36** 175; *Codonoboea caelestis* Ridl., **R15** 259; woody-stemmed ‘herb’; streambanks in lowland forest; only known from Gua Musang, Kl (not on limestone); endemic.
- 105.8.13 **Didymocarpus campanulatus** (Ridl.) B.L. Burtt, **B45** 44; *Paraboea campanulata* Ridl., **FMP2** 529; herb to 30 cm tall; montane forest; Semangkok Pass, Sl; endemic.
- 105.8.14 **Didymocarpus calcareus** Ridl., **R15** 258, **C14** 153, **K44** 204; woody-stemmed ‘herb’; montane forest, not on limestone; only known from the summit of Gg Stong, Kl; endemic.

- 105.8.15 **Didymocarpus castaneifolius** Ridl., **FMP2** 514, **K44** 205; woody-stemmed 'herb' to 15 cm tall; montane forest at 1700 m; Gg Inas, Pk; endemic.
- 105.8.16 **Didymocarpus codonion** Kiew, **K30** 49; woody-stemmed 'herb' to 20 cm tall; on earth banks in lowland forest; Tg, Ph; endemic.
- 105.8.17 **Didymocarpus corchorifolius** Wall. *ex* DC., **FMP2** 508 in part, **W06** 301; shrub to 2 m tall; hill forest; Pn.
- 105.8.18 **Didymocarpus cordatus** A. DC., **B49** 427; *Paraboea cordata* (A. DC.) Ridl., **FMP2** 528 incl. vars. *debilis* Ridl. and *ophirensis* Ridl.; herb to 60 cm tall; hill and lower montane forest; widespread in the mountains.
- 105.8.19 **Didymocarpus corneri** Kiew, **K36** 172; shrub to 1.5 m tall; on banks in lowland forest; only known from Kemaman, Tg; endemic.
- 105.8.20 **Didymocarpus crapedodromus** Kiew, **K30** 213; shrub to 1 m tall; lowland and hill forest on banks and steep slopes; Ph, Jh; endemic.
- 105.8.21a **Didymocarpus crinitus** Jack var. **crinitus**, **FMP2** 519, **K30** 50; woody-stemmed 'herb' to 20 cm tall; lowland and hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh.
- 105.8.21b **Didymocarpus crinitus** Jack var. **elongatus** Ridl., **FMP2** 520 'elongata', herb; Pk.
- 105.8.22 **Didymocarpus croceus** Ridl., **FMP2** 516; succulent creeping herb; montane forest; Pk; endemic.
- 105.8.23 **Didymocarpus curtisii** (Ridl.) Ridl., **FMP2** 520; woody-stemmed 'herb' to 15 cm tall; montane forest; Semangkok Pass, Sl; endemic.
- 105.8.24 **Didymocarpus davisonii** Kiew, **K34** 242; woody-stemmed 'herb' to 20 cm tall; on shaded sandstone boulders to 500 m; Ph, Jh; endemic.
- 105.8.25 **Didymocarpus dawnii** Kiew, **K43** 201; low woody-stemmed 'herb'; hill forest at about 1000 m; known from two localities in Temengor F.R., Pk; endemic.
- 105.8.26 **Didymocarpus densifolius** Ridl., **FMP2** 521, **K29** 216; *Paraboea densifolia* (Ridl.) M.R. Hend., **H34** 79; *Paraboea caerulea* Ridl., **FMP2** 529; shrub to 1 m tall; lowland and hill forest; P. Tioman, Jh; endemic.
- 105.8.27 **Didymocarpus doryphyllus** B.L. Burt, **B42** 99; *Didymocarpus lanceolatus* (*non* C.B. Clarke) Ridl., **FMP2** 520; woody-stemmed 'herb'; montane forests; Ph; endemic.
- 105.8.28 **Didymocarpus ericiflorus** Ridl., **K30** 51, **K36** 173; *Codonoboea ericiflora* (Ridl.) Ridl., **FMP2** 533; shrublet to 30 cm tall; hill forest at about 1000 m; only known from Gg Tahan, Ph; endemic.



- 105.8.29 **Didymocarpus falcatus** Kiew, **K29** 218; woody-stemmed herb to 1 m tall; on cliffs and boulders in hill forest; Gg Janing, Jh; endemic.
- 105.8.30 **Didymocarpus fasciatus** Ridl., **FMP2** 520, **K30** 52; woody-stemmed 'herb' to 30 cm tall; rocky montane forest; Kd, Ph, NS; endemic.
- 105.8.31 **Didymocarpus flavescens** Ridl., **FMP2** 511; herb to 30 cm tall; montane forest; Sl; endemic.
- 105.8.32 **Didymocarpus flavobrunneus** Ridl., **FMP2** 515 incl. var. *montanus* Ridl., **K29** 52; woody-stemmed 'herb' to 30 cm tall; lowland and hill forest near rivers; only known from Gg Tahan, Ph; endemic.
- 105.8.33 **Didymocarpus flavus** Ridl., **FMP2** 510; *Staurogyne serrulata* C.B. Clarke, **FMP2** 563; shrub to 1 m tall; hill and montane forest; Pk, Sl.
- 105.8.34 **Didymocarpus floribundus** (M.R. Hend.) B.L. Burt, **B45** 44; *Paraboea floribunda* M.R. Hend., **H35** 117; herb to 10 cm tall; Bt Kajang, Tg; endemic.
- 105.8.35 **Didymocarpus geitleri** A. Weber, **W03** 95; woody-stemmed 'herb' to 15 cm tall; on banks in lowland forest; only known from the Kuantan district, Ph; endemic.
- 105.8.36 **Didymocarpus glabratus** Ridl., **FMP2** 513; herb to 40 cm tall; montane forest; Gg Panti, Jh; endemic.
- 105.8.37 **Didymocarpus heterophyllus** Ridl., **FMP2** 522, **K30** 53; short-stemmed herb with woody rootstock; by streams in the lowlands and hills; Ph, Jh; endemic.
- 105.8.38 **Didymocarpus hirsutus** Ridl., **FMP2** 520; woody-stemmed 'herb' to 40 cm tall; hill forest; Pk; endemic.
- 105.8.39 **Didymocarpus hirtus** Ridl., **FMP2** 512; herb to 50 cm tall; montane forest; Semangkok Pass, Sl; endemic.
- 105.8.40a **Didymocarpus hispidus** Ridl. var. **hispidus**, **FMP2** 511; *Staurogyne macrantha* C.B. Clarke, **FMP2** 563; herb to 30 cm tall; montane forest; Pk.
- 105.8.40b **Didymocarpus hispidus** Ridl. var. **selangorensis** Ridl., **FMP2** 512; herb; montane forest; Sl.
- 105.8.41 **Didymocarpus holttumii** (M.R. Hend.) B.L. Burt, **B45** 44; *Paraboea holttumii* M.R. Hend., **H31** 54; stiff erect herb to 30 cm tall; hill forest at 900 m; Gg Belumut, Jh; endemic.
- 105.8.42 **Didymocarpus inaequalis** Ridl., **FMP2** 510; woody-stemmed 'herb' to 20 cm tall; Gg Chinchang, P. Langkawi.
- 105.8.43 **Didymocarpus lancifolius** M.R. Hend., **H31** 52; creeping herb to 13 cm tall; gorge of the Sg Tras near Raub, Ph; endemic.

- 105.8.44 **Didymocarpus leiophyllus** Kiew, **K39** 28; woody-stemmed 'herb' to 20 cm tall; earthbanks in lowland forest; Ulu Sg Setai, Tg; endemic.
- 105.8.45 **Didymocarpus leucanthus** Kiew, **K39** 31; prostrate shrub to 1 m tall; lowland forest; Ulu Ampang, Sl; endemic.
- 105.8.46 **Didymocarpus leucocodon** (Ridl.) Kiew, **K30** 53, **K36** 175; *Codonoboea leucocodon* (Ridl.) Ridl., **FMP2** 533; woody-stemmed 'herb'; mossy montane ridges at 1200–1700 m; Gg Tahan, Ph; endemic.
- 105.8.47 **Didymocarpus lilacinus** Ridl., **K30** 54, **K36** 174; *Codonoboea lilacina* (Ridl.) Ridl., **FMP2** 534; clumping shrublet; on earth banks in lowland forest; only known from Gg Tahan area, Ph; endemic.
- 105.8.48 **Didymocarpus lithophilus** Kiew, **K30** 54, **K39** 37; *Didymocarpus compsoboea* auct. non C.B. Clarke, **FMP2** 518; woody-stemmed 'herb' to 20 cm tall; lower montane forest; Kd, Kl, Tg, Pk, Ph, Sl; endemic.
- 105.8.49 **Didymocarpus longipes** C.B. Clarke, **FMP2** 521; woody-stemmed 'herb' to 10 cm tall; on rocks on mountains; Gg Ledang, Ml; endemic.
- 105.8.50 **Didymocarpus malayanus** Hook.f., **FMP2** 514; short-stemmed herb; hill and montane forest; Pk, Ph, Sl, Ml; endemic.
- 105.8.51 **Didymocarpus marginatus** C.B. Clarke, **FMP2** 516; creeping herb; on rocks on mountains; lower slopes of Gg Ledang, Ml; endemic.
- 105.8.52 **Didymocarpus miniatus** Kiew, **K43** 40; woody-stemmed 'herb' to 1 m tall; lowland forest on sandstone; Bt Bauk and Bt Chabang, Tg; endemic.
- 105.8.53 **Didymocarpus modestus** Ridl., **FMP2** 513; herb about 25 cm tall; montane forest; Gg Kerbau, Pk; endemic.
- 105.8.54 **Didymocarpus nitidus** Kiew & A. Weber, **K48** 4; woody-stemmed 'herb' 40–70 cm tall; steep slopes in montane forest at 1300–1400 m; only known from Gg Bunga Buah, Sl; endemic.
- 105.8.55 **Didymocarpus niveus** (Kiew) Kiew, **K36** 174; *Codonoboea nivea* Kiew, **K29** 210; herb to 1 m tall; on banks in lowland forest; Ph, Jh; endemic.
- 105.8.56 **Didymocarpus parviflorus** Ridl., **FMP2** 510; erect herb to 30 cm tall; montane forest; Pk, NS; endemic.
- 105.8.57 **Didymocarpus pectinatus** C.B. Clarke ex Oliv., **FMP2** 521; shrubby plant to 20 cm tall; lowland forest; Pk, Sl; endemic.
- 105.8.58 **Didymocarpus platypus** C.B. Clarke, **FMP2** 517, **K29** 56; woody-stemmed 'herb'; lowland and hill forest to 1000 m; widespread.

- 105.8.59 **Didymocarpus polyanthoides** Kiew, **K30** 56; woody-stemmed ‘herb’ to 85 cm tall; steep slopes near river in lowland forest; only known from Sg Teku, Gg Tahan, Ph; endemic.
- 105.8.60 **Didymocarpus primulinus** Ridl., **FMP2** 522; herb to 10 cm tall; montane forest; Klang Gates, Sl; endemic.
- 105.8.61 **Didymocarpus pulchellus** Ridl., **FMP2** 516; herb to 20 cm tall; forest; Kuala Lipis, Ph; endemic.
- 105.8.62 **Didymocarpus pumilus** Ridl., **FMP2** 523; ‘herb’ with short woody stem; lower montane forest; Semangkok Pass, Sl; endemic.
- 105.8.63 **Didymocarpus puncticulatus** Ridl., **FMP2** 522, **K29** 220; *Didymocarpus perdita* Ridl., **FMP2** 522; nearly stemless herb; lowland forest; Tg, Ph, Jh, Sp; endemic.
- 105.8.64 **Didymocarpus purpureus** Ridl., **FMP2** 509; herb to 50 cm tall; hill forest; Gg Chinchang, P. Langkawi; endemic.
- 105.8.65 **Didymocarpus pyroliflorus** Ridl., **K29** 57; *Paraboea pyroliflora* (Ridl.) Ridl., **FMP2** 529; woody-stemmed ‘herb’ to 15 cm tall; hill forest near streams; Ph, Jh; endemic.
- 105.8.66 **Didymocarpus quinquevulnerus** Ridl., **FMP2** 518, **K30** 58; woody-stemmed ‘herb’ to 30 cm tall; lowland and hill forest to 1000 m; Kl, Ph, Sl, Ml, Jh; endemic.
- 105.8.67 **Didymocarpus ramosus** Ridl., **FMP2** 511; herb to 30 cm tall; montane forest; Gg Batu Puteh, Pk; endemic.
- 105.8.68 **Didymocarpus reptans** Jack, **FMP2** 515; creeping herb; hill forest; scattered. Ridley [**FMP2** 516] recognized three varieties of this species (*monticola* Ridl., *violascens* Ridl. and *modestus* Ridl.) in addition to the typical form.
- 105.8.69 **Didymocarpus ridleyanus** B.L. Burtt, **B42** 99, **K30** 59; *Didymocarpus grandiflorus* [non (Wall.) Dietr. ex Steud.] Ridl., **FMP2** 523; woody-stemmed ‘herb’; lower montane forest; only known from Gg Tahan, Ph; endemic.
- 105.8.70 **Didymocarpus robinsonii** Ridl., **FMP2** 513, **K30** 59; tiny shrub about 30 cm tall; upper montane forest; only known from Gg Tahan, Ph; endemic.
- 105.8.71 **Didymocarpus robustus** Ridl., **FMP2** 508, **W06** 308; shrub to 1 m tall; montane forest; only known from type Gg Kerbau, Pk; endemic.
- 105.8.72 **Didymocarpus rubiginosus** (Ridl.) B.L. Burtt, **B45** 44, **K30** 59; *Paraboea rubiginosa* Ridl., **FMP2** 530; herb with woody rootstock; cracks in dry cliffs at 1300–2000 m; only known from Gg Tahan; endemic.

- 105.8.73 **Didymocarpus rugosus** Ridl., **FMP2** 517; short woody-stemmed 'herb'; lowland forest; Kl, Pk.
- 105.8.74 **Didymocarpus salicinoides** Kiew, **K39** 35; *Paraboea salicina* (Ridl.) Ridl. var. *major* Ridl., **FMP5** 325; wiry-stemmed herb; lowland forest; Kl, Tg; endemic.
- 105.8.75 **Didymocarpus salicinus** Ridl., **K30** 60; *Paraboea filicifolia* (Ridl.) Ridl., **FMP2** 530; *Paraboea salicina* (Ridl.) Ridl., **FMP2** 530; woody-rooted herbaceous rheophyte; on rocks in streams to 1700 m; only known from Gg Tahan, Ph; endemic.
- 105.8.76 **Didymocarpus scortechinii** (Ridl.) B.L. Burtt, **B45** 44; *Paraboea scortechinii* Ridl., **FMP2** 529; herb; Pk; poorly known; endemic.
- 105.8.77 **Didymocarpus serratifolius** Ridl., **FMP2** 521; woody-stemmed 'herb' to 20 cm tall; on wet rocks in hill forest; Taiping Hills, Pk; endemic.
- 105.8.78 **Didymocarpus soldanella** Ridl., **FMP2** 523; short-stemmed herb; montane forest; Gg Kerbau, Pk; endemic.
- 105.8.79 **Didymocarpus stoloniferus** Kiew, **K39** 36; stoloniferous herb; on rocks in upper montane forest at 1800 m; Gg Ulu Kali, Ph; endemic.
- 105.8.80a **Didymocarpus sulphureus** Ridl. var. *breviflorus* Ridl., **FMP2** 509, **W06** 307; creeping and climbing shrub; montane forest; Pk, Sl; endemic.
- 105.8.80b **Didymocarpus sulphureus** Ridl. var. *grandiflorus* Ridl., **FMP2** 509, **W06** 307; creeping and climbing shrub; montane forest; variety only known from Gg Kerbau, Pk; endemic.
- 105.8.80c **Didymocarpus sulphureus** Ridl. var. *sulphureus*, **FMP2** 509, **W06** 305; creeping and climbing shrub; montane forest; Pk, Ph; endemic.
- 105.8.81 **Didymocarpus tahananicus** B.L. Burtt, **B44** 46, **K30** 61; *Paraboea grandifolia* (Ridl.) Ridl., **FMP2** 531; stemless or short-woody-stemmed plant; lower montane forest; Gg Padang, Tg; Gg Tahan, Ph; endemic.
- 105.8.82 **Didymocarpus tiumanicus** (Ridl.) B.L. Burtt, **B45** 44; *Paraboea tiumanica* Ridl., **FMP2** 530; herb to 10 cm tall; lowland forest; P. Tioman, P. Tinggi and P. Pemanggil, Jh; endemic.
- 105.8.83 **Didymocarpus urticifolius** Ridl., **FMP2** 511; herb to 15 cm tall; hill and montane forest; Pk; endemic.
- 105.8.84 **Didymocarpus venustus** Ridl., **FMP2** 514, **K44** 206; *Didymocarpus pubiflorus* (Ridl.) B.L. Burtt, **B45** 44; shrub to 100 cm tall; montane forest at 1000–2000 m; Pk, Ph, Sl; endemic.

- 105.8.85 **Didymocarpus violaceus** Ridl., **FMP2** 509; 'herb' with short woody stem; on damp rocks in the mountains; Pk; endemic.
- 105.8.86 **Didymocarpus viscidus** Ridl., **FMP2** 512; herb to 20 cm tall; Gg Keledang, Pk; endemic.
- 105.8.87 **Didymocarpus winkleri** Ridl., **FMP2** 515; herb with short stout stem; montane forest; Gg Angsi, NS; endemic.
- 105.8.88 **Didymocarpus yongii** Kiew, **K30** 62; cabbagey herb with woody rootstock; steep slopes near rivers in lowland forest; only known from the base of Gg Tahan, Ph; endemic.
- 105.8.89 **Didymocarpus sp.**, **W31** 202; *Chirita uniflora* Ridl., **FMP2** 525; herb to 35 cm tall; montane forest; Sl; endemic.
- 105.9.1 **Epithema membranaceum** (King) Kiew, **K27** 36 '*membranacea*'; *Argostemma membranaceum* King, **FMP2** 24; fleshy herb to 15 cm tall; on shaded rocks including limestone; Pn, Pk, Ph; endemic.
- 105.9.2 **Epithema saxatile** Blume, **FMP2** 539; soft succulent herb to 30 cm tall; usually on limestone; quite widespread.
- 105.10.1 **Loxocarpus angustifolius** Ridl., **FMP2** 526; small stemless herb; on wet rocks in lowland forest; only known from Ph; endemic.
- 105.10.2 **Loxocarpus caeruleus** Ridl., **FMP2** 527; stemless herb; on rocks in the mountains; Kd, Pk, Ph, Sl; endemic.
- 105.10.3 **Loxocarpus incanus** R.Br., **FMP2** 527; stemless herb; on rocks in hill and montane forest; Kl, Pn, Pk, Sl, Jh.
- 105.10.4 **Loxocarpus holttumii** M.R. Hend., **H33** 412; rosette herb to 15 cm tall; on rocks at 500 m; Gg Panti, Jh; endemic.
- 105.10.5 **Loxocarpus minimus** Ridl., **FMP2** 527; stemless herb; on rocks in hill forest; Bt Tangga, NS; endemic.
- 105.10.6 **Loxocarpus papillosus** M.R. Hend., **H31** 53; stemless rosette herb to 7 cm tall; Gg Angsi, NS; endemic.
- 105.10.7 **Loxocarpus semitortus** (C.B. Clarke) Ridl., **FMP2** 526; stemless herb on rocks in mountain streams; only known from Gg Ledang, Ml/Jh; endemic.
- 105.10.8 **Loxocarpus tunkui** Kiew, **K29** 221; rosette-forming herb; on wet rocks in lowland forests; Ph, Jh.
- 105.11.1 **Loxonia hirsuta** Jack, **B45** 49, **W01** 204; *Loxonia acuminata* R.Br., **FMP2** 541; herb to 60 cm tall; hill forest; Ph, Jh.

- 105.12.1 **Micraeschynanthus dischidioides** Ridl., **FMP5** 325; slender epiphyte; montane forest; Gg Tahan, Ph; endemic.
- 105.13.1 **Monophyllaea elongata** B.L. Burttt, **B48** 48; herb; on limestone cliffs; Pk; endemic.
- 105.13.2 **Monophyllaea glabra** Ridl., **FMP2** 540, **B48** 38; succulent herb to 30 cm tall with one big leaf; on limestone; P. Langkawi.
- 105.13.3 **Monophyllaea hirticalyx** Franch., **B48** 39; *Monophyllaea patens* Ridl., **FMP2** 540; succulent herb to 20 cm tall with one big leaf; on limestone; Kl, Pk, Ph, Sl; endemic.
- 105.13.4a **Monophyllaea horsfieldii** R.Br. var. **hendersonii** B.L. Burttt, **B48** 45; one-leaved herb to 25 cm tall; limestone cliffs; Bt Cheras, Pk; endemic variety.
- 105.13.4b **Monophyllaea horsfieldii** R.Br. var. **horsfieldii**, **FMP2** 540, **B48** 43; succulent herb to 40 cm tall with one big leaf; on limestone; Ps, Kl, Pk, Sl.
- 105.14.1 **Orchadocarpa lilacina** Ridl., **FMP2** 538; herb with woody rootstock; montane forest; Pk, Sl; endemic genus.
- 105.15.1 **Ornithoboea flexuosa** (Ridl.) B.L. Burttt, **B41** 297; *Lepadanthus flexuosus* Ridl., **FMP2** 538; herb to 45 cm tall; Kd.
- 105.16.1 **Paraboea acutifolia** (Ridl.) B.L. Burttt, **B49** 423; *Boea acutifolia* Ridl., **FMP2** 536; shrublet to 30 cm tall; on limestone; Ps, P. Langkawi.
- 105.16.2 **Paraboea bakeri** M.R. Hend., **H35** 115, **B49** 424; stemless herb; on limestone; known only from type, Bt Sagu, Ph; endemic.
- 105.16.3 **Paraboea bettiana** M.R. Hend., **H35** 116, **B49** 424; shrublet to 45 cm tall; on limestone in lowland forest; known only from Bt Cheras, Ph; endemic.
- 105.16.4 **Paraboea bintangensis** B.L. Burttt, **B49** 424; herb; on limestone rocks in forest; only known from Bt Bintang, Ps; endemic.
- 105.16.5 **Paraboea brachycarpa** (Ridl.) B.L. Burttt, **B49** 424; *Boea brachycarpa* Ridl., **R15** 259; shrublet to 20 cm tall; on limestone; Kl, Ph; endemic.
- 105.16.6 **Paraboea caerulescens** (Ridl.) B.L. Burttt, **B49** 425; *Boea caerulescens* Ridl., **FMP2** 535; shrub to 1 m tall; on limestone hills; Kl, Pk, Ph; endemic.
- 105.16.7a **Paraboea capitata** Ridl. var. **capitata**, **FMP2** 531, **B49** 426; *Paraboea curtisii* Ridl., **FMP2** 532; *Paraboea polita* Ridl., **FMP2** 532; stemless herb with stout rootstock; on limestone hills; Pk, Ph, Kl; endemic.
- 105.16.7b **Paraboea capitata** Ridl. var. **oblongifolia** Ridl., **FMP2** 531, **B49** 426; stemless herb with stout rootstock; on limestone hills; Pk; endemic.

- 105.16.8 **Paraboea divaricata** (Ridl.) B.L. Burtt, **B49** 428; *Boea divaricata* Ridl., **FMP2** 535; woody-stemmed ‘herb’; on limestone; only known from P. Langkawi; endemic.
- 105.16.9 **Paraboea elegans** (Ridl.) B.L. Burtt, **B49** 428; *Paraboea obovata* Ridl., **FMP2** 533; *Boea elegans* Ridl., **FMP2** 536; shortly woody-stemmed ‘herb’; on quartzitic rock (only Malayan calcifuge *Paraboea*); P. Langkawi, Kd, Sl; endemic.
- 105.16.10 **Paraboea ferruginea** (Ridl.) Ridl., **FMP2** 531; very short-stemmed herb; on damp limestone; only known from P. Langkawi; endemic.
- 105.16.11 **Paraboea lanata** (Ridl.) B.L. Burtt, **B49** 431; *Boea lanata* Ridl., **FMP2** 535; stout woody-stemmed ‘herb’ to 10 cm tall; on maritime limestone rocks; only known from P. Langkawi; endemic.
- 105.16.12 **Paraboea laxa** Ridl., **FMP2** 532, **B49** 431; shortly woody-stemmed ‘herb’; on limestone; only known from P. Langkawi; endemic.
- 105.16.13 **Paraboea nervosissima** Z. Xu & B.L. Burtt, **X02** 9; shrub to 1 m tall; limestone hills; Kl, Ph; endemic.
- 105.16.14 **Paraboea paniculata** (Ridl.) B.L. Burtt, **B49** 434; *Boea paniculata* Ridl., **FMP2** 534; woody-stemmed herb to 20 cm tall; on limestone; Pk, Sl.
- 105.16.15 **Paraboea parviflora** (Ridl.) B.L. Burtt, **B49** 435; *Boea parviflora* Ridl., **FMP2** 536; herb to 15 cm tall; limestone hills; Pk; endemic.
- 105.16.16 **Paraboea regularis** (Ridl.) Ridl., **FMP2** 531, **B49** 435; short woody-stemmed ‘herb’; on limestone; only known from type, P. Langkawi; endemic.
- 105.16.17 **Paraboea suffruticosa** (Ridl.) B.L. Burtt, **B49** 439; *Boea suffruticosa* Ridl., **FMP2** 536; shrublet 30–60 cm tall; on limestone; P. Langkawi (and nearby Thai islands).
- 105.16.18 **Paraboea treubii** (H.O. Forbes) B.L. Burtt, **B49** 440; *Boea treubii* H.O. Forbes, **C14** 149; sub-shrub; on limestone; Kl, Ph.
- 105.16.19 **Paraboea verticillata** (Ridl.) B.L. Burtt, **B49** 440; *Boea verticillata* Ridl., **FMP2** 535; herb with woody rootstock; on limestone; Sl; endemic.
- 105.16.20 **Paraboea vulpina** Ridl., **FMP2** 532, **B49** 441; herb with woody rootstock; on limestone; Pk; endemic.
- Paraboea lancifolia* (Ridl.) B.L. Burtt (*Boea lancifolia* Ridl., **FMP2** 536) has not been recorded from Malaya, only southern Thailand.
- 105.17.1 **Rhynchoglossum obliquum** Blume, **FMP2** 539; succulent herb to 50 cm tall; hill forests, once from limestone; Pk.

- 105.18.1 **Rhynchoetechum parviflorum** Blume, **FMP2** 542; shrub about 1 m tall; hill forest; Kl, Pn, Pk, Ph.
- 105.19.1 **Stauranthera grandiflora** Benth., **FMP2** 541, **B50** 131; succulent herb about 15 cm tall; on rocks, including limestone; Pn, Pk, Sl.
- 105.19.2 **Stauranthera umbrosa** (Griff.) C.B. Clarke, **FMP2** 541; succulent herb to 15 cm tall; on shaded rocks including limestone; Pk, Ph, Sl, Jh.
- 105.20.1 **Trisepalum speciosum** (Ridl.) B.L. Burt, **B49** 445; *Dichiloboea speciosa* (Ridl.) Stapf, **FMP2** 537; sub-shrub to 60 cm tall; on limestone; Ps, P. Langkawi.
106. GOODENIACEAE
- 106.1.1 **Scaevola taccada** (Gaertn.) Roxb., **T08** 391; *Scaevola koenigii* Vahl, **FMP2** 199; *Scaevola sericea* Vahl, **FMi5** 339, **FMi9** 566; large succulent shrub; sandy shores; all coasts.
107. GUTTIFERAE
- 107.1.1 **Calophyllum alboramulum** P.F. Stevens, **S37** 204; *Calophyllum* sp. 23, **TFM2** 195; tree to 33 m tall; lowland forest; Jh.
- 107.1.2 **Calophyllum aureobrunnescens** M.R. Hend. & Wyatt-Sm., **TFM2** 172, **S37** 636; small tree to 5 m tall; montane forest at 1500–1800 m; Ph; endemic.
- 107.1.3 **Calophyllum aureum** Symington ex M.R. Hend. & Wyatt-Sm., **TFM2** 171, **S37** 637; shrub or small tree to 15 m tall; upper montane forest at 1500–2100 m; Pk, Ph, Sl; endemic.
- 107.1.4 **Calophyllum biflorum** M.R. Hend. & Wyatt-Sm., **TFM2** 176, **S37** 472; tree to 36 m tall; lowland forest; Jh, Sp.
- 107.1.5a **Calophyllum calaba** L. var. **bracteatum** (Wight) P.F. Stevens, **S37** 261; *Calophyllum curtisii* Ridl., **FMP1** 185, **TFM2** 177; tree to 40 m tall; lowland and hill forest; throughout.
- 107.1.5b **Calophyllum calaba** L. var. **cuneatum** (Symington ex M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 267; *Calophyllum cuneatum* Symington ex M.R. Hend. & Wyatt-Sm., **TFM2** 177; tree to 30 m tall; lower montane forest at 1200–1500 m; Ph.
- 107.1.6 **Calophyllum canum** Hook.f., **FMP1** 185, **TFM2** 176, **S37** 371; tree to 36 m tall; lowland forest mostly; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh.



- 107.1.7 **Calophyllum coriaceum** Symington *ex* M.R. Hend. & Wyatt-Sm., **TFM2** 177, **S37** 362; tree to 30 m tall; lower montane forest at 1200–1500 m; Ph, Sl; endemic.
- 107.1.8 **Calophyllum costulatum** M.R. Hend. & Wyatt-Sm., **FMP2** 173, **S37** 470; tree to 30 m tall; lowland forest; Pk, Jh, Sp; endemic.
- 107.1.9 **Calophyllum depressinervosum** M.R. Hend. & Wyatt-Sm., **TFM2** 179, **S37** 389; tree to 36 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh.
- 107.1.10 **Calophyllum dioscurii** P.F. Stevens, **S37** 530; *Calophyllum sp. 45*, **TFM2** 195; tree to 33 m tall; lowland forest; Kd, Pk, Ph, NS, Ml, Jh.
- 107.1.11 **Calophyllum dispar** P.F. Stevens, **S37** 524; tree to 18 m tall; lowland swamp forest; Tg, Ph, Sp.
- 107.1.12 **Calophyllum enervosum** M.R. Hend. & Wyatt-Sm., **TFM2** 180, **S37** 423; tree to 33 m tall; lowland forest; Jh.
- 107.1.13a **Calophyllum ferrugineum** Ridl. var. **ferrugineum**, **S37** 459; *Calophyllum ferrugineum* Ridl., **FMP1** 184, **TFM2** 180; *Calophyllum retusum* Wall. *ex* Choisy, **FMP1** 184; tree to 22 m tall; lowland forest; Jh, Sp.
- 107.1.13b **Calophyllum ferrugineum** Ridl. var. **oblongifolium** (T. Anderson) P.F. Stevens, **S37** 460; *Calophyllum oblongifolium* (T. Anderson) Ridl., **FMP1** 184; *Calophyllum neriifolium* Ridl., **FMP1** 188; *Calophyllum marginatum* Wall., **FMP1** 188; *Calophyllum ferrugineum* Ridl. var. *neriifolium* (Ridl.) M.R. Hend. & Wyatt-Sm., **TFM2** 181; tree to 30 m tall; lowland and hill forest to 760 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic variety.
- 107.1.14 **Calophyllum flavoramulum** M.R. Hend. & Wyatt-Sm., **TFM2** 181, **S37** 421; tree to 38 m tall; lowland forest; Tg, Ph, Jh.
- 107.1.15 **Calophyllum fraseri** M.R. Hend. & Wyatt-Sm., **TFM2** 182 in part, **S37** 417; *Calophyllum symingtonianum* M.R. Hend. & Wyatt-Sm., **TFM2** 192 in part; tree to 36 m tall; hill and montane forest at 700–1300 m; Kd, Kl, Tg, Ph; endemic.
- 107.1.16 **Calophyllum gracillimum** M.R. Hend. & Wyatt-Sm., **TFM2** 172, **S37** 624; tree to 15 m tall; lowland and hill forest to 1000 m; Tg, Ph, Sl; endemic.
- 107.1.17 **Calophyllum inophyllum** L., **FMP1** 186, **TFM2** 186, **S37** 324; tree to 25 m tall; rocky and sandy shores; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 107.1.18 **Calophyllum lanigerum** Miq. var. **austrocoriaceum** (Whitmore) P.F. Stevens, **S37** 358; *Calophyllum austrocoriaceum* Whitmore, **TFM2** 174; tree to 21 m tall; lowland and hill forest; Jh, Sp.

- 107.1.19 **Calophyllum macrocarpum** Hook.f., **FMP1** 187, **TFM2** 187, **S37** 452; tree to 45 m tall; lowland and hill forest to 800 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 107.1.20 **Calophyllum molle** King, **FMP1** 185, **TFM2** 188, **S37** 641; tree to 30 m tall; lowland and hill forest to 700 m; Kd, Pn, Tg, Pk, Ph, Sl, Jh.
- 107.1.21 **Calophyllum nodosum** Vesque, **TFM2** 171, **S37** 385; *Calophyllum parvifolium* (non Choisy) Vesque, **FMP1** 182; shrub or tree to 25 m tall; upper montane forest; Jh.
- 107.1.22 **Calophyllum pisiferum** Planch. & Triana, **FMP1** 184, **TFM2** 172, **S37** 518; *Calophyllum rupicola* Ridl. var. *elata* Whitmore, **TFM2** 168 in part; shrub or small tree; rheophyte or sandy places; Ml, Jh.
- 107.1.23 **Calophyllum pulcherrimum** Wall. ex Choisy, **FMP1** 182 in part, **TFM2** 188, **S37** 395; tree to 23 m tall; lowland forest; Ph, NS, Ml, Jh, Sp.
- 107.1.24 **Calophyllum rigidum** Miq., **S37** 294; *Calophyllum kunstleri* King, **FMP1** 182, **TFM2** 187; tree to 25 m tall; lowland forest and swamps; Pk, Ph, NS, Ml, Jh, Sp.
- 107.1.25 **Calophyllum rotundifolium** Ridl., **FMP1** 188, **TFM2** 168, **S37** 634; tree about 9 m tall; upper montane forest at 1500–1800 m; Gg Ulu Kali, Ph; Gg Mengkuang Lebah, Sl; endemic.
- 107.1.26 **Calophyllum rubiginosum** M.R. Hend. & Wyatt-Sm., **TFM2** 189, **S37** 638; *Calophyllum wallichianum* auct. non Planch. & Triana, **FMP1** 187 in part; tree to 39 m tall; lowland forest; Sl, NS, Ml, Jh, Sp.
- 107.1.27 **Calophyllum rufigemmatum** M.R. Hend. & Wyatt-Sm. ex P.F. Stevens, **S37** 350; *Calophyllum wallichianum* auct. non Planch. & Triana, **TFM2** 193 in part; tree to 48 m tall; lowland forest; Tg, Ph, Jh, Sp.
- 107.1.28 **Calophyllum rupicola** Ridl., **FMP1** 182, **TFM2** 168 incl. most of var. *elatum* Whitmore, **S37** 515; shrub or small tree to 6 m tall; usually rheophytic; Kl, Tg, Ph, Jh.
- 107.1.29 **Calophyllum sclerophyllum** Vesque, **TFM2** 189, **S37** 447; stilt-rooted tree to 36 m tall; swamp forest; Kd, Kl, Tg, Pk, Ph, Jh.
- 107.1.30 **Calophyllum scriblitifolium** M.R. Hend. & Wyatt-Sm., **TFM2** 192, **S37** 368; tree to 44 m tall; peat swamp forest; Pk, Sl, Jh.
- 107.1.31 **Calophyllum soulattri** Burm.f., **TFM2** 192, **S37** 277; *Calophyllum spectabile* auct. non Willd., **FMP1** 185 in part; tree to 26 m tall; mostly lowland forest; Ps, Kd, Pn, Kl, Ph, NS, P. Jarak, Ml, Jh.
- 107.1.32 **Calophyllum stipitatum** P.F. Stevens, **S37** 408; tree to 18 m tall; lowland forest; Sungei Aur, Ph; ?endemic.

- 107.1.33 **Calophyllum subhorizontale** M.R. Hend. & Wyatt-Sm., **TFM2** 170, **S37** 664; tree to 8 m tall; lowland forest; Ph, Sl, NS; endemic.
- 107.1.34 **Calophyllum subsessile** King, **FMP1** 187, **S37** 489; *Calophyllum javanicum* auct. non Miq., **TFM2** 187 in part; tree to 24 m tall; swampy lowland forest; Pk; endemic.
- 107.1.35 **Calophyllum sundaicum** P.F. Stevens, **S37** 467; *Calophyllum retusum* auct. non Wall. ex Choisy, **TFM2** 188; tree to 28 m tall; lowland swamp forest; Ph, Sl, Jh, Sp.
- 107.1.36 **Calophyllum symingtonianum** M.R. Hend. & Wyatt-Sm., **TFM2** 192 in part, **S37** 229; tree to 39 m tall; lowland to lower montane forest at 1200 m; P. Langkawi, Kd, Kl, Ph.
- 107.1.37a **Calophyllum tetrapterum** Miq. var. **blumutense** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 512; *Calophyllum blumutense* M.R. Hend. & Wyatt-Sm., **TFM2** 171; shrub or small tree to 12 m tall; hill and montane forest; Gg Belumut and Gg Panti, Jh; endemic variety.
- 107.1.37b **Calophyllum tetrapterum** Miq. var. **obovale** (Miq.) P.F. Stevens, **S37** 510; *Calophyllum griffithii* T. Anderson, **FMP1** 187 in part, **TFM2** 168; tree to 20 m tall; lowland forest; Pk, Ml, ?Jh.
- 107.1.37c **Calophyllum tetrapterum** Miq. var. **tetrapterum**, **S37** 506; *Calophyllum floribundum* Hook.f., **FMP1** 184, **TFM2** 181; *Calophyllum prainianum* King, **FMP1** 183; *Calophyllum venustum* King, **FMP1** 186; *Calophyllum foetidum* Ridl., **FMP1** 186 in part; *Calophyllum lanceola* Ridl., **FMP1** 182; *Calophyllum pulcherrimum* auct. non Wall. ex Choisy, **FMP1** 182 in part; *Calophyllum rupicola* Ridl. var. *elatum* Whitmore, **TFM2** 169 in part; tree to 30 m tall; P. Langkawi, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 107.1.38a **Calophyllum teysmannii** Miq. var. **inophylloide** (King) P.F. Stevens, **S37** 436; *Calophyllum inophylloide* King, **FMP1** in part, **TFM2** 183; *Calophyllum fraseri* auct. non M.R. Hend. & Wyatt-Sm., **TFM2** 182 in part; tree to 40 m tall; lowland to lower montane forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Jh.
- 107.1.38b **Calophyllum teysmannii** Miq. var. **teysmannii**, **S37** 432; *Calophyllum inophylloide* auct. non King, **FMP1** 186 in part; *Calophyllum inophylloide* King var. *singaporensis* M.R. Hend. & Wyatt-Sm., **TFM2** 186; *Calophyllum* sp. 44, **TFM2** 173; tree to 36 m tall; lowland to lower montane forest at 1200 m; Kl, Tg, Ph, Jh, Sp.
- 107.1.39a **Calophyllum venulosum** Miq. var. **tenuivenium** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 481; *Calophyllum tenuivenium* M.R. Hend. & Wyatt-Sm., **TFM2** 193; tree to 20 m tall; lowland forest; Jh; endemic variety.

- 107.1.39b **Calophyllum venulosum** Miq. var. **venulosum**, **S37** 481; *Calophyllum javanicum* Miq., **TFM2** 187 in part; tree to 45 m tall; lowland forest; Pk, Ph, Jh.
- 107.1.40a **Calophyllum wallichianum** Planch. & Triana var. **incrassatum** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 345; *Calophyllum incrassatum* M.R. Hend. & Wyatt-Sm., **TFM2** 183; tree to 36 m tall; lowland forest; Kl, Tg, Ph, Sl, Ml, Jh, Sp.
- 107.1.40b **Calophyllum wallichianum** Planch. & Triana var. **tahanense** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 346; *Calophyllum tahanense* M.R. Hend. & Wyatt-Sm., **TFM2** 168; tree to 20 m tall; hill and lower montane forest; Kl, Ph, NS; endemic variety.
- 107.1.40c **Calophyllum wallichianum** Planch. & Triana var. **wallichianum**, **S37** 343; *Calophyllum spectabile* auct. non Willd., **FMP1** 185 in part; *Calophyllum wallichianum* Planch. & Triana, **TFM2** 193 in part; tree to 30 m tall; lowland and hill forest; Kd, Pn, Kl, Pk, NS; endemic variety.
- 107.1.41 **Calophyllum** sp. **73**, **S37** 422; tree about 20 m tall; lowland forest; once from Bt Bauk Forest Reserve, Tg; ?endemic.
- 107.1.42 **Calophyllum** sp. **151**, **S37** 627; tree to 21 m tall; lowland forest; Jh, Sp; endemic.
- 107.2.1 **Cratoxylum arborescens** (Vahl) Blume, **FMP1** 153 incl. var. *miquelii* King, **TFM2** 249; tree to 42 m tall; common in lowland swamp forest, also in the hills; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 107.2.2 **Cratoxylum cochinchinense** (Lour.) Blume, **TFM2** 251; *Cratoxylum polyanthum* Korth., **FMP1** 152; tree to 33 m tall; lowland forest to 500 m; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Sp.
- 107.2.3 **Cratoxylum formosum** (Jack) Dyer, **FMP1** 153, **TFM2** 251; tree to 45 m tall; lowland forest to 600 m; throughout.
- 107.2.4 **Cratoxylum glaucum** Korth., **TFM2** 249; *Cratoxylum microphyllum* Miq., **FMP1** 153; montane and lowland heath forest; Jh; endemic.
- 107.2.5 **Cratoxylum maingayi** Dyer, **FMP1** 154, **TFM2** 251; tree to 31 m tall; lowland forest, also on limestone; Kd, Pn, Kl, Pk, Ph, Jh.
- 107.2.6 **Cratoxylum sumatranum** (Jack) Blume, **TFM2** 251; tree to 12 m tall; lowland forest; once each from Tg and Sl.
- 107.3.1 **Garcinia atroviridis** Griff. ex T. Anderson, **FMP1** 173, **TFM2** 206; tree to 27 m tall; lowland and hill forest to 600 m, sometimes cultivated; throughout.
- 107.3.2a **Garcinia bancana** (Miq.) Miq. var. **bancana**, **FMP1** 174, **TFM2** 206; tree to 33 m tall; lowland forest; throughout.

- 107.3.2b ***Garcinia bancana*** (Miq.) Miq. var. ***curtisii*** (Ridl.) Whitmore, **TFM2** 206; *Garcinia curtisii* Ridl., **FMP1** 175; tree; lowland forest; Pn, Jh, Sp; endemic variety.
- 107.3.3 ***Garcinia burkillii*** Whitmore, **TFM2** 207; *Garcinia uniflora auct. non* King, **FMP1** 177 in part; tree to 15 m tall; lowland to lower montane forest, 420–600 m; Tg, Ph; endemic.
- 107.3.4a ***Garcinia cantleyana*** Whitmore var. ***cantleyana***, **TFM2** 207; tree to 15 m tall; montane forest; Pk, Ph; endemic.
- 107.3.4b ***Garcinia cantleyana*** Whitmore var. ***grandifolia*** Whitmore, **TFM2** 207; small tree; montane forest; twice from Gg Ulu Kali, Ph; endemic.
- 107.3.5 ***Garcinia cataractalis*** Whitmore, **TFM2** 207; low wiry bush; rheophyte; Tg; endemic.
- 107.3.6 ***Garcinia clusiifolia*** Ridl., **FMP1** 174, **TFM2** 208; tree to 6 m tall; lower montane forest at 900 m; known only from Wray's Camp, Gg Tahan, Ph; endemic.
- 107.3.7 ***Garcinia costata*** Hemsl. *ex* King, **FMP1** 173, **TFM2** 208; small tree; lowland to lower montane forest; Kd, Pk; endemic.
- 107.3.8 ***Garcinia cowa*** Roxb., **TFM2** 208; tree occasionally to 30 m tall; lowland forest mostly; widespread.
- 107.3.9 ***Garcinia cuspidata*** King, **FMP1** 171, **TFM2** 209; tree to 27 m tall; lowland forest; Kl, Pk, Sl.
- 107.3.10 ***Garcinia diversifolia*** King, **FMP1** 171, **TFM2** 209; tree to 24 m tall; mainly lower montane forest, 300–900 m; Kl, Pk, Ph, Jh; endemic.
- 107.3.11 ***Garcinia dumosa*** King, **FMP1** 178, **TFM2** 210; shrub; lowland forest; Kl, Pk, Ph, Sl; endemic.
- 107.3.12 ***Garcinia eugeniifolia*** Wall. *ex* T. Anderson, **FMP1** 169, **TFM2** 210; tree to 15 m tall; lowland to lower montane forest; P. Langkawi, Kd, Pn, Tg, Pk, Ph, Jh, Sp.
- 107.3.13 ***Garcinia forbesii*** King, **FMP1** 175, **TFM2** 211; tree to 18 m tall; lowland to lower montane forest at 1700 m; throughout.
- 107.3.14 ***Garcinia griffithii*** T. Anderson, **FMP1** 174, **TFM2** 211; tree to 23 m tall; lowland and hill forest to 900 m; scattered throughout.
- 107.3.15 ***Garcinia hendersoniana*** Whitmore, **TFM2** 211; tree to 8 m tall; lower montane forest above 1050 m; Tg, Ph; endemic.

- 107.3.16 **Garcinia holttumii** Ridl., **FMP5** 290, **TFM2** 212; shrub or tree to 6 m tall; montane forest above 900 m; thrice from Gg Belumut, Jh; endemic.
- 107.3.17 **Garcinia hombroniana** Pierre, **FMP1** 171, **TFM2** 212; tree to 30 m tall; most frequently near the sea; all coasts.
- 107.3.18 **Garcinia maingayi** Hook.f., **FMP1** 173, **TFM2** 214; tree to 21 m tall; lowland to lower montane forest; Kd, Tg, Pk, Ph, Jh; endemic.
- 107.3.19 **Garcinia malaccensis** Hook.f., **FMP1** 172, **TFM2** 214; tree to 24 m tall; lowland forest to 540 m; Kl, Tg, Ph, Sl, NS, Jh.
- 107.3.20 **Garcinia merguensis** Wight, **FMP1** 169, **TFM2** 215; *Garcinia lanceolata* Ridl., **FMP1** 170; tree; lowland forest; P. Langkawi, Kd, Pk, Ph.
- 107.3.21 **Garcinia minutiflora** Ridl., **FMP1** 176, **TFM2** 216; tree to 8 m tall; mostly on limestone; Ps, P. Langkawi, Pn, Kl.
- 107.3.22 **Garcinia monantha** Ridl., **FMP1** 176, **TFM2** 216; small tree; montane forest; Tg, Ph; endemic.
- 107.3.23 **Garcinia montana** Ridl., **FMP1** 175, **TFM2** 216; tree to 5 m tall; montane forest; only known with certainty from Gg Ledang, Jh; endemic.
- 107.3.24 **Garcinia murdochii** Ridl., **FMP1** 175, **TFM2** 217; tree to 23 m tall; lowland forest, also on limestone; Kd, Tg, Pk, Jh.
- 107.3.25 **Garcinia murtonii** Whitmore, **TFM2** 217; shrub or small tree to 8 m tall; montane forest; Gg Korbu, Pk, Gg Tahan, Ph, Gg Belumut, Jh; endemic.
- 107.3.26a **Garcinia nervosa** Miq. var. *nervosa*, **FMP1** 179, **TFM2** 217; tree to 21 m tall; lowland forest; scattered widely.
- 107.3.26b **Garcinia nervosa** Miq. var. *pubescens* King, **TFM2** 218; tree; lowland forest; once from Pk; endemic variety.
- 107.3.27 **Garcinia nigrolineata** Planch. ex T. Anderson, **FMP1** 176, **TFM2** 218; *Garcinia kunstleri* King, **FMP1** 177; tree; lowland forest to 600 m; throughout.
- 107.3.28a **Garcinia opaca** King var. *dumosa* Whitmore, **TFM2** 219; shrub; lowland forest to 600 m; Pk, Ph, Sl, Jh; endemic.
- 107.3.28b **Garcinia opaca** King var. *opaca*, **FMP1** 178, **TFM2** 218; tree to 12 m tall; lowland forest, swamp and limestone; Kl, Tg, Pk, Sl, Jh (once each); endemic.
- 107.3.29 **Garcinia parvifolia** (Miq.) Miq., **FMP1** 177, **TFM2** 219; *Garcinia globulosa* Ridl., **FMP1** 176; tree to 33 m tall; lowland forest to 600 m; throughout.

- 107.3.30 **Garcinia penangiana** Pierre, **FMP1** 172, **TFM2** 218; tree to 15 m tall; lowland forest to 300 m; Pn, Tg, Pk, Ph.
- 107.3.31 **Garcinia prainiana** King, **FMP1** 180, **TFM2** 220; tree to 10 m tall; lowland forest, also cultivated; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS.
- 107.3.32 **Garcinia pyrifera** Ridl., **FMP1** 180, **TFM2** 220; tree to 15 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Sl, Jh, Sp; endemic.
- 107.3.33 **Garcinia rostrata** (Hassk.) Miq., **FMP1** 169, **TFM2** 220; tree to 15 m tall; lowland and hill forest; scattered throughout.
- 107.3.34 **Garcinia scortechinii** King, **TFM2** 221; *Garcinia gaudichaudii* auct. non Planch. & Triana, **FMP1** 177; tree to 15 m tall; lowland and hill forest to 700 m; common throughout.
- 107.3.35 **Garcinia uniflora** King, **FMP1** 177 in part, **TFM2** 221; tree to 15 m tall; lower montane forest at 900–1500 m; Pk, Ph; endemic.
- 107.3.36 **Garcinia urophylla** Scort. ex King, **FMP1** 178, **TFM2** 221; shrub or small tree to 12 m tall; hill forest to 1150 m; widely scattered.
- 107.3.37 **Garcinia A1**, **TFM2** 222; small tree; lowland to lower montane forest; Sg Buloh FR, Sl; Raub, Ph; ?endemic.
- 107.3.38 **Garcinia A2**, **TFM2** 222; shrub to 4.5 m tall; lowland forest; Jh (3 or 4 collections); ?endemic.
- 107.3.39 **Garcinia A3**, **TFM2** 222; tree to 24 m tall; lowland forest; Kd, Pk, Ph, Sl, Jh; ?endemic.
- 107.3.40 **Garcinia C1**, **TFM2** 223; tree to 27 m tall; lowland and hills to 600 m; Ph, Sl; ?endemic.
- 107.3.41 **Garcinia C2**, **TFM2** 223; tree; lower montane forest at 700–900 m; Pn, Tg, Pk, Ph, Sl, Jh; ?endemic.
- 107.3.42 **Garcinia E1**, **TFM2** 223; tree to 18 m tall; lowland forest; Gg Bubu, Pk; Lepar FR, Ph; ?endemic.
- 107.3.43 **Garcinia E2**, **TFM2** 224; *Garcinia uniflora* auct. non King, **FMP1** 177 in part; small shrub; lowland forest; once from Gg Panti, Jh; ?endemic.
- 107.3.44 **Garcinia E3**, **TFM2** 224; tree to 15 m tall; lowland forest; Tg, Pk, Jh; ?endemic.
- 107.3.45 **Garcinia G1**, **TFM2** 224; tree to 21 m tall; lower montane forest; Tg, Ph; ?endemic.
- 107.3.46 **Garcinia G2**, **TFM2** 225; tree to 33 m tall; lowland forest; only known from Ulu Brang, Tg; ?endemic.

- 107.4.1 **Hypericum japonicum** Thunb., **FMP1** 152, **TFM2** 248, **M47** 312; herb to 25 cm tall; weed of open places; scattered.
- 107.5.1 **Mammea brevipes** (Craib) Kosterm., **TFM2** 226; *Ochrocarpos siamensis auct. non* (Miq.) T. Anderson, **FMP1** 180; small tree; sometimes on limestone; P. Langkawi.
- 107.5.2 **Mammea malayana** Kosterm., **TFM2** 226; tree to 15 m tall; lowland forest; Tg, Pk, Ph; endemic.
- 107.5.3 **Mammea odorata** (Rafin.) Kosterm., **TFM2** 226; small tree; sandy seashores; once from Mersing, Jh.
- 107.5.4 **Mammea siamensis** (Miq.) T. Anderson, **TFM2** 226; small tree; lowland forest; once from Kd.
- 107.6.1 **Mesua aff. assamica** (King & Prain) Kosterm., **TFM2** 232; tree to 23 m tall; lowland forest; Kd, Kl, Tg, Ph, NS, Jh.
- 107.6.2 **Mesua daphnifolia** (Ridl.) Kosterm., **TFM2** 228; *Kayea daphnifolia* Ridl., **FMP5** 290; small tree to 12 m tall; lowland and hill forest; Pk; endemic.
- 107.6.3 **Mesua elegans** (King) Kosterm., **TFM2** 229; *Kayea elegans* King, **FMP1** 191; *Kayea caudata* King, **FMP1** 191; small tree; lowland and hill forest; Pk, Ph, Sl, NS, Jh, Sp; endemic.
- 107.6.4 **Mesua ferrea** L., **FMP1** 192, **TFM2** 232; tree to 24 m tall; lowland forest to 480 m; throughout but commoner in the north.
- 107.6.5 **Mesua ferruginea** (Pierre) Kosterm., **TFM2** 230; *Kayea ferruginea* Pierre, **FMP1** 189; small tree; by lowland rivers; Kl, Ph, Jh.
- 107.6.6 **Mesua grandis** (King) Kosterm., **TFM2** 234; *Kayea grandis* King, **FMP1** 190; tree to 33 m tall; lowland and hill forest to 1200 m; Tg and Pk southward.
- 107.6.7 **Mesua kochummeniana** Whitmore, **TFM2** 234; tree to 36 m tall; lowland forest; Ph, Jh; endemic.
- 107.6.8a **Mesua kunstleri** (King) Kosterm. var. **curtisii** (King) Whitmore, **TFM2** 232; *Kayea kunstleri* King, **FMP1** 190 in part; shrub or tree to 18 m tall; lowland and hill forest; Kd, Pn; endemic.
- 107.6.8b **Mesua kunstleri** (King) Kosterm. var. **kunstleri**, **TFM2** 228; *Kayea kunstleri* King, **FMP1** 190 in part; *Kayea rivulorum* Ridl., **FMP1** 191; *Kayea kunstleri* King var. *rosea* Ridl., **FMP5** 291; shrub or small tree to 12 m tall; lowland forest; Ml and Ph northward; endemic.
- 107.6.9a **Mesua lepidota** T. Anderson var. **lepidota**, **FMP1** 192, **TFM2** 235; tree to 21 m tall; lowland forest; Tg, Pk, Ph, Sl, NS, Ml, Jh.



- 107.6.9b **Mesua lepidota** T. Anderson var. **parviflora** (Ridl.) Whitmore, **TFM2** 235; *Kayea parviflora* Ridl., **FMP1** 191; tree; hill forest to 800 m; Tg, Pk, Sl, Ml, Jh; endemic variety.
- 107.6.10 **Mesua nervosa** Planch. & Triana, **TFM2** 230; *Kayea nervosa* (Planch. & Triana) T. Anderson, **FMP1** 190; shrub or tree to 12 m tall; lowland forest; once from Pk.
- 107.6.11 **Mesua nivenii** Whitmore, **TFM2** 230; small tree to 15 m tall; lower montane forest above 1200 m; Gg Padang and Gg Mandi Angin, Tg; endemic.
- 107.6.12 **Mesua nuda** Kosterm. ex Whitmore, **TFM2** 235; tree to 29 m tall; lowland forest to 500 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.
- 107.6.13 **Mesua purseglovei** Whitmore, **TFM2** 229; tall tree; montane forest; known only from type, Cameron Highlands, Ph; endemic.
- 107.6.14 **Mesua racemosa** (Planch. & Triana) Kosterm., **TFM2** 236; *Kayea racemosa* Planch. & Triana, **FMP1** 189; tree to 24 m tall; lowland forest mostly; Kd, Kl, Tg, Pk, Ph, Sl, Ml.
- 107.6.15 **Mesua rosea** (Ridl.) Kosterm., **TFM2** 229; *Kayea rosea* Ridl., **FMP1** 189; lowland forest including swamps; Jh; endemic.
- 107.6.16 **Mesua wrayi** (King) Kosterm., **TFM2** 229; *Kayea wrayi* King, **FMP1** 189; shrub or tree to 8 m tall; upper montane forest at 1500–2100 m; Pk, Ph; endemic.
- 107.6.17 **Mesua sp. B**, **TFM2** 229; treelet 3 m tall; lowland forest; once from Kemahang FR, Kl; ?endemic.
- 107.6.18 **Mesua sp. C**, **TFM2** 230; tree; lowland forest; Bt Bauk, Tg; Gg Tapis, Ph; ?endemic.
- 107.6.19 **Mesua sp. D**, **TFM2** 236; tree; lowland forest; Ph, Sl, Jh; ?endemic.
- 107.6.20 **Mesua sp. E**, **TFM2** 232; tree to 23 m tall; lowland forest; Tg, Ph; ?endemic.
- 107.7.1 **Ploiarium alternifolium** (Vahl) Melchior, **TFM3** 288; *Archytaea vahlii* Choisy, **FMP1** 208; shrub or small tree to 10 m tall; swampy lowland forest, mountain tops; widespread.

## 108. HALORAGACEAE

- 108.1.1 **Gonocarpus chinensis** (Lour.) Orchard, **O03** 207; *Haloragis chinensis* (Lour.) Merr., **K07** 123, **FM17** 243; herb to 60 cm tall; open grassy places; Sp.

108.2.1 **Myriophyllum tetrandum** Roxb., **FM17** 255; aquatic or semi-aquatic herb; shallow open water; once from Kangar, Ps.

108.2.2 **Myriophyllum tuberculatum** Roxb., **FM17** 256; aquatic or semi-aquatic herb; shallow stagnant water in the lowlands; Ps, Kd.

## 109. HAMAMELIDACEAE

109.1.1 **Altingia excelsa** Noronha, **FMP1** 692, **FM15** 376, **TFM2** 238; tree to 45 m tall; hill and montane forest; Ph.

109.2.1 **Distyliopsis dunnii** (Hemsl.) P.K. Endress, **TFM2** 242; *Sycopsis dunnii* Hemsl., **FM15** 371, **TFM2** 242; tree to 12 m tall; lower montane forest (1200–1500 m) or on limestone; K1, Tg, Ph.

109.3.1 **Distylium stellare** Kuntze, **FM15** 369, **TFM2** 239; tree to 15 m tall; lower montane forest and limestone hills; Pk, Ph.

109.4.1 **Exbucklandia populnea** (R. Br. ex Griff.) R.W. Br., **V15** 595; *Bucklandia populnea* R.Br. ex Griff., *nom. inval.*, **FMP1** 691; *Symingtonia populnea* (R.Br. ex Griff.) Steenis, **V13** 444, **FM15** 375, **TFM2** 242; tree to 33 m tall; lower montane forest; widespread.

109.5.1 **Maingaya malayana** Oliv., **FMP1** 691, **FM15** 366, **TFM2** 240; tree to 27 m tall; lowland and hill forest at 300–1000 m; Pn, Pk; endemic.

109.6.1 **Rhodoleia championii** Hook.f., **FM15** 372, **TFM2** 240; *Rhodoleia ovalifolia* Ridl., **FMP1** 690; *Rhodoleia teysmannii* Miq., **FMP1** 690; shrub or tree to 30 m tall; montane forest above 1450 m, lower on quartzite; Kd, Pk, Ph, Sl, NS, Ml.

## 110. HERNANDIACEAE

110.1.1 **Gyrocarpus americanus** Jacq., **TFM2** 244, **FM112** 743; *Gyrocarpus jacquinii* Gaertn., **FMP3** 139; small tree; coastal; Kd, Pn (very rare).

110.2.1 **Hernandia nymphaeifolia** (Presl) Kubitzki, **TFM2** 245, **FM112** 747; *Hernandia peltata* Meisn., **FMP3** 138; tree to 18 m tall; coastal and offshore islands; P. Langkawi, Kd, Tg, Pk, Jh.

110.3.1 **Illigera parviflora** Dunn, **K73** 177, **TFM2** 247, **FM112** 759; *Illigera appendiculata* auct. non Blume, **FMP3** 139 in part; liana; hill forest; Pk, Ph.

110.3.2 **Illigera pulchra** Blume, **K73** 174, **TFM2** 247, **FM112** 759; *Illigera lucida* Teijsm. & Binn., **FMP3** 140; liana; on limestone; Ps, P. Langkawi, Pk.

110.3.3 **Illigera trifoliata** (Griff.) Dunn, **K73** 169, **TFM2** 247, **FMI12** 760; *Illigera appendiculata* auct. non Blume, **FMP3** 139 in part; liana; Kd, Kl, Pk, Ph, Sl.

## 111. HYDRANGEACEAE

111.1.1 **Dichroa febrifuga** Lour., **FMP1** 681, **TFM4** 462; shrub to 2 m tall; montane forest above 1000 m; Pk, Ph, Sl.

## 112. HYDROPHYLLACEAE

112.1.1 **Hydrolea zeylanica** (L.) Vahl, **FMP2** 438, **FMI4** 207, **M47** 310; creeping herb ascending to 30 cm; ditches, paddyfields; widespread.

## 113. ICACINACEAE

113.1.1 **Apodytes dimidiata** E. Mey. ex Arn., **FMI7** 48, **TFM3** 109; small tree to 9 m tall; montane forest; Kl, Ph.

113.2.1 **Cantleya corniculata** (Becc.) Howard, **FMI7** 51, **TFM3** 110; *Cantleya johorica* Ridl., **FMP1** 436; *Stemonurus corniculatus* (Becc.) Ridl., **FMP5** 297; tree to 40 m tall; lowland forest, often under swampy conditions; Jh, Sp.

113.3.1 **Gomphandra capitulata** (Jungh. & de Vriese) Becc., **FMI7** 24, **TFM3** 110; *Gomphandra nyssifolia* King, **FMP1** 427; tree to 20 m tall; montane forest above 1000 m; Pk, Ph.

113.3.2a **Gomphandra quadrifida** (Blume) Sleumer var. **angustifolia** (King) Sleumer, **FMI7** 34, **TFM3** 111; *Gomphandra lanceolata* (Mast.) King var. *angustifolia* King, **FMP1** 428 in part; *Gomphandra salicifolia* Ridl., **FMP1** 429; wiry rheophytic shrub; lowland to montane forest near streams; Kd, Pn, Kl, Pk, Ph, Sp.

113.3.2b **Gomphandra quadrifida** (Blume) Sleumer var. **maingayi** (Mast.) Sleumer, **FMI7** 34, **TFM3** 111; *Gomphandra maingayi* (Mast.) King, **FMP1** 429; shrub; hill forest at 900–1500 m; Pn; endemic variety.

113.3.2c **Gomphandra quadrifida** (Blume) Sleumer var. **ovalifolia** (Ridl.) Sleumer, **FMI7** 34, **TFM3** 111; *Gomphandra ophirensis* Ridl., *nom. illeg.*, **FMP1** 427; *Gomphandra lanceolata* (Mast.) King, **FMP1** 428 incl. var. *ovalifolia* Ridl.; *Gomphandra pubescens* Ridl., **FMP1** 429; shrub; lowland to lower montane forest at 1200 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

- 113.3.2d **Gomphandra quadrifida** (Blume) Sleumer var. **quadrifida**, **FMi7** 33, **TFM3** 111; *Gomphandra affinis sensu* Ridl., **FMP1** 427 incl. var. *floribunda* Ridl.; *Gomphandra penangiana* Wall. ex Mast., **FMP1** 427; shrub to 5 m tall; lowland and hill forest; widespread.
- 113.3.2e **Gomphandra quadrifida** (Blume) Sleumer var. **triplinervis** (King) Sleumer, **FMi7** 33, **TFM3** 112; *Gomphandra lanceolata* (Mast.) King var. *triplinervis* King, **FMP1** 428; shrub to 5 m tall; lowland forest; P. Langkawi, Kd, Pn, Tg, Pk.
- 113.4.1 **Gonocaryum crassifolium** Ridl., **FMP1** 432, **FMi7** 16, **TFM3** 112; shrub; montane forest; once from Sempang Mines, Sl; endemic.
- 113.4.2 **Gonocaryum gracile** Miq., **FMi7** 17, **TFM3** 113; *Gonocaryum longeracemosum* King, **FMP1** 431; shrub or small tree to 12 m tall; lowland and hill forest; Kl, Tg, Ph, Sl, Ml, Jh.
- 113.4.3 **Gonocaryum lobbianum** (Miers) Kurz, **FMi7** 20, **TFM3** 113; shrub to 6 m tall; lowland forest; Ps, Pk.
- 113.4.4 **Gonocaryum macrophyllum** (Blume) Sleumer, **FMi7** 19, **TFM3** 113; shrub or small tree to 6 m tall; coastal forest; P. Berhala and P. Jarak.
- 113.4.5 **Gonocaryum sp. A**, **TFM3** 113; tree to 6 m tall; once from Bt Bauk F.R., Tg; ?endemic.
- 113.5.1 **Iodes cirrhosa** Turcz., **FMi7** 70, **TFM3** 109; *Iodes ovalis auct. non* Blume, **FMP1** 435; liana to 10 m or more long; Pk, Sl, Ml, Jh, Sp.
- 113.5.2 **Iodes ovalis** Blume, **FMi7** 68, **TFM3** 109; *Iodes oblonga* Planch., **FMP1** 435; slender scandent shrub; lowland forest margins; Pn to Sp.
- 113.5.3 **Iodes reticulata** King, **FMP1** 434, **FMi7** 69, **TFM3** 109; liana to 9 m long; lowland forest; Pk, Ph, NS; endemic.
- 113.5.4 **Iodes velutina** King, **FMP1** 434, **FMi7** 72, **TFM3** 109; liana; lowland forest margins; Pk, NS, Ml, Sp; endemic type variety.
- 113.6.1 **Medusanthera gracilis** (King) Sleumer, **FMi7** 46, **TFM3** 114; *Gomphandra lanceolata* King var. *angustifolia auct. non* King, **FMP1** 428 in part; *Gomphandra gracilis* King, **FMP1** 429 incl. var. *gracillima* Ridl.; shrub or small tree to 9 m tall; lowland and hill forest; Tg, Pk, Ph, Sl, Jh.
- 113.6.2 **Medusanthera laxiflora** (Miers) Howard, **FMi7** 46, **TFM3** 114; small tree; lowland forest; twice from Kl.
- 113.7.1 **Miquelia caudata** King, **FMP1** 433, **FMi7** 78, **TFM3** 109; slender climber to 6 m long; hill forest; Tg, Pk, Sl.

- 113.8.1 **Phytocrene bracteata** Wall., **FMP1** 432, **FMi7** 85, **TFM3** 109; high-climbing minutely-prickly liana; lowland forest; widespread.
- 113.8.2 **Phytocrene oblonga** Wall., **FMP1** 432, **FMi7** 84, **TFM3** 109; high-climbing liana; lowland forest; widespread.
- 113.8.3 **Phytocrene palmata** Wall., **FMP1** 433, **FMi7** 84, **TFM3** 109; minutely prickly liana; lowland forest to 500 m; Pn, Pk, Sl.
- 113.8.4 **Phytocrene trichura** Ridl., **FMP1** 433, **FMi7** 83, **TFM3** 109; large woody climber; lowland forest; Pk, Ph, Sl; endemic.
- 113.9.1 **Platea excelsa** Blume var. **riedeliana** (Becc.) Sleumer, **FMi7** 13, **TFM3** 115; tree to 24 m tall; peat swamp forest; once from near Pontian, Jh.
- 113.9.2 **Platea latifolia** Blume, **FMP1** 426, **FMi7** 11, **TFM3** 115; tree to 27 m tall; lowland to montane forest at 1500 m; Kd, Pn, Pk, Ph, Jh.
- 113.10.1 **Sarcostigma kleinii** Wight & Arn., **FMP5** 297, **FMi7** 74, **TFM3** 109; much-branched stout liana; lowland forest; once each from Kl and Ml.
- 113.10.2 **Sarcostigma paniculata** Pierre, **FMP5** 298, **FMi7** 75, **TFM3** 109; stout liana to 30 m long; lowland forest; once from Larut, Pk.
- 113.11.1 **Stemonurus malaccensis** (Mast.) Sleumer, **FMi7** 60, **TFM3** 117; *Stemonurus capitatus* Becc., **FMP1** 431; tree to 21 m tall; lowland and hill forest to 1300 m; throughout.
- 113.11.2 **Stemonurus scorpioides** Becc., **FMP5** 296, **FMi7** 58, **TFM3** 117; *Stemonurus secundiflorus* auct. non Blume, **FMP1** 430 in part; tree to 33 m tall; lowland forest; Tg, Pk, Ph, Sl, Jh, Sp.
- 113.11.3 **Stemonurus secundiflorus** Blume, **FMP2** 430 in part, **FMP5** 296, **FMi7** 59, **TFM3** 117; tree to 12 m tall; forests to 1500 m, mostly in lowland swamps; Pk, Ph, Sl, Jh.
- 113.11.4 **Stemonurus umbellatus** Becc., **FMP1** 431, **FMi7** 62, **TFM3** 118; tree to 30 m tall; lowland to montane forest at 1400 m; Pk, Ph, Sl, NS, Ml, Jh.
114. ILLICIACEAE
- 114.1.1 **Illicium peninsulare** A.C. Sm., **S28** 56, **TFM2** 254, **S05** 343; *Illicium cambodianum* auct. non Hance, **FMP1** 18 in part incl. var. *crassifolia* Ridl. in part; tree to 7.5 m; montane forest at 450–1500 m; Ph, Sl, Ml, Jh.
- 114.1.2 **Illicium ridleyanum** A.C. Sm., **S28** 66, **TFM2** 254, **S05** 344; *Illicium cambodianum* auct. non Hance, **FMP1** 18 in part incl. var. *crassifolia* Ridl. in part; tree to 15 m tall; montane forest at 600–2010 m; Kl, Tg, Pk, Ph, Sl, Jh; endemic.

- 114.1.3 **Illicium tenuifolium** (Ridl.) A.C. Sm., **S28** 68 incl. vars. *angustifolium* A.C. Sm. and *obovatum* A.C. Sm., **TFM2** 254, **S05** 349; *Illicium cambodianum* auct. non Hance, **FMP1** 18 in part; *Illicium cambodianum* var. *tenuifolia* Ridl., **FMP1** 18; tree to 7.5 m; lowland to montane forest at 1500 m; P. Langkawi, Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.

115. IRVINGIACEAE

- 115.1.1 **Irvingia malayana** Oliv. ex Benn., **FMP1** 364, **FMi6** 225, **TFM2** 350; tree to 40 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.

116. IXONANTHACEAE

- 116.1.1 **Allantospermum borneense** Forman, **TFM2** 347; tree to 40 m tall; hill and lower montane forest; Kd, Tg, Pk.
- 116.2.1 **Ixonanthes icosandra** Jack, **FMP1** 325, **TFM1** 307, **FMi10** 625; tree to 30 m tall; primary and secondary forest, mostly lowlands; throughout.
- 116.2.2 **Ixonanthes reticulata** Jack, **FMP1** 326, **TFM1** 307, **FMi10** 626; tree to 40 m tall; lowland and hill forest; throughout.

117. JUGLANDACEAE

- 117.1.1 **Engelhardtia apoensis** Elmer ex Nagel, **FMi6** 151, **TFM1** 234; tree to 30 m tall; lower montane forest; Main Range (Kl to Sl).
- 117.1.2 **Engelhardtia roxburghiana** Wall., **FMi6** 154, **TFM1** 235; *Engelhardtia wallichiana* Lindl., **FMP3** 370; tree to 20 m tall; hill and montane forest at 700–1500 m; Kd, Pn, Pk, Ph,.
- 117.1.3 **Engelhardtia serrata** Blume, **FMi6** 150, **TFM1** 236; *Engelhardtia nudiflora* Hook.f., **FMP3** 369; tree 20–25 m tall; lowland to montane forest at 2000 m; Kd, Pn, Pk, Ph, MI, Jh, Sp.
- 117.1.4 **Engelhardtia spicata** Lesch. ex Blume, **FMP3** 368, **FMi6** 151, **TFM1** 236; tree to 30 m tall; lowland and hill forest; Pk.

118. LABIATAE

- 118.1.1 **Acrocephalus hispidus** (L.) Nicolson & Sivad., **N11** 151; *Acrocephalus capitatus* (Roth) Benth., **FMP2** 644; *Acrocephalus indicus* (Burm.f.) Kuntze, **FMi8** 365; herb to 1 m tall; open sandy places; once from Ph.

- 118.2.1 **Acrymia ajugiflora** Prain, **FMP2** 654, **FMi8** 312; low softly-woody shrub; lowland forest; Pk, Sl; endemic.
- 118.3.1 **Anisomeles indica** (L.) Kuntze, **FMi8** 329; *Anisomeles ovata* R.Br., **FMP2** 649; herb to 2 m tall; waste ground; Pn, Pk, Sl, Ml, Sp.
- 118.3.2 **Anisomeles malabarica** (L.) R. Br. *ex* Sims, **FMP2** 649, **FMi8** 329; shrubby herb to 1.5 m tall; waste ground; twice from Pn; probably introduced.
- 118.4.1 **Basilicum polystachyon** (L.) Moench, **FMi8** 366, **M47** 316; *Moschosma polystachyum* (L.) Benth., **FMP2** 644; herb to 1 m tall; rice-fields; Ps, Kd, Pn.
- 118.5.1 **Cymaria dichotoma** Benth., **FMP2** 654, **FMi8** 315; shrub to 2 m tall; mostly on limestone; Ps, Kd, Pk.
- 118.6.1 **Gomphostemma curtisii** Prain, **FMP2** 654, **FMi8** 322; *Cyrtandromoea repens* Ridl., **FMP2** 543; herb to 1.5 m tall; hill and montane forest at 250–1300 m; Pk, Ph.
- 118.6.2 **Gomphostemma crinitum** Wall. *ex* Benth., **FMP2** 652 incl. var. *griffithii* Prain, **FMi8** 321; herb to 1.5 m tall; mostly on limestone; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml.
- 118.6.3 **Gomphostemma javanicum** (Blume) Benth., **FMi8** 322; *Gomphostemma oblongum* Wall. *ex* Benth., **FMP2** 653 incl. var. *setosa* Ridl.; *Gomphostemma lacteum* Ridl., **FMP5** 326; erect herb to 2 m tall; montane forest; Kd, Pn, Kl, Ph, Sl, Jh.
- 118.6.4 **Gomphostemma microcalyx** Prain, **FMP2** 652, **FMi8** 321; herb to 1.5 m tall; lowland forest; Pk, Ml.
- 118.6.5 **Gomphostemma scortechinii** Prain, **FMP2** 653, **FMi8** 323; herb to 1.5 m tall; hill forest; Kl, Pk, Sl.
- 118.7.1 **Hyptis brevipes** Poit., **FMP2** 645, **FMi8** 369, **M47** 318; herb to 1.5 m tall; damp waste ground; Ml, Jh, Sp; naturalized from Mexico.
- 118.7.2 **Hyptis capitata** Jacq., **FMi8** 369, **M47** 320; herb to 2.5 m tall; waste ground; Pk, Ph, Sp; naturalized from tropical America.
- 118.7.3 **Hyptis suaveolens** (L.) Poit., **FMP2** 645, **FMi8** 371; aromatic herb to 2 m tall; dry open places, often near the sea; Sl, Sp; naturalized from tropical America.
- 118.8.1 **Leonotis nepetifolia** (L.) R.Br., **FMi8** 335; herb to 2.5 m tall; waste ground; widespread; naturalized from tropical Africa.
- 118.9.1 **Leonurus sibiricus** L., **FMP2** 651, **FMi8** 336; herb to 1.5 m tall; waste places; Kl, Pk, Ph, Sl, Ml, Sp; naturalized from temperate Asia.

- 118.10.1 **Leucas aspera** (Willd.) Link, **FM18** 337; herb to 60 cm tall; dry open sites; scattered.
- 118.10.2 **Leucas decedentata** (Willd.) Sm., **FM19** 567, **S32** 237; *Leucas flaccida* R. Br., **FM18** 340; *Leucas mollissima* Wall. ex Benth., **C14** 160; herb to 60 cm tall; on limestone rocks; Kd.
- 118.10.3 **Leucas lavandulifolia** Sm., **FMP2** 650, **FM18** 338, **M47** 322, **S29** 238; *Leucas linifolia* (Roth) Spreng., **FM19** 566; herb to 80 cm tall; waste ground, coconut plantations; Pn, Ml, Sp.
- 118.10.4 **Leucas martinicensis** R.Br., **FMP2** 650, **FM18** 340; herb to 60 cm tall; waste ground; once from Pk.
- 118.10.5 **Leucas zeylanica** (L.) R. Br., **FMP2** 650, **FM18** 338; herb to 60 cm tall; waste ground, roadsides; Pn, Kl, Pk, Ph, Sl, Ml, Jh, Sp.
- 118.11.1 **Ocimum americanum** L., **FM18** 376; *Ocimum canum* Sims, **FMP2** 644; aromatic herb to 1 m tall; cultivated and waste ground; Pk, Sp.
- 118.11.2 **Ocimum basilicum** L., **FMP2** 643, **FM18** 377; very aromatic herb to 1 m tall; waste ground, much cultivated; Pn, Pk, Ph, Jh, Sp.
- 118.11.3 **Ocimum gratissimum** L., **FMP2** 644, **FM18** 377; herb to 3 m tall; roadsides, waste ground; Pk.
- 118.11.4 **Ocimum tenuiflorum** L., **FM18** 378; *Ocimum sanctum* L., **FMP2** 643; bushy herb to 60 cm tall; common weed of waste ground; P. Langkawi, Kd, Pn, Pk, Ph, Sl, Ml, Jh, Sp.
- 118.12.1 **Orthosiphon aristatus** (Blume) Miq., **FM18** 380; *Orthosiphon stamineus* Benth., **FMP2** 645; herb to 2 m tall; forest margins, widely cultivated; P. Lankawi, Kl, Pk, Ph.
- 118.13.1 **Paraphlomis javanica** (Blume) Prain ex Back. & Bakh.f., **FM18** 350; *Paraphlomis rugosa* (Benth.) Prain, **FMP2** 651; subshrub to 1.8 m tall; clearings in lowland and hill forest; Pk, Ph, Sl.
- 118.14.1 **Plectranthus kunstleri** Prain, **FMP2** 646, **FM18** 392, **C14** 160; herb to 120 cm tall; on limestone; P. Laggun (Langkawi group) and Kuala Dipang, Pk; endemic.
- 118.15.1 **Pogostemon auricularius** (L.) Hassk., **FM18** 356, **M47** 324; *Dysophylla auricularia* (L.) Blume, **FMP2** 648; herb to 80 cm tall; damp open places; Kl, Ph, NS, Ml, Jh, Sp.
- 118.15.2 **Pogostemon cablin** (Blanco) Benth., **FM18** 353; aromatic erect herb to 1 m tall; clearings; once from Sl.



- 118.15.3 **Pogostemon heyneanus** Benth., **FMP2** 647, **FMi8** 353; aromatic erect herb to 1.5 m tall; forest clearings; Pn, Pk, Ph, Sl, NS, Ml.
- 118.15.4 **Pogostemon stellatus** (Lour.) Kuntze, **FMi8** 352; *Dysophylla verticillata* (Roxb.) Benth., *nom. illeg.*, **FMP2** 648; herb to 1 m tall; weed of rice fields; Ps, P. Langkawi, Pk.
- 118.16.1 **Satureja gracilis** (Benth.) Loes., **FMi8** 361; *Calamintha gracilis* Benth., **FMP2** 648; slender prostrate herb; open ground in the hills; around Taiping, Pk.
- 118.17.1 **Scutellaria discolor** Wall. *ex* Benth., **FMP2** 649, **FMi8** 324; herb to 50 cm tall; mountains; Kd, Pk, Ph.
- 118.18.1 **Solenostemon scutellarioides** (L.) Codd, **S32** 222; *Coleus atropurpureus* Benth., **FMP2** 646; *Plectranthus scutellarioides* (L.) R.Br., **FMi8** 389; herb with multi-coloured foliage to 1.5 m tall; waste ground; Pn, Pk, Ph, Ml, Jh, Sp.
119. LAURACEAE
- 119.1.1 **Actinodaphne borneensis** Meisn., **TFM4** 103; shrub to 5 m tall; swampy lowland forest; Tg, Jh.
- 119.1.2 **Actinodaphne concinna** Ridl., **FMP3** 110, **TFM4** 104; shrub to 3 m tall; montane forest; Tg, Ph, Sl; endemic.
- 119.1.3 **Actinodaphne cuspidata** Gamble, **FMP3** 111, **TFM4** 104; small tree to 15 m tall; lowland forest; known only from type, Ulu Bera, Pk; endemic.
- 119.1.4 **Actinodaphne fragilis** Gamble, **FMP3** 111, **TFM4** 104; tree to 18 m tall; lowland forest; twice from Pk; endemic.
- 119.1.5 **Actinodaphne glomerata** (Blume) Nees, **FMP3** 108, **TFM4** 104; tree to 18 m tall; lowland forest; Tg, Pk, Jh, Sp.
- 119.1.6 **Actinodaphne johorensis** Gamble, **FMP3** 109, **TFM4** 104; small tree to 6 m tall; hill forest; once each from Ph and Jh; endemic.
- 119.1.7 **Actinodaphne macrophylla** (Blume) Nees, **TFM4** 105; *Actinodaphne maingayi* Hook.f., **FMP3** 108; tree to 24 m tall; lowland to montane forest; Kl, Pk, Ph, Sl, Ml, Jh.
- 119.1.8 **Actinodaphne malaccensis** Hook.f., **FMP3** 109, **TFM4** 105; *Actinodaphne hullettii* Gamble, **FMP3** 110; tree; lowland forest; Pk, Ml, Sp; endemic.
- 119.1.9 **Actinodaphne montana** Gamble, **FMP3** 108, **TFM4** 105; small tree; montane forest; once from Gg Tahan, Ph.

- 119.1.10 **Actinodaphne oleifolia** Gamble, **FMP3** 111 incl. var. *glabra* Ridl., **TFM4** 106; *Actinodaphne gelonioides* Ridl., **FMP3** 111; shrub to 3 m tall; montane forest; Kl, Tg, Pk, Ph.
- 119.1.11 **Actinodaphne pruinosa** Nees, **FMP3** 110 incl. var. *kunstleri* Gamble, **TFM4** 106; tree to 20 m tall; lowland and hill forest; Kd, Pn, Sl, NS, MI, Sp; endemic.
- 119.1.12 **Actinodaphne ridleyi** Gamble, **FMP3** 109, **TFM4** 106; shrub or small tree; montane forest; once from Gg Pulai, Jh.
- 119.1.13a **Actinodaphne sesquipedalis** Hook.f. var. **glabra**, **TFM4** 108; tree to 15 m tall; lowland and hill forest; Kl, Tg, Ph.
- 119.1.13b **Actinodaphne sesquipedalis** Hook.f. var. **macrocarpa** (Gamble) Ridl., **FMP3** 108, **TFM4** 108; tree to 15 m tall; montane forest above 1200 m; Pk, Ph.
- 119.1.13c **Actinodaphne sesquipedalis** Hook.f. var. **sesquipedalis**, **FMP3** 107, **TFM4** 108; tree to 15 m tall; lowland forest; Kd, Pn, Pk, Sl, NS.
- 119.1.14 **Actinodaphne sphaerocarpa** (Blume) Nees, **TFM4** 108; tree to 30 m tall; lowlands; Kd, Pn, Pk.
- 119.1.15 **Actinodaphne sp. A**, **TFM4** 108; shrub to 5 m tall; peat swamp forest; once from Jh; ?endemic.
- 119.1.16 **Actinodaphne sp. B**, **TFM4** 108; shrub; montane forest above 1200 m; only known from Fraser's Hill, Ph; ?endemic.
- 119.1.17 **Actinodaphne sp. C**, **TFM4** 109; shrub; heath forest; once from Tanjong Hantu F.R., Pk; ?endemic.
- 117.1.18 **Actinodaphne sp. D**, **TFM4** 109; tree to 21 m tall; montane forest at 1200–1500 m; Cameron Highlands, Ph (common); endemic.
- 119.2.1 **Alseodaphne albifrons** Kosterm., **TFM4** 111; tree to 39 m tall; lowland and hill forest; Tg, Jh.
- 119.2.2 **Alseodaphne bancana** Miq., **FMP3** 98, **TFM4** 111; tree to 27 m tall; swampy lowland forest; Sl, Jh, Sp.
- 119.2.3 **Alseodaphne corneri** Kosterm., **TFM4** 111; tree to 6 m tall; lowland forest; Jh thrice collected; endemic.
- 119.2.4 **Alseodaphne dura** Kosterm., **TFM4** 112; tree to 30 m tall; lowland forest; Tg, Ph; endemic.
- 119.2.5 **Alseodaphne foxiana** (Gamble) Kosterm., **TFM4** 112; *Beilschmiedia foxiana* Gamble, **FMP3** 86; *Nothaphoebe reticulata* Gamble, **FMP3** 102 in part; tree to 15 m tall; montane forest above 1000 m; Kd, Pn, Pk, Ph, Sl; endemic.

- 119.2.6 **Alseodaphne garciniicarpa** Kosterm., **TFM4** 112; tree to 24 m tall; lowland forest; thrice from Pk; endemic.
- 119.2.7 **Alseodaphne insignis** Gamble, **FMP3** 99, **TFM4** 112; tree to 39 m tall; lowland forest; Tg, Pk, Ph, Sl.
- 119.2.8 **Alseodaphne intermedia** Kosterm., **TFM4** 113; tree to 45 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, Jh, Sp.
- 119.2.9 **Alseodaphne macrantha** Kosterm., **TFM4** 113; tree to 30 m tall; lowland to montane forest; Tg, Pk, Ph, Jh; endemic.
- 119.2.10 **Alseodaphne micrantha** Kosterm., **TFM4** 114; tree to 38 m tall; lowland forest; Jh; endemic.
- 119.2.11 **Alseodaphne nigrescens** (Gamble) Kosterm., **TFM4** 114; *Dehaasia nigrescens* Gamble, **FMP3** 88; small tree to 15 m tall; lowland to montane forest; Pn, Pk, Ph, Sl, Sp.
- 119.2.12 **Alseodaphne oblanceolata** (Merr.) Kosterm., **TFM4** 114; tree to 18 m tall; hill forest; Kd, Sl, Jh.
- 119.2.13 **Alseodaphne obovata** Kosterm., **TFM4** 115; tree to 33 m tall; lowland and hill forest; Kl, Tg, Pk, Jh.
- 119.2.14 **Alseodaphne paludosa** Gamble, **FMP3** 99, **TFM4** 115; tree to 30 m tall; swampy lowland forest; Pk, Sl; endemic.
- 119.2.15 **Alseodaphne peduncularis** (Wall. ex Nees) Meisn., **FMP3** 98, **TFM4** 115; *Nothaphoebe fruticosa* Gamble, **FMP3** 101; small tree to 12 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.
- 119.2.16 **Alseodaphne pendulifolia** Gamble, **FMP3** 100, **TFM4** 115; tree to 18 m tall; lowland forest; Tg, Pk, Ph, Sl, Jh.
- 119.2.17 **Alseodaphne perakensis** (Gamble) Kosterm., **TFM4** 116; *Stemmatodaphne perakensis* Gamble, **FMP3** 106; tree to 12 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Ml, Jh.
- 119.2.18 **Alseodaphne ridleyi** Gamble, **FMP3** 99, **TFM4** 116; tree to 21 m tall; lowland forest; Tg, Ph, Sl; endemic.
- 119.2.19 **Alseodaphne rubrolignea** Kosterm., **TFM4** 116; *Alseodaphne petiolaris auct. non* Hook.f., **FMP3** 99; tree to 15 m tall; montane forest; Ph.
- 119.2.20 **Alseodaphne wrayi** Gamble, **FMP3** 98, **TFM4** 116; tree; lowland forest; Pk.
- 119.2.21 **Alseodaphne sp. 1**, **TFM4** 117; tree to 21 m tall; lowland and hill forest; twice from Jh; endemic.

- 119.2.22 **Alseodaphne sp. 2, TFM4** 117; small tree to 12 m tall; lowland swamp forest; once from Jh; ?endemic.
- 119.2.23 **Alseodaphne sp. 3, TFM4** 117; tree to 27 m tall; lowland and hill forest to 1000 m; Tg, Ph; endemic.
- 119.3.1 **Beilschmiedia brevipes** Ridl., **FMP3** 86, **TFM4** 118; small tree; lowland forest near streams; once each from Kl, Tg, Ph; ?endemic.
- 119.3.2 **Beilschmiedia dictyoneura** Kosterm., **TFM4** 119; tree to 35 m tall; lowland to lower montane forest at 1000 m; Kd, Kl, Tg, NS, Jh.
- 119.3.3 **Beilschmiedia glabra** Kosterm., **TFM4** 119; tree to 24 m tall; lowland and hill forest to 900 m; Ph, Jh.
- 119.3.4 **Beilschmiedia glauca** S.K. Lee & L.F. Lau, **TFM4** 119; tree to 21 m tall; montane forest; Kl, Tg, Ph.
- 119.3.5 **Beilschmiedia insignis** Gamble, **FMP3** 82, **TFM4** 119; tree to 34 m tall; lowland to lower montane forest; Kl, Pk, Ph, Sl; endemic.
- 119.3.6 **Beilschmiedia kunstleri** Gamble, **FMP3** 83, **TFM4** 120; small tree; lowland and hill forest; Tg, Pk, Ph, Jh.
- 119.3.7 **Beilschmiedia lucidula** (Miq.) Kosterm., **TFM4** 120; tree to 21 m tall; lowland forest; P. Langkawi, Kd, Kl, Ph.
- 119.3.8 **Beilschmiedia lumutensis** Gamble, **FMP3** 84, **TFM4** 120; shrub or small tree to 6 m tall; lowland forest; Kl, Pk, Ph, Jh; endemic.
- 119.3.9 **Beilschmiedia madang** Blume, **TFM4** 120; *Beilschmiedia malaccensis* Hook.f., **FMP3** 83; *Beilschmiedia curtisii* Gamble, **FMP3** 84; *Beilschmiedia scortechinii* Gamble, **FMP3** 84; tree to 24 m tall; lowland and hill forest to 900 m; Pn, Tg, Pk, Ph, Sl, Jh.
- 119.3.10 **Beilschmiedia maingayi** Hook.f., **FMP3** 84, **TFM4** 121; tree to 18 m tall; hill and montane forest to 1200 m; Tg, Pk, Ph, Ml.
- 119.3.11 **Beilschmiedia membranacea** Gamble, **FMP3** 86, **TFM4** 121; tree to 6 m tall; hill forest; once each from Pk and Ph; endemic.
- 119.3.12 **Beilschmiedia pahangensis** Gamble, **FMP3** 86, **TFM4** 121; tree to 15 m tall; common on riverbanks in lowland forest; Kl, Pk, Ph; endemic.
- 119.3.13 **Beilschmiedia palembanica** (Miq.) Kosterm., **TFM4** 121; *Beilschmiedia longipes* Hook.f., **FMP3** 85; tree to 30 m tall; lowland to montane forest; Pk, Ph, Sl, Ml, Jh.
- 119.3.14 **Beilschmiedia penangiana** Gamble, **FMP3** 85, **TFM4** 122; tree to 12 m tall; hill forest; Pn; endemic.

- 119.3.15 **Beilschmiedia perakensis** Gamble, **FMP3** 85, **TFM4** 122; tree to 10 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS.
- 119.3.16 **Beilschmiedia tonkinensis** (Lecomte) Ridl., **FMP3** 85, **TFM4** 122; tree to 15 m tall; lowland forest, often coastal; Pk, Ph, Jh.
- 119.3.17 **Beilschmiedia wallichiana** Kosterm., **TFM4** 122; tree to 15 m tall; twice collected, Pn, Pk.
- 119.3.18 **Beilschmiedia sp. A**, **TFM4** 123; tree to 15 m tall; montane forest 750–1500 m; Ph; endemic.
- 119.4.1 **Cassytha filiformis** L., **FMP3** 137, **TFM4** 102; leafless twining parasitic vine; common on sandy coasts; widespread.
- 119.5.1 **Cinnadenia malayana** Kosterm., **TFM4** 123; tree to 22 m tall; hill forest; Sl, NS; endemic.
- 119.6.1 **Cinnamomum altissimum** Kosterm., **TFM4** 127; tree to 39 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Ph, Sl, Jh; endemic.
- 119.6.2 **Cinnamomum aureofulvum** Gamble, **FMP3** 95, **TFM4** 125; small tree to 12 m tall; montane forests above 1200 m; Sl, Ph; endemic.
- 119.6.3 **Cinnamomum cordatum** Kosterm., **TFM4** 125; tree to 6 m tall; montane forests; Pk, Ph; endemic.
- 119.6.4 **Cinnamomum cuspidatum** Miq., **TFM4** 126; *Cinnamomum graciliflorum* Gamble, **FMP3** 91; tree; lowland to montane forest; Kl, Pk, Ph.
- 119.6.5 **Cinnamomum impressicostatum** Kosterm., **TFM4** 126; tree to 15 m tall; montane forest at 1200–1500 m; Ph; endemic.
- 119.6.6 **Cinnamomum iners** Reinw., **FMP3** 92 incl. var. *angustifolium* Ridl., **TFM4** 126; *Cinnamomum paraneuron* Miq., **FMP3** 92; tree to 24 m tall; primary and secondary forest in lowlands and hills; common throughout.
- 119.6.7 **Cinnamomum javanicum** Blume, **FMP3** 94, **TFM4** 126; tree to 21 m tall; lowland and hill forest; Kd, Pk, Ph, Jh.
- 119.6.8 **Cinnamomum kunstleri** Ridl., **FMP3** 94, **TFM4** 127; tree to 12 m tall; lowland forest; Pn, Pk, Ml (once each); endemic.
- 119.6.9 **Cinnamomum microphyllum** Ridl., **FMP3** 92, **TFM4** 127; shrub or small tree to 6 m tall; montane forest at 1000–1500 m; Pk, Ph; endemic.
- 119.6.10 **Cinnamomum mollissimum** Hook.f., **FMP3** 95, **TFM4** 128; tree to 15 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.
- 119.6.11 **Cinnamomum pachypes** Kosterm., **TFM4** 128; tree to 13 m tall; hill forest; known only from type, Sl; endemic.

- 119.6.12 **Cinnamomum porrectum** (Roxb.) Kosterm., **TFM4** 128; *Cinnamomum parthenoxylon* Meisn., **FMP3** 96; *Cinnamomum inunctum* Meisn., **FMP3** 97; tree to 45 m tall; lowlands to mountains; Ml and Ph northward.
- 117.6.13 **Cinnamomum puberulum** Ridl., **FMP3** 96, **TFM4** 128; tree to 15 m tall; lowland to montane forest; Kd, Ph; endemic.
- 119.6.14 **Cinnamomum pubescens** Kochummen, **TFM4** 129; small tree to 7 m tall; montane forest at 1500 m; only known from Cameron Highlands, Ph; endemic.
- 119.6.15 **Cinnamomum rhynchophyllum** Miq., **FMP3** 93 incl. var. *lampongum* Miq., **TFM4** 130; tree to 12 m tall; lowland and hill forest; Kd, Pk, Ph, Jh.
- 119.6.16 **Cinnamomum saffrol** Kosterm., **TFM4** 130; tree to 21 m tall; hill forest at about 400 m; thrice from Ph; endemic.
- 119.6.17a **Cinnamomum scortechinii** Gamble var. *scortechinii*, **FMP3** 95, **TFM4** 130; *Cinnamomum velutinum* Ridl., **FMP3** 95; tree to 30 m tall; lower montane forest at about 1200 m; Kl, Tg, Ph, Sl; endemic.
- 119.6.17b **Cinnamomum scortechinii** Gamble var. *selangorensis* Ridl., **FMP3** 95, **TFM4** 131 '*selangorensis*'; tree to 30 m tall; montane forest at about 1500 m; twice from Gg Ulu Kali, Sl; endemic.
- 119.6.18 **Cinnamomum sintoc** Blume, **TFM4** 131; *Cinnamomum cinereum* Gamble, **FMP3** 96; tree to 39 m tall; lowland to montane forest; Kd, Kl, Pk, Ph, Sl, Ml, Jh.
- 119.6.19 **Cinnamomum subavenium** Miq., **TFM4** 131; *Cinnamomum ridleyi* Gamble, **FMP3** 93; tree to 30 m tall; lowland to montane forest at 1200 m; Kd, Kl, Tg, Sl, Sp
- 117.6.20 **Cinnamomum subcuneatum** Miq., **TFM4** 131; tree to 20 m tall; lowland forest; Pn, Pk, Ml, Jh.
- 119.6.21 **Cinnamomum vimineum** Nees, **FMP3** 92, **TFM4** 132; small tree; hill and montane forest; Kd, Pn, Kl, Ph.
- 119.7.1 **Cryptocarya bracteolata** Gamble, **FMP3** 79, **TFM4** 133; tree to 20 m tall; rocky forests in lowlands and mountains; Pk, Ph; endemic.
- 119.7.2 **Cryptocarya caesia** Blume, **FMP3** 81, **TFM4** 133; tree; lowland forest; Ml, Sp.
- 119.7.3 **Cryptocarya costata** Blume, **TFM4** 133; tree to 21 m tall; lowland forest by streams; Kd, Ph, Jh.
- 119.7.4 **Cryptocarya crassinervia** Miq., **FMP3** 78, **TFM4** 133; tree to 20 m tall; lowland and hill forest to 900 m; Kd, Tg, Pk, Ph, Jh.

- 119.7.5 **Cryptocarya densiflora** Blume, **FMP3** 77, **TFM4** 134; tree to 20 m tall; hill and montane forest to 1500 m; Kl, Pk, Ph, Sl.
- 119.7.6 **Cryptocarya enervis** Hook.f., **FMP3** 81, **TFM4** 134; small tree; lowland forest; Sl, Ml.
- 119.7.7 **Cryptocarya ferrea** Blume, **FMP3** 79, **TFM4** 134; tree to 22 m tall; lowland to montane forest; Kd, Kl, Tg, Ph, Sl.
- 119.7.8 **Cryptocarya griffithiana** Wight, **FMP3** 77, **TFM4** 134; tree to 20 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 119.7.9 **Cryptocarya impressa** Miq., **FMP3** 78, **TFM4** 135; tree to 33 m tall; lowland forests and swamps; NS, Ml, Jh.
- 119.7.10 **Cryptocarya infectoria** Miq., **TFM4** 135; tree to 21 m tall; lowland and hill forest to 600 m; Kd, Kl, Pk, Ph, Sl, NS, Jh.
- 119.7.11 **Cryptocarya kurzii** Hook.f., **FMP3** 80, **TFM4** 135; *Cryptocarya argentea* Gamble, **FMP3** 81; tree to 21 m, usually smaller; lowland forest; Kd, Tg, Pk, Ph, Ml, Jh.
- 119.7.12 **Cryptocarya laevigata** Blume, **TFM4** 136; small tree; lowland swamp forest; once from Jh.
- 119.7.13 **Cryptocarya nitens** (Blume) Koord. & Valetton, **TFM4** 136; *Cryptocarya areolata* Gamble, **FMP3** 80; *Cryptocarya bubongana* Gamble, **FMP3** 81; tree to 27 m tall; lowland riversides; Kd, Tg, Pk, Ph, Sl.
- 119.7.14 **Cryptocarya rugulosa** Hook.f., **FMP3** 78, **TFM4** 136; tree to 40 m tall; lowland and hill forest; Kd, Pn, Pk, Tg, Ml, Jh, Sp.
- 119.7.15 **Cryptocarya scortechinii** Gamble, **FMP3** 80, **TFM4** 136; tree to 24 m tall; lowland and montane forest to 1500 m; Pk, Ph, NS.
- 119.7.16 **Cryptocarya teysmanniana** Miq., **TFM4** 137; tree to 12 m tall; hill forest; Sl, Jh.
- 119.7.17 **Cryptocarya tomentosa** Blume, **FMP3** 79, **TFM4** 137; tree to 20 m tall; lowland and hill forest to 1000 m; Kd, Pk.
- 119.7.18 **Cryptocarya wrayi** Gamble, **FMP3** 77, **TFM4** 137; tree to 20 m tall; lower montane forest at 900–1200 m; Kl, Pk, Ph, Jh; endemic.
- 119.7.19 **Cryptocarya zollingeriana** Miq., **TFM4** 137; *Cryptocarya tenuifolia* Ridl., **FMP3** 81; shrub or small tree to 9 m tall; hill forest; Kl, Sl.
- 119.8.1 **Dehaasia candolleana** (Meisn.) Kosterm., **TFM4** 138; *Dehaasia cuneata* auct. non (Blume) Blume, **FMP3** 87 in part; small tree; lowland forest; Kd, Pk, NS.

- 119.8.2      **Dehaasia cuneata** (Blume) Blume, **FMP3** 87 in part, **TFM4** 139; tree to 33 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, NS, Jh.
- 119.8.3      **Dehaasia incrassata** (Jack) Kosterm., **TFM4** 139; *Dehaasia microcarpa* Blume, **FMP3** 87; tree to 24 m tall; lowland forest by streams; Kl, Pk, Ph, Sl, Ml.
- 119.8.4      **Dehaasia lancifolia** Ridl., **FMP3** 88, **TFM4** 139; small tree to 8 m tall; montane forest; Pk, Ph; endemic.
- 119.8.5      **Dehaasia longipedicellata** (Ridl.) Kosterm., **TFM4** 140; tree to 12 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, NS.
- 119.8.6      **Dehaasia longipetiolata** Kosterm., **TFM4** 140; tree to 24 m tall; lowland forest; P. Langkawi, Kd, Pn, Tg, Pk, Ph.
- 119.8.7      **Dehaasia pauciflora** Blume, **TFM4** 140; *Dehaasia curtisii* Gamble, **FMP3** 88; tree to 21 m tall; lowland to montane forest; Pn, Kl, Ph.
- 119.8.8      **Dehaasia polyneura** (Miq.) Kosterm., **TFM4** 140; *Dehaasia elliptica* Ridl., **FMP5** 329; tree to 33 m tall; lowland forest; Tg, Pk, Ph, Sl, NS.
- 119.8.9      **Dehaasia tomentosa** (Blume) Kosterm., **TFM4** 141; *Dehaasia cuneata auct. non* (Blume) Blume, **FMP3** 87; tree to 15 m tall; lowland and hill forest; Pk, Ph.
- 119.9.1      **Endiandra holttumii** M.R. Hend., **H35** 120, **TFM4** 141; tree to 17 m tall; swampy lowland forest; Ph, Jh.
- 119.9.2      **Endiandra kingiana** Gamble, **FMP3** 89, **TFM4** 142; tree to 33m tall; lowland forest; Kl, Pk, NS, Jh.
- 119.9.3      **Endiandra macrophylla** (Blume) Boerl., **TFM4** 142; shrub or small tree to 7 m tall; lowland and hill forest; P. Tioman, Jh.
- 119.9.4      **Endiandra maingayi** Hook.f., **FMP3** 89, **TFM4** 142; tree to 40 m tall; lowland to montane forest at 1200 m; Kl, Pk, Ph, Sl, NS, Jh; endemic.
- 119.9.5      **Endiandra praeclara** Gamble, **FMP3** 90, **TFM4** 143; tree to 30 m tall; hill and montane forest at 300–1200 m; Kd, Pk, Ph; endemic.
- 119.9.6      **Endiandra rubescens** (Blume) Miq., **FMP3** 89, **TFM4** 143; tree to 27 m tall; lowland and hill forest; Tg, Pk, Sl.
- 119.9.7      **Endiandra scobiculata** Kosterm., **TFM4** 143; tree to 33m tall; montane forest at 1200 m; known only from Fraser's Hill, Ph; endemic.
- 119.9.8      **Endiandra wrayi** Gamble, **FMP3** 89, **TFM4** 143; tree to 15 m tall; hill forest; Kd, Pk, Sl; endemic.



- 119.9.9            **Endiandra sp. 1, TFM4** 143; tree to 27 m tall; lowland forest; once from Ph.
- 119.9.10        **Endiandra sp. 2, TFM4** 144; tree to 12 m tall; lowland forest; once from Jh.
- 119.10.1        **Lindera bibracteata** (Nees) Boerl., **FMP3** 136, **TFM4** 145; shrub to 6 m tall; montane forest; Pk, Ph, Jh.
- 119.10.2        **Lindera caesia** Blume, **FMP3** 136, **TFM4** 145; tree to 15 m tall; montane forest; Pk, Ph, Sl.
- 119.10.3a       **Lindera concinna** Ridl. var. **concinna**, **FMP3** 137, **TFM4** 146; shrub; montane forest; only known from Gg Tahan, Ph; endemic.
- 119.10.3b       **Lindera concinna** Ridl. var. **reticulata** Kochummen, **TFM4** 146; shrub; montane forest; Genting Highlands, Ph, Gg Moyang, Sl; endemic.
- 119.10.4        **Lindera lucida** (Blume) Boerl., **TFM4** 146; *Lindera malaccensis* Hook.f., **FMP3** 133; *Lindera selangorensis* Ridl., **FMP3** 134; tree to 15 m tall; lowland to montane forest; common throughout.
- 119.10.5        **Lindera montana** Ridl., **FMP3** 135, **TFM4** 146; *Lindera stricta* Ridl., **FMP3** 135; shrub; montane forest at 900–1500 m; Gg Tahan, Ph; endemic.
- 119.10.6        **Lindera oxyphylla** Hook.f., **FMP3** 134, **TFM4** 146; *Lindera polyantha* Boerl., **FMP3** 135; tree to 36 m tall; lowland and hill forest to 750 m; Pn, Pk, Ph, Sl, NS.
- 119.10.7        **Lindera pipericarpa** (Meisn.) Boerl., **FMP3** 135, **TFM4** 147; tree to 18 m tall; hills and mountains; common and widespread.
- 119.10.8        **Lindera reticulosa** Kosterm., **TFM4** 148; tree to 27 m tall; montane forest; Cameron Highlands and Fraser's Hill, Ph; endemic.
- 119.10.9        **Lindera rufa** (Stapf) Gamble, **FMP3** 136, **TFM4** 148; shrub to 2 m tall; montane forest; Pk, Sl.
- 117.10.10       **Lindera subumbellifera** (Blume) Kosterm., **TFM4** 148; *Lindera caudifolia* Ridl., **FMP3** 135; shrub or small tree to 12 m tall; lowland to montane forest; Pn, Kl, Pk, Ph, Sl.
- 119.10.11       **Lindera wrayi** Gamble, **FMP3** 134, **TFM4** 148; shrub or small tree to 6 m tall; montane forest; Pk, Ph; endemic.
- 119.11.1        **Litsea accedens** (Blume) Boerl., **TFM4** 151; *Litsea singaporensis* Gamble, **FMP3** 122; tree to 10 m tall; lowland and hill forest; Jh, Sp.
- 119.11.2        **Litsea acrantha** Ridl., **FMP3** 123 **TFM4** 151; *Litsea terminalis* Ridl., **FMP5** 330; shrub to 2 m tall; montane forest; Kd, Kl, Ph; endemic.
- 119.11.3        **Litsea angulata** Blume, **FMP3** 120, **TFM4** 152; tree to 17 m tall; lowland forest; Pk, Sl.

- 119.11.4 ***Litsea artocarpifolia*** Gamble, **FMP3** 116, **TFM4** 152; tree to 18 m tall; hill forest; Kd, Pk, Sl.
- 119.11.5 ***Litsea brachystachya*** Boerl., **FMP3** 119, **TFM4** 152; tree to 15 m tall; lowland forest; Pk.
- 119.11.6 ***Litsea castanea*** Hook.f., **FMP3** 121, **TFM4** 152; *Litsea quercina* Gamble, **FMP3** 121; tree to 33 m tall; lowland to montane forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 119.11.7 ***Litsea cinerascens*** Ridl., **TFM3** 118, **TFM4** 153; small tree; hill and montane forest at 600–1200 m; P. Langkawi, Kd, Ph, Sl; endemic.
- 119.11.8 ***Litsea claviflora*** Gamble, **FMP3** 125, **TFM4** 154; tree to 12 m tall; lowland forest; known only from type, Pk; endemic.
- 119.11.9 ***Litsea cordata*** (Jack) Hook.f., **FMP3** 118, **TFM4** 154; tree to 30 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh.
- 119.11.10 ***Litsea costalis*** (Nees) Kosterm., **TFM4** 154; *Litsea megacarpa* Gamble, **FMP3** 127; tree to 30 m tall; lowland and hill forests to 500 m; Pk, Ph, Sl, Ml, Sp.
- 119.11.11 ***Litsea costata*** (Blume) Boerl., **TFM4** 154; *Litsea perakensis* Gamble, **FMP3** 122; *Litsea pustulata* Gamble, **FMP3** 122; *Litsea patellaris* Gamble, **FMP3** 123; *Litsea kunstleri* Gamble, **FMP3** 125; tree to 18 m tall; lowland to montane forest; Pk, Ph.
- 119.11.12 ***Litsea curtisii*** Gamble, **FMP3** 127, **TFM4** 155; tree to 42 m tall; lowland and hill forest; Kd, Pn, Pk, Sl, Jh; endemic.
- 119.11.13 ***Litsea cylindrocarpa*** Gamble, **FMP3** 121, **TFM4** 155; tree to 42 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Jh.
- 119.11.14 ***Litsea elliptica*** Blume, **TFM4** 155; *Litsea petiolata* Hook.f., **FMP3** 119; tree to 45 m tall; mostly in the lowlands; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 119.11.15 ***Litsea erectinervia*** Kosterm., **TFM4** 156; tree to 30 m tall; lowland forest; Tg, Ph, Sl, Ml, Sp.
- 119.11.16 ***Litsea fenestrata*** Gamble, **FMP3** 123, **TFM4** 156; tree to 30 m tall; lowlands including swamps; Tg, Pk.
- 119.11.17 ***Litsea ferruginea*** (Blume) Blume, **FMP3** 129, **TFM4** 156; *Litsea griffithii* Gamble, **FMP3** 129; tree to 21 m tall; lowland and hill forest; Pk, Ph, Sl, Jh.
- 119.11.18 ***Litsea firma*** (Blume) Hook.f., **FMP3** 116, **TFM4** 156; tree to 42 m tall; lowland forest; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

- 119.11.19 ***Litsea foxiana*** Gamble, **FMP3** 123, **TFM4** 157; tree; hill forest; only known from type, Penang Hill; endemic.
- 119.11.20a ***Litsea glutinosa*** (Lour.) C.B. Rob. var. ***brideliifolia*** Merr., **TFM4** 157; tree to 15 m tall; on limestone; only known from Baling, Kd; endemic variety.
- 119.11.20b ***Litsea glutinosa*** (Lour.) C.B. Rob. var. ***glutinosa***, **TFM4** 157; *Litsea sebifera* Blume, **FMP3** 157; tree to 15 m tall; lowland and hill forest; Kd.
- 119.11.21 ***Litsea gracilipes*** Hook.f., **FMP3** 130, **TFM4** 157; tree to 21 m tall; fresh water and peat swamp forest; Pk, Ph, Sl, Jh.
- 119.11.22 ***Litsea gracilis*** Gamble, **FMP3** 117, **TFM4** 158; small tree; lowland forest; only known from type, Pk; endemic.
- 119.11.23 ***Litsea grandis*** (Wall. ex Nees) Hook.f., **FMP3** 115, **TFM4** 158; tree to 30 m tall; lowland and montane forest to 1500 m; P. Langkawi, Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh.
- 119.11.24 ***Litsea helferi*** Hook.f. var. ***ovata*** Gamble, **FMP3** 125, **TFM4** 158; tree to 8 m tall; montane forest above 1500 m; Pk, Ph; endemic variety.
- 119.11.25 ***Litsea hirsutior*** Kosterm., **K58** 207; tree to 5 m tall; only known from type; Sg Lebir, Kl; endemic.
- 119.11.26a ***Litsea hirsutissima*** Gamble var. ***geniculata*** Gamble, **FMP3** 118, **TFM4** 158; shrub or small tree to 5 m tall; hill forest; only known from type, Pk; endemic variety.
- 119.11.26b ***Litsea hirsutissima*** Gamble var. ***hirsutissima***, **FMP3** 118, **TFM4** 158; shrub or small tree to 5 m tall; hill forest; Kl, Pk; ?endemic.
- 119.11.27 ***Litsea insignis*** (Blume) Boerl., **TFM4** 159; *Litsea glabrifolia* Ridl., **FMP3** 119; tree to 21 m tall; lowland forest; Kd, Ph, Sl.
- 119.11.28 ***Litsea johorensis*** Gamble, **FMP3** 114, **TFM4** 159; *Litsea trunciflora* Gamble, **TFM3** 114; tree to 18 m tall; lowland to lower montane forest at 1200 m; Kl, Tg, Pk, Ph, NS, Jh.
- 119.11.29 ***Litsea lanceolata*** (Blume) Kosterm., **TFM4** 159; *Litsea sarawacensis* Gamble, **FMP3** 130; shrub or small tree to 7 m tall; lowland to montane forest; Ph, Jh, Sp.
- 119.11.30a ***Litsea lancifolia*** (Roxb. ex Wall.) Hook.f. var. ***lancifolia***, **FMP3** 130, **TFM4** 160; small tree to 12 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Sp.
- 119.11.30b ***Litsea lancifolia*** (Roxb. ex Wall.) Hook.f. var. ***rufa*** Gamble, **FMP3** 130, **TFM4** 160; small tree to 12 m tall; lowland forest; Pk, Sl; endemic variety.

- 119.11.31 ***Litsea machilifolia*** Gamble, **FMP3** 126 incl. var. *angustifolia* Gamble and var. *montana* Ridl., **TFM4** 160; lowland and montane forest to 1500 m; Pn, Pk, Ph, NS, Ml, Jh, Sp.
- 119.11.32 ***Litsea magnifica*** (Miq.) Villar, **FMP3** 115 incl. var. *pahangensis* Ridl., **TFM4** 160; small tree; lowland and hill forest; Pn, Kl, Ph, Ml, Jh.
- 119.11.33 ***Litsea maingayi*** Hook.f., **FMP3** 128, **TFM4** 161; tree to 34 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, NS, Ml, Jh.
- 119.11.34 ***Litsea monopetala*** (Roxb.) Pers., **TFM4** 161; shrub or small tree to 9 m tall; lowlands near streams; Kl, Ph, Sl.
- 119.11.35 ***Litsea myristicifolia*** (Wall. ex Nees) Hook.f., **FMP3** 125, **TFM4** 161; tree to 27 m tall; lowland to montane forest; P. Langkawi, Kd, Pn, Tg, Pk, Ph, NS, Ml, Sp.
- 119.11.36 ***Litsea nidularis*** Gamble, **FMP3** 127, **TFM4** 161; tree to 30 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml.
- 119.11.37a ***Litsea noronhae*** Blume var. *hexandra* Gamble, **FMP3** 129, **TFM4** 162; small tree; hill forest; once from Genting Bidai, Sl; endemic variety.
- 119.11.37b ***Litsea noronhae*** Blume var. *noronhae*, **FMP3** 128, **TFM4** 162; shrub or small tree to 15 m tall; lowland and hill forest; Kl, Pk, Sl.
- 119.11.38a ***Litsea ochracea*** (Blume) Boerl. var. *oblanceolata* (Gamble) Kochummen ex I.M. Turner, **TFM4** 162, **T24** 222; *Litsea oblanceolata* Gamble, **FMP3** 125; tree to 28 m tall; swamp forest; Pk, Jh; endemic variety.
- 119.11.38b ***Litsea ochracea*** (Blume) Boerl. var. *ochracea*, **FMP3** 124, **TFM4** 162; tree to 28 m tall; lowland and hill forest; Pk, Ph.
- 119.11.39 ***Litsea panamonja*** Hook.f., **FMP3** 127, **TFM4** 162; tree to 12 m tall; lowland forest; once each from Pk and Ml.
- 119.11.40 ***Litsea penangiana*** Hook.f., **FMP3** 121, **TFM4** 163; shrub or small tree to 9 m tall; hill forest to 1200 m; Kd, Pn, Kl, Pk, Ph; endemic.
- 119.11.41 ***Litsea polyantha*** Juss., **FMP3** 118, **TFM4** 163; tree to 18 m tall; lowland and hill forest; Pn, Pk, Ph.
- 119.11.42 ***Litsea resinosa*** Blume, **TFM4** 163; *Litsea monticola* Gamble, **FMP3** 124; tree to 30 m tall; lowland swamps to montane forest; Kl, Tg, Pk, Ph, Sl.
- 119.11.43 ***Litsea ridleyi*** Gamble, **FMP3** 120; small tree; lowland forest; Sp; ?endemic.
- 119.11.44 ***Litsea robusta*** Blume, **FMP3** 129, **TFM4** 163; tree to 36 m tall; low hills; Kd, Tg, Pk, Ph, Sl, NS, Jh, Sp.

- 119.11.45 ***Litsea rubicunda*** Kosterm., **TFM4** 164; shrub or small tree to 6 m or more tall; hill and montane forest; Ph, P, Tioman, Sl.
- 119.11.46 ***Litsea scortechinii*** Gamble, **FMP3** 124, **TFM4** 164; small tree; only known from type, Pk; endemic.
- 119.11.47 ***Litsea sessiliflora*** Hook.f., **FMP3** 131, **TFM4** 164; *Litsea ujongensis* Gamble, **FMP3** 131 incl. var. *nervosa* Gamble; shrub to 3 m tall; lowland and montane forest to 1500 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.
- 119.11.48a ***Litsea spathacea*** Gamble var. **spathacea**, **FMP3** 120, **TFM4** 165; shrub or small tree to 15 m tall; lowland and hill forest; Pn, Kl, Pk, Ph, Sl, NS, Jh; endemic.
- 119.11.48b ***Litsea spathacea*** Gamble var. **tomentosa** Gamble, **FMP3** 120, **TFM4** 165; small tree; hill forest; Pk; endemic.
- 119.11.49 ***Litsea teysmannii*** Gamble, **FMP3** 126, **TFM4** 165; tree to 27 m tall; peat swamp forest; Pk, Sl, Ml.
- 119.11.50 ***Litsea tomentosa*** Blume, **FMP3** 115, **TFM4** 165; tree to 27 m tall; lowland and hill forest to 750 m; Pn, Pk, Ph, Sl.
- 119.11.51a ***Litsea umbellata*** (Lour.) Merr. var. **fuscotomentosa** (Meisn.) Kochummen ex I.M. Turner, **TFM4** 166, **T24** 222; *Litsea amara* Blume var. *fuscotomentosa* Meisn., **FMP3** 117; shrub or small tree to 12 m tall; lowland forests; Pn, Tg, Pk, Sl, NS, Jh.
- 119.11.51b ***Litsea umbellata*** (Lour.) Merr. var. **umbellata**, **TFM4** 166; *Litsea amara* Blume, **FMP3** 117 incl. vars. *angusta* (Wall. ex Nees) Meisn. and *attenuata* Gamble; shrub or small tree to 12 m tall; lowland forests; common throughout.
- 119.11.52 ***Litsea wrayi*** Gamble, **FMP3** 122, **TFM4** 166; tree to 25 m tall; lowland and hill forest; Kd, Pk, Sl, NS; endemic.
- 119.11.53 ***Litsea* sp. 1**, **TFM4** 166; tree to 18 m tall; lowland and hill forest to 1200 m; Ph, Jh; endemic.
- 119.11.54 ***Litsea* sp. 2**, **TFM4** 166; tree to 15 m tall; lower montane forest at 1000 m; once from Fraser's Hill, Ph; ?endemic.
- 119.11.55 ***Litsea* sp. 3**, **TFM4** 167; tree to 27 m tall; montane forest; thrice collected, Ph & Jh; ?endemic.
- 119.11.56 ***Litsea* sp. 4**, **TFM4** 167; shrub to 3 m tall; montane forest at 1100 m; known only from Gg Belumut, Jh; ?endemic.
- 119.12.1 ***Micropora curtisii*** Hook.f., **FMP3** 90; *Hexapora curtisii* Hook.f., **TFM4** 144; tree to 18 m tall; hill forest at 300 m; only known from Penang Hill; endemic.

- 119.13.1 **Neolitsea coccinea** B.C. Stone, **TFM4** 168; shrub to 3 m tall; montane forest at 1600 m; only known from Gg Ulu Kali, Ph; endemic.
- 119.13.2 **Neolitsea kedahensis** Gamble, **FMP3** 132, **TFM4** 168 '*kedahense*'; shrub or small tree to 6 m tall; montane forest at 1000 m; only known from Gg Jerai, Kd; endemic.
- 119.13.3 **Neolitsea mollissima** Gamble, **FMP3** 132, **TFM4** 168; small tree; montane forest at 1000 m; known only from type, Gg Batu Puteh, Pk; endemic.
- 119.13.4 **Neolitsea villosa** (Blume) Merr., **FMP3** 132, **TFM4** 168; tree to 18 m tall; montane forest at 1200 m; Pk, Ph.
- 119.13.5 **Neolitsea zeylanica** (Nees) Merr., **FMP3** 132, **TFM4** 169; shrub or small tree; lowland and hill forest to 1000 m; throughout.
- 119.13.6 **Neolitsea sp. 1**, **TFM4** 169; shrub or small tree to 9 m tall; montane forest at about 1000 m; Fraser's Hill & Gg Tapis, Ph; endemic.
- 119.14.1 **Nothaphoebe condensata** Ridl., **FMP3** 102, **TFM4** 170; tree; once from P. Langkawi; endemic.
- 119.14.2 **Nothaphoebe coriacea** (Kosterm.) Kosterm., **TFM4** 170; tree to 36 m tall; peat swamp forest; Tg, Ph, Sl.
- 119.14.3a **Nothaphoebe kingiana** Gamble var. **glabrescens** Gamble, **FMP3** 102, **TFM4** 171; tree to 30 m tall; swampy lowland forest; Pk, Jh; endemic.
- 119.14.3b **Nothaphoebe kingiana** Gamble var. **kingiana**, **FMP3** 101, **TFM4** 171; tree to 30 m tall; lowland forest; Kd, Pk, Ph; endemic.
- 119.14.4 **Nothaphoebe pahangensis** Kosterm., **TFM4** 171; tree to 24 m tall; montane forest at about 1200 m; only known from Cameron Highlands, Ph; endemic.
- 119.14.5 **Nothaphoebe panduriformis** (Hook.f.) Gamble, **FMP3** 102, **TFM4** 171; tree to 24 m tall; lowland and hill forest to 600 m; Kd, Pk, Ph, Sl, NS, MI, Jh.
- 119.14.6 **Nothaphoebe umbelliflora** Blume, **FMP3** 101, **TFM4** 172; tree to 33 m tall; lowland to lower montane forest at 1200 m; Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp.
- 119.15.1 **Persea declinata** (Blume) Kosterm., **TFM4** 173; *Phoebe declinata* Nees, **FMP3** 104; tree to 30 m tall; lowland to montane forest at 1300 m; Pn, Kl, Tg, Ph, Sl, Sp.
- 119.15.2 **Persea fruticosa** (Kurz) Kosterm., **TFM4** 173; *Nothaphoebe angustifolia* Ridl., **FMP3** 103; shrub or small tree to 9 m tall; montane forest at 1000 m and above; Kd, Ph.
- 119.15.3 **Persea sp. nov. 1**, **TFM4** 174; tree to 18 m tall; lowland heath and montane forest; Kl, Ph.

- 119.15.4 **Persea sp. nov. 2, TFM4** 174; small tree to 7 m tall; montane forest above 1200 m; once each from Fraser's Hill and Cameron Highlands, Ph; endemic.
- 119.15.5 **Persea sp. nov. 3, TFM4** 174; tree to 24 m tall; montane forest; Kd, Ph; endemic.
- 119.15.6 **Persea sp. nov. 4, TFM4** 174; tree to 30 m tall; montane forest; twice from Cameron Highlands, Ph; endemic.
- 119.15.7 **Persea sp. nov. 5, TFM4** 174; shrub to 3 m tall; river banks; only known from Sg Tahan, Ph; endemic.
- 119.15.8 **Persea sp. nov. 6, TFM4** 175; tree to 9 m tall; lowland forest; twice from Ph; endemic.
- 119.16.1 **Phoebe elliptica** Blume, **TFM4** 176; *Phoebe macrophylla* Blume, **FMP3** 105; tree to 27 m tall; lowland and hill forest to 900 m; Pk, Ph, Sl, NS.
- 119.16.2 **Phoebe grandis** (Nees) Merr., **TFM4** 176; *Phoebe kunstleri* Gamble, **FMP3** 105; *Phoebe opaca* Blume, **FMP3** 105 incl. var. *cuspidata* Gamble; *Phoebe cuneata* Blume, **FMP3** 106; tree to 21 m tall; lowland to montane forest; throughout.
- 119.16.3 **Phoebe lanceolata** (Wall. ex Nees) Nees, **FMP3** 104, **TFM4** 176; shrub or small tree to 9 m tall; lowland riverbanks; Kl, Tg, Ph, Sl.
- 119.16.4 **Phoebe scortechinii** (Gamble) Kochummen, **TFM4** 177; *Machilus scortechinii* Gamble, **FMP3** 103; tree to 15 m tall; montane forest; only known from Maxwell's Hill, Pk; endemic.
- 119.16.5 **Phoebe tavoyana** (Meisn.) Hook.f., **FMP3** 104 incl. var. *villosa* Ridl., **TFM4** 178; tree to 14 m tall; lowland forest; P. Langkawi, Kd, Kl, Pk.
- 119.16.6 **Phoebe sp. A, TFM4** 178; tree to 33 m tall; montane forest at about 1350 m; once each from Fraser's Hill & Gg Ulu Kali, Ph; ?endemic.

## 120. LECYTHIDACEAE

- 120.1.1 **Abdulmajidia chaniana** Whitmore, **W12** 209; *Lecythidaceae sp. A*, **TFM2** 266; small tree about 10 m tall; lowland forest to 570 m; Bt Chini, Ph, Gg Pulai, Jh; endemic.
- 120.1.2 **Abdulmajidia maxwelliana** Whitmore, **W12** 210; *Lecythidaceae sp. B*, **TFM2** 266; small tree about 10 m tall; lower montane forest at about 600 m; Maxwell's Hill, Pk; endemic.
- 120.2.1a **Barringtonia acutangula** (L.) Gaertn. ssp. *acutangula*, **P14** 228, **TFM2** 259; *Barringtonia pedicellata* Ridl., **FMP1** 759; shrub or small tree to 13 m tall; lowland forest, usually near rivers; Kd, Tg, Pk, Ph, Jh.

- 120.2.1b **Barringtonia acutangula** (L.) Gaertn. ssp. **spicata** (Blume) Payens, **P14** 231, **TFM2** 259; *Barringtonia spicata* Blume, **FMP1** 759; shrub or small tree to 13 m tall; lowland forest near rivers or the sea; Ml and Ph northward.
- 120.2.2 **Barringtonia asiatica** (L.) Kurz, **P14** 184, **TFM2** 258; *Barringtonia speciosa* J.R. Forst. & G. Forst., **FMP1** 756; tree to 20 m tall or more; sandy shores; all coasts.
- 120.2.3 **Barringtonia conoidea** Griff., **FMP1** 757, **P14** 189, **TFM2** 258; sparsely branching shrub or small tree to 4 m tall; tidal estuaries; commoner on the west coast.
- 120.2.4 **Barringtonia corneri** Kiew & K.M. Wong, **K49** 457; monopodial treelet to 10 m tall; swampy lowland forest; Jh; endemic.
- 120.2.5 **Barringtonia filirachis** Payens, **P14** 188, **TFM2** 259; small tree about 8 m tall; swampy lowland forest; S.E. Jh.
- 120.2.6 **Barringtonia fusiformis** King, **FMP1** 759, **P14** 240, **TFM2** 259; shrub or small tree to 8 m tall; lowland forest often near rivers; Pk to Jh; endemic.
- 120.2.7 **Barringtonia macrocarpa** Hassk., **P14** 237, **TFM2** 259; shrub or small tree to 6 m tall; lowland forest near rivers; widely scattered.
- 120.2.8 **Barringtonia macrostachya** (Jack) Kurz, **FMP1** 758, **P14** 244, **TFM2** 260; tree to 20 m tall; lowland forest, rarely in the mountains; throughout.
- 120.2.9 **Barringtonia pauciflora** King, **FMP1** 757, **P14** 243, **TFM2** 260; small tree to 13 m tall; hill forest; once from Larut, Pk.
- 120.2.10 **Barringtonia payensiana** Whitmore, **TFM2** 259; small tree; lowland forest; once each from P. Pangkor, Pk, and Ulu Batang Kali, Sl; endemic.
- 120.2.11 **Barringtonia pendula** (Griff.) Kurz, **P14** 248, **TFM2** 261; *Barringtonia musiformis* King, **FMP1** 758; tree to 33 m tall; lowland forest to 500 m; throughout.
- 120.2.12 **Barringtonia racemosa** (L.) Spreng., **FMP1** 757, **P14** 192, **TFM2** 259; shrub or tree to 20 m tall; periodically flooded forest; widespread.
- 120.2.13 **Barringtonia revoluta** Merr., **P14** 199, **TFM2** 259; tree; lowland forest; Ph, Jh.
- 120.2.14 **Barringtonia reticulata** (Blume) Miq., **P14** 252, **TFM2** 260; *Barringtonia sumatrana* Miq., **FMP1** 758; shrub or small tree to 10 m tall; sandy shores and tidal creeks; Pk, Jh, Sp.
- 120.2.15 **Barringtonia scortechinii** King, **FMP1** 757, **P14** 233, **TFM2** 262; tree to 21 m tall; lowland and hill forest to 1200 m; throughout.



120.3.1 **Careya arborea** Roxb., **FMP1** 760, **TFM2** 264; tree to 12 m tall; open sandy country; Ps, P. Langkawi, Kd.

120.4.1 **Planchonia grandis** Ridl., **FMP1** 760, **TFM2** 264; tree to 36 m tall; lowland and hill forest to 600 m; Kd, Kl, Pk, Jh, Sp.

120.4.2 **Planchonia valida** (Blume) Blume, **FMP1** 760, **TFM2** 264; tree to 30 m tall; lowlands; Kl, Pk, Ph.

## 121. LEEACEAE

121.1.1 **Leea aequata** L., **FMP1** 486, **FMI7** 775, **TFM4** 481; *Leea robusta* auct. non Roxb., **FMP1** 486; shrub; lowland forest; Kd, Pk.

121.1.2 **Leea angulata** Korth. ex Miq., **FMP1** 485, **FMI7** 772, **TFM4** 481; tree to 7 m tall; open sandy places; Kl, Pk, Ph, Sl, NS, Sp.

121.1.3 **Leea curtisii** King, **FMP1** 485, **FMI7** 773, **TFM4** 481; shrub to 3 m tall; lowland forest; Pk, Ph.

121.1.4 **Leea guineensis** G. Don, **FMI7** 777, **TFM4** 481; small shrub; lowland forest; Kl, Ph, Sl, Jh.

121.1.5 **Leea indica** (Burm.f.) Merr., **FMI7** 779, **TFM4** 482; *Leea gigantea* Griff., **FMP1** 484; *Leea sambucina* Willd., **FMP1** 484; *Leea sundaica* Miq., **FMP1** 485; *Leea javanica* auct. non Blume, **FMP1** 486; tree to 10 m tall; lowland forest, particularly secondary regrowth; throughout.

121.1.6 **Leea rubra** Blume ex Spreng., **FMP1** 485, **FMI7** 776, **TFM4** 482; shrub to 2 m tall; lowland forest; Ps, Kd, Pn, Kl.

121.1.7 **Leea saxatilis** Ridl., **FMP1** 486, **FMI7** 777, **C14** 172, **TFM4** 482; shrub to 1.5 m tall; mostly on limestone; P. Langkawi, Pk, Ph, Sl; endemic.

121.1.8 **Leea simplicifolia** Zoll. & Moritzi, **FMP1** 483, **FMI7** 766, **TFM4** 482; *Leea pauciflora* King, **FMP2** 483; shrub to 1 m tall; lowland forest; Kl, Pk.

## 122. LEGUMINOSAE

122.1.1 **Abrus precatorius** L., **FMP1** 558; vine; hedges and thickets often near the sea; widespread.

122.1.2a **Abrus pulchellus** Thwaites ssp. **mollis** (Hance) Verdc., **V37** 248; *Abrus mollis* Hance, **H35** 99; vine; on limestone; once from Gua Nangka, Kl.

122.1.2b **Abrus pulchellus** Thwaites ssp. **pulchellus**, **FMP1** 558; vine; hedges inland; Pk, Ph, Sl, NS.

- 122.2.1 **Acacia auriculiformis** A. Cunn. ex Benth., **FM11** 58; spreading tree to 28 m tall; waste places and secondary forest; throughout; naturalized from tropical Australia.
- 122.2.2 **Acacia concinna** (Willd.) DC., **FM11** 48; *Acacia pennata auct. non* (L.) Willd., **FMP1** 657; erect or scrambling shrub or woody climber; lowland forest margins; commoner in the north.
- 122.2.3 **Acacia farnesiana** (L.) Willd., **FMP1** 636, **FM11** 44; shrub or small tree to 4 m tall; open sandy places; Pn, Ph, Sl; naturalized from tropical America.
- 122.2.4 **Acacia kekapur** I.C. Nielsen, **FM11** 50; *Acacia pseudointsia auct. non* Miq., **FMP1** 657 in part; scandent shrub or woody climber; lowland forest, often in secondary forest; Sp.
- 122.2.5 **Acacia mangium** Willd., **FM11** 59; tree to 27 m tall; much planted for timber, but escaping with increasing regularity; native to Queensland and New Guinea.
- 122.2.6 **Acacia pseudointsia** Miq., **FMP1** 657 in part, **FM11** 55; straggling shrub or woody climber to 40 m long; lowland and hill forest to 1000 m, often along rivers.
- 122.3.1 **Adenanthera malayana** Kosterm., **FM11** 170; *Adenanthera bicolor auct. non* Moon, **FMP1** 654, **TFM1** 276; tree sometimes to 45 m tall; lowland and hill forest to 900 m, often planted; widespread but scattered.
- 122.3.2 **Adenanthera marina** I.C. Nielsen, **FM11** 172; shrub to 3 m tall; sandy beaches; Tg, Ph; endemic.
- 122.3.3 **Adenanthera pavonina** L., **FMP1** 653, **TFM1** 276, **FM11** 173; tree 25–40 m tall; lowland forest, usually near the sea; often planted; wild on East Coast and offshore islands.
- 122.4.1 **Aeschynomene americana** L., **R32** 165, **T05** 130; herb to 2 m tall; waste ground; Sp; naturalized from tropical America.
- 122.4.2 **Aeschynomene aspera** L., **FMP1** 602, **R32** 162; erect herb to 2 m tall; wet spots; Ml.
- 122.4.3 **Aeschynomene indica** L., **FMP1** 602, **R32** 163, **M47** 326; erect herb to 2.5 m tall; damp open places, waste ground; widespread, naturalized from South America.
- 122.5.1 **Aganope heptaphylla** (L.) Polhill, **P21** 268; *Derris sinuata* Benth. ex Thwaites, **FMP1** 594; *Derris heptaphylla* (L.) Merr., **K09** 34; scandent shrub; tidal riverbanks, coastal areas; widespread.

- 122.5.2 **Aganope thyrsoflora** (Benth.) Polhill, **P21** 268; *Derris thyrsoflora* (Benth.) Benth., **FMP1** 594; scandent shrub; common in open country, forest margins; widespread.
- 122.6.1 **Albizia lebbeck** (L.) Benth., **FMP1** 658, **TFM1** 279, **FM11** 75; tree to 30 m tall; open sandy places, also cultivated; Ps, Kd; naturalized from continental Asia or Africa.
- 122.6.2 **Albizia myriophylla** Benth., **FMP1** 658, **TFM1** 277, **FM11** 77; scandent shrub or woody climber; lowland forest margins and open sites; Ps, Kd, Kl, Tg, Pk, Ph.
- 122.6.3 **Albizia pedicellata** Baker *ex* Benth., **FMP1** 659, **TFM1** 279, **FM11** 78; tree to 33 m tall; lowland forest; Kd, Pn, Pk, Ph, Sl.
- 122.6.4 **Albizia retusa** Benth., **TFM1** 280, **FM11** 80; *Albizia littoralis* Teijsm. & Binn., **FMP1** 659; tree to 25 m tall; sandy beaches on offshore islands; Pn, P. Tioman, Sp.
- 122.6.5 **Albizia saponaria** (Lour.) Blume *ex* Miq., **TFM1** 280, **FM11** 82; tree to 15 m tall; secondary forest near the sea; only known from Kuala Selangor, Sl.
- 122.6.6 **Albizia splendens** Miq., **FM11** 83; *Pithecellobium confertum* Benth., **FMP1** 661; *Pithecellobium splendens* (Miq.) Corner, **TFM1** 287; big tree sometimes in excess of 30 m tall; lowland and hill forest to 700 m; scattered throughout.
- 122.7.1 **Alysicarpus vaginalis** (L.) DC., **FMP1** 604, **V10** 87; *Alysicarpus nummularifolius* (Willd.) DC., **FMP1** 604; prostrate or ascending herb to 60 cm tall; dry grassy places; throughout.
- 122.8.1 **Archidendron bubalinum** (Jack) I.C. Nielsen, **FM11** 96; *Pithecellobium bubalinum* (Jack) Benth., **FMP1** 661, **TFM1** 284; tree to 20 m tall; lowland forest, often in belukar; widespread.
- 122.8.2a **Archidendron clypearia** (Jack) I.C. Nielsen ssp. **clypearia** var. **casai** (Blanco) I.C. Nielsen, **FM11** 98; *Pithecellobium clypearia* (Jack) Benth., **FMP1** 664 in part, **TFM1** 284 in part; *Pithecellobium angulatum* Benth., **FMP1** 664 in part; shrub or tree to 22 m tall; montane forest.
- 122.8.2b **Archidendron clypearia** (Jack) I.C. Nielsen ssp. **clypearia** var. **clypearia**, **FM11** 98; *Pithecellobium clypearia* (Jack) Benth., **FMP1** 664 in part, **TFM1** 284 in part; *Pithecellobium angulatum* Benth., **FMP1** 664 in part; shrub or tree to 22 m tall; lowland forest to 1200 m; widespread.
- 122.8.2c **Archidendron clypearia** (Jack) I.C. Nielsen ssp. **clypearia** var. **sessiliflorum** (Merr.) I.C. Nielsen, **FM11** 99; *Pithecellobium cuneadenum* Kosterm., **TFM1** 285; shrub or tree to 22 m tall; lowland forest to 1200 m; only known from Fraser's Hill, Ph.

- 122.8.3 **Archidendron contortum** (Martelli) I.C. Nielsen, **FMi11** 100; *Pithecellobium contortum* Martelli, **FMP1** 664, **TFM1** 285; shrub or small tree to 10 m tall; common in secondary forest, usually near the sea; widespread.
- 122.8.4 **Archidendron ellipticum** (Blume) I.C. Nielsen, **FMi11** 100; *Pithecellobium ellipticum* (Blume) Hassk., **FMP1** 662, **TFM1** 286; tree to 20 m tall; lowland forest including belukar; widespread.
- 122.8.5 **Archidendron globosum** (Blume) I.C. Nielsen, **FMi11** 104; *Pithecellobium affine* Baker *ex* Benth., **FMP1** 662; *Pithecellobium globosum* (Blume) Kosterm., **TFM1** 286; tree to 30 m tall; lowland and hill forest; Pk southward.
- 122.8.6 **Archidendron jiringa** (Jack) I.C. Nielsen, **FMi11** 106; *Pithecellobium lobatum* Benth., **FMP1** 661; *Pithecellobium jiringa* (Jack) Prain, **TFM1** 286; shrub or tree to 21 m tall; lowland forests, often cultivated; widespread.
- 122.8.7 **Archidendron kunstleri** (Prain) I.C. Nielsen, **FMi11** 107; *Pithecellobium kunstleri* Prain, **FMP1** 662, **TFM1** 287; shrub or tree to 15 m tall; often swampy, lowland forest; Pk, Ph, Jh.
- 122.8.8 **Archidendron microcarpum** (Benth.) I.C. Nielsen, **FMi11** 109; *Pithecellobium microcarpum* Benth., **FMP1** 663, **TFM1** 287; small tree to 15 m tall; lowland, often secondary, forest; widespread.
- 122.8.9 **Archidendron pahangense** (Kosterm.) I.C. Nielsen, **FMi11** 110; *Pithecellobium pahangense* Kosterm., **TFM1** 287; tree to 25 m tall; lower montane forest at 600–1500 m; Ph, Sl; endemic.
- 122.9.1 **Bauhinia acuminata** L., **FMP1** 625, **D19** 393, **FMi12** 444; shrub about 3 m tall; doubtfully wild.
- 122.9.2 **Bauhinia andersonii** K. Larsen & S. Larsen, **L03** 330, **FMi12** 463; tendrilled woody climber; limestone hills; Kl, Ph; endemic.
- 122.9.3 **Bauhinia audax** (de Wit) G. Cusset, **C35** 278, **FMi12** 464; *Bauhinia calycina* (*non* Pierre) Ridl., **FMP1** 626; *Phanera audax* de Wit, **D19** 441; tendrilled woody climber; lowland forest; Sl, NS, Ml, Jh; endemic.
- 122.9.4 **Bauhinia bassacensis** Pierre *ex* Gagnep., **FMi12** 464; *Bauhinia bracteata auct. non* Grah. *ex* Baker, **FMP1** 634; *Phanera bassacensis* (Pierre *ex* Gagnep.) de Wit, **D19** 472; climber; lowland and hill forest; Kd, Kl.
- 122.9.5a **Bauhinia bidentata** Jack var. **bidentata**, **FMP1** 629, **FMi12** 508; *Bauhinia scortechinii* Prain, **FMP1** 631; *Phanera bidentata* (Jack) Benth., **D19** 495; large woody climber; montane forest at 900–1500 m; Pn, Pk, Ph, Sl, NS; endemic.
- 122.9.5b **Bauhinia bidentata** Jack var. **breviflora** (Ridl.) K. Larsen & S. Larsen, **L05** 663, **FMi12** 508; *Bauhinia breviflora* Ridl., **FMP5** 306; tendrillous climber; lowland forest; widespread; endemic variety.

- 122.9.5c **Bauhinia bidentata** Jack var. **cornifolia** (Baker) Bennet, **L05** 663, **FM12** 509; *Bauhinia cornifolia* Baker, **FMP1** 629; *Phanera bidentata* (Jack) Benth. ssp. *bicornuta* (Miq.) de Wit var. *cornifolia* (Baker) de Wit, **D19** 500; lofty climber; hill forest; Kl, Pn, Pk, Ph, Sl, NS; endemic variety.
- 122.9.5d **Bauhinia bidentata** Jack var. **fraseri** (de Wit) K. Larsen & S. Larsen, **L05** 663, **FM12** 509; *Phanera bidentata* (Jack) Benth. ssp. *bidentata* var. *fraseri* de Wit, **D19** 497; climber; lower montane forest 1200–1500 m; Gg Bujung Malacca, Pk, Fraser's Hill and Cameron Highlands, Ph; endemic variety.
- 122.9.5e **Bauhinia bidentata** Jack var. **monticola** (Ridl.) K. Larsen & S. Larsen, **L05** 663, **FM12** 510; *Bauhinia monticola* Ridl., **FMP1** 630; climber; hill forest at about 1500 m; Pk, Sl; endemic variety.
- 122.9.6 **Bauhinia cuprea** Ridl., **FMP1** 630, **FM12** 512; *Phanera cuprea* (Ridl.) de Wit, **D19** 503; climber; hill forest; only known from Gg Keladang, Pk; endemic.
- 122.9.7 **Bauhinia curtisii** Prain, **FMP1** 633, **FM12** 499; *Lasiobema curtisii* (Prain) de Wit, **D19** 424; woody climber; usually on limestone; P. Langkawi, Kd, Pk.
- 122.9.8 **Bauhinia decumbens** M.R. Hend., **H33** 99, **FM12** 513; *Phanera decumbens* (M.R. Hend.) de Wit, **D19** 503; scrambling shrub; on limestone; only known from type, Gg Senyum, Ph; endemic.
- 122.9.9a **Bauhinia ferruginea** Roxb. var. **ferruginea**, **FMP1** 628, **FM12** 475; *Bauhinia hullettii* Prain, **FMP1** 627; *Phanera ferruginea* (Roxb.) Benth., **D19** 453; large tendrillous climber; lowland and hill forest; Tg, Pn; Pk; Sl.
- 122.9.9b **Bauhinia ferruginea** Roxb. var. **griffithiana** (Benth.) Baker, **FM12** 475; *Bauhinia griffithiana* (Benth.) Prain, **FMP1** 628; *Phanera griffithiana* Benth., **D19** 455; climber or scandent shrub; lowland forest; Kd, Pn, Pk, Ph, Sl, Ml, Jh.
- 122.9.10 **Bauhinia finlaysoniana** (Grah. ex Benth.) Baker, **FMP1** 632, **FM12** 514; *Phanera finlaysoniana* Grah. ex Benth., **D19** 505; large climber; lowland and hill forest; Pn, Pk.
- 122.9.11 **Bauhinia flava** (de Wit) G. Cusset, **C35** 278, **FM12** 500; *Lasiobema flavum* de Wit, **D19** 425; woody climber; on limestone; Ps, P. Langkawi; endemic.
- 122.9.12 **Bauhinia franckii** K. Larsen & S. Larsen, **L04** 633, **FM12** 518; large-tendrilled liana; lower montane forest; only known from Fraser's Hill, Ph; endemic.
- 122.9.13 **Bauhinia glabrifolia** (Benth.) Baker var. **maritima** K. Larsen & S. Larsen; **FMP1** 634, **FM12** 476; *Phanera glabrifolia* Benth., **D19** 486; slender climber to 25 m long; hill forest; Pn, Pk.

- 122.9.14 **Bauhinia glauca** (Wall. ex Benth.) Benth., **FMP1** 629, **FM12** 478; *Bauhinia micrantha* Ridl., **FMP1** 633; *Phanera glauca* Wall. ex Benth., **D19** 489; liana or climbing shrub; on rocks or climbing in lowland forest; Ps, Kd, Pk, Ph, Sl.
- 122.9.15 **Bauhinia hirsuta** Weinm., **D19** 399, **FM12** 449; *Bauhinia mollissima* auct. non Wall. ex Prain, **FMP1** 626 in part; erect shrub 1–3 m tall; open country; north of Malaya.
- 122.9.16 **Bauhinia integrifolia** Roxb., **FMP1** 631, **FM12** 480; *Bauhinia flammifera* Ridl., **FMP1** 631; *Phanera integrifolia* (Roxb.) Benth., **D19** 478; large climber; lowlands to mountains at 1200 m; Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.
- 122.9.17 **Bauhinia kingii** Prain, **FMP1** 632, **FM12** 521; *Phanera bidentata* (Jack) Benth. ssp. *bidentata* var. *kingii* (Prain) de Wit, **D19** 498; slender climber; hill forest; Pk, Ph, Sl; endemic.
- 122.9.18 **Bauhinia kockiana** Korth., **FMP5** 306 ‘*kochiana*’, **FM12** 522; *Phanera kockiana* (Korth.) Benth., **D19** 521; tendrilled liana to 30 m tall; lowland and hill forest; Ph, Jh.
- 122.9.19 **Bauhinia lucida** (Miq.) Prain, **FMP1** 630, **FM12** 527; *Phanera lucida* Miq., **D19** 511; large climber or creeper to more than 30 m long; lowland forest; Pn, Pk.
- 122.9.20a **Bauhinia pottsii** G. Don var. **mollissima** (Wall. ex Prain) K. Larsen & S. Larsen, **FM12** 451; *Bauhinia mollissima* Wall. ex Prain, **FMP1** 626; climbing shrub; lowlands; West Coast south to Ml.
- 122.9.20b **Bauhinia pottsii** G. Don var. **pottsii**, **D19** 402, **FM12** 451; slender climbing shrub to 30 m long; forest margins and river banks in the lowlands; Kd, Pn, Pk.
- 122.9.20c **Bauhinia pottsii** G. Don var. **subsessilis** (Craib) de Wit, **D19** 406, **FM12** 452; climbing or straggling shrub; lowlands; Kangar, Ps.
- 122.9.21 **Bauhinia praesignis** Ridl., **FMP5** 305, **FM12** 489; *Phanera praesignis* (Ridl.) de Wit, **D19** 444; woody climber; lowland forest; Ph, NS; endemic.
- 122.9.22 **Bauhinia ridleyi** Prain, **FMP1** 628, **FM12** 490; *Phanera dasycarpa* Miq. var. *ridleyi* (Prain) de Wit, **D19** 450; strong shrubby climber to 8 m tall; lowland forest; Kd, Kl, Pn, Pk.
- 122.9.23 **Bauhinia semibifida** Roxb., **FMP1** 627, **FM12** 490; *Phanera semibifida* (Roxb.) Benth., **D19** 465; scandent shrub or liana; lowland and hill forest; Tg, Sp.

- 122.9.24 **Bauhinia strychnoidea** Prain *ex* King, **FMP1** 633, **FM12** 533; *Lasiobema strychnoideum* (Prain *ex* King) de Wit, **D19** 429; woody climber to 30 m long; often, but not exclusively, on limestone; Kl, Pk, Ph, Sl, NS; endemic.
- 122.9.25a **Bauhinia wrayi** Prain var. **cancellata** (Ridl.) K. Larsen & S. Larsen, **L05** 662, **FM12** 530; *Phanera wrayi* (Prain) de Wit var. *cancellata* (Ridl.) de Wit, **D19** 518; climbing shrub; hill forest; only known from Gg Angsi, NS; endemic variety.
- 122.9.25b **Bauhinia wrayi** Prain var. **wrayi**, **FMP1** 632, **FM12** 530; *Phanera wrayi* (Prain) de Wit var. *wrayi*, **D19** 517; woody creeper or straggling shrub; lowland forest; Pk.
- 122.9.26 **Bauhinia sp.**; *Lasiobema* sp. nov. A, **D19** 430; climber; Ps, P. Langkawi; endemic.
- 122.10.1 **Burkilliodendron album** (Ridl.) Sastry, **S02** 243; *Burkillia alba* Ridl., **FMP5** 305; shrub to 1 m tall; Pk; endemic.
- 122.11.1 **Caesalpinia andamanica** (Prain) Hattink, **H25** 15, **FM12** 539; *Mezoneuron kunstleri* Prain, **FMP1** 647; big prickly liana to 20 m tall; lowland forest margins to 500 m; Ps, Pk.
- 122.11.2 **Caesalpinia bonduc** (L.) Roxb., **FMP1** 649, **H25** 17, **FM12** 541; *Caesalpinia bonducella* (L.) Fleming, *nom. illeg.*, **FMP1** 649; prickly liana to 15 m tall; often coastal but also found inland; widespread.
- 122.11.3 **Caesalpinia crista** L., **H25** 20, **FM12** 542; *Caesalpinia nuga* (L.) Ait., **FMP1** 650; prickly liana to 15 m tall; sandy beaches, back mangrove and on limestone; widespread.
- 122.11.4 **Caesalpinia cucullata** Roxb., **H25** 22, **FM12** 543; prickly climber; P. Langkawi.
- 122.11.5 **Caesalpinia decapetala** (Roth) Alston, **H25** 24, **FM12** 543; *Caesalpinia sepiaria* Roxb., **FMP1** 650; prickly shrub or liana; hill forest margins; once from Penang Hill.
- 122.11.6 **Caesalpinia digyna** Rottler, **FMP1** 651, **H25** 28, **FM12** 544; prickly shrub or climber to 10 m; forest fringes and scrub; Ps, Kd. P. langkawi, Pn.
- 122.11.7 **Caesalpinia parviflora** Prain, **FMP1** 650, **H25** 45, **FM12** 549; climber or small tree; lowland forest; Pk, Sl, NS.
- 122.11.8 **Caesalpinia sumatrana** Roxb., **H25** 55, **FM12** 553, *Mezoneuron sumatranum* (Roxb.) Wight & Arn. *ex* Miq., **FMP1** 647; prickly liana climbing to 20 m high; lowland and hill forest margins; Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 122.11.9 **Caesalpinia tortuosa** Roxb., **FMP1** 651, **H25** 57, **FM12** 555; prickly climber or shrub to 10 m tall; lowland forest; Pn, Jh, Sp.

- 122.12.1 **Cajanus cajan** (L.) Millsp., **V04** 65; shrub to 4 m tall; naturalized from India.
- 122.12.2 **Cajanus crassus** (Prain ex King) van der Maesen, **V04** 105; *Atylosia crassa* Prain ex King, **FMP1** 564; twining climber; open country; Ps.
- 122.12.3 **Cajanus goensis** Dalzell, **V04** 117; climber; forest margins; P. Langkawi.
- 122.12.4 **Cajanus scarabaeoides** (L.) Thouars, **V04** 189; *Atylosia scarabaeoides* (L.) Benth., **FMP1** 564; slender twining vine; sandy shores; once from Pulau Besar, Ml.
- 122.13.1 **Callerya atropurpurea** (Wall.) Schot, **S08** 15; *Adinobotrys atropurpureus* (Wall.) Dunn, **FMP1** 587; *Millettia atropurpurea* (Wall.) Benth., **TFM1** 296; tree to 30 m tall; open country, sometimes planted; widespread.
- 122.13.2 **Callerya dasyphylla** (Miq.) Schot, **S08** 20; *Padbruggea dasyphylla* Miq., **FMP1** 587 'Padebruggea'; *Padbruggea maingayi* (Baker) Dunn, **FMP1** 587 'Padebruggea'; *Millettia dasyphylla* (Miq.) Boerl., **TFM1** 298; *Millettia maingayi* Baker, **TFM1** 298; large woody climber; lowland forest; scattered.
- 122.13.3 **Callerya eriantha** (Benth.) Schot, **S08** 21; *Adinobotrys erianthus* (Benth.) Dunn, **FMP1** 586; *Millettia eriantha* Benth., **TFM1** 298; liana; lowland forest; widespread.
- 122.14.1 **Calopogonium mucunoides** Desv., **C23** 662, **M28** 288; twining or trailing vine; waste places; Sp; naturalized from tropical America.
- 122.15.1 **Canavalia cathartica** Thouars, **S03** 158; *Canavalia turgida* Grah. ex A. Gray, **FMP1** 573; creeping and climbing vine; thickets near the sea; all coasts.
- 122.15.2 **Canavalia rosea** (Sw.) DC., **N11** 128, **L24** 101; *Canavalia obtusifolia* (Lam.) DC., **FMP1** 572; *Canavalia maritima* (Aubl.) Thouars, **S03** 163; trailing vine; sandy shores; all coasts.
- 122.16.1 **Cassia javanica** L. ssp. **nodosa** (Buch.-Ham. ex Roxb.) K. Larsen & S. Larsen, **FM12** 564; *Cassia nodosa* Buch.-Ham. ex Roxb., **FMP1** 616, **D18** 223, **TFM1** 247; tree to 25 m tall; lowland forest; middle of Malaya, Ph particularly.
- 122.17.1 **Centrosema plumieri** (Turp. ex Pers.) Benth., **FMP1** 615, **K09** 33, **M28** 304; twining vine; hedges, fences, waste ground; Sp; naturalized from tropical America.
- 122.17.2 **Centrosema pubescens** Benth., **C26** 662, **M28** 302; slender twining vine; roadsides, waste places; Sp; naturalized from tropical America.



- 122.18.1 **Chamaecrista leschenaultiana** (DC.) Degener, **FM12** 566; *Cassia leschenaultiana* DC., **FMP1** 619, **D18** 280; *Chamaecrista nictinans* (L.) Moench. ssp. *patellaria* (Collad.) Irwin & Barneby var. *glabrata* (Vogel) Irwin & Barneby, **I04** 822; herb, sometimes woody at the base, to 1.5 m tall; grassy spots, roadsides; widespread.
- 122.18.2 **Chamaecrista mimosoides** (L.) Greene, **FM12** 567; *Cassia mimosoides* L., **FMP1** 619, **D18** 283; herb, sometimes slightly woody, to 1 m tall; weed, grassy spots; widespread; naturalized from continental Asia.
- 122.19.1 **Christia vespertilionis** (L.f.) Bakh.f., **V10** 90, **R07** 177; herb or lax shrub with obdeltoide leaves; weed of dry places; ?Pn, Sl; very rare, possibly native.
- 122.20.1 **Clitoria laurifolia** Poir., **M28** 307; *Clitoria cajanifolia* (Presl) Benth., **FMP1** 569; shrub to 1.5 m tall; roadsides, waste ground; naturalized from tropical America.
- 122.20.2 **Clitorea ternatea** L., **FMP1** 569; vine; hedges and fences; widespread; naturalized - origins obscure.
- 122.21.1 **Codariocalyx gyroides** (Roxb. ex Link) Hassk., **O01** 43; *Desmodium gyroides* (Roxb. ex Link) DC., **FMP1** 611, **K55** 250; shrub to 3 m tall; lowlands; Pk.
- 122.22.1 **Crotalaria alata** Buch.-Ham. ex G. Don, **FMP1** 560, **D11** 200, **P22** 372; *Crotalaria bialata* Schrank., **K09** 33; subshrub to 60 cm tall; waste places, sandy beaches; Jh, Sp.
- 122.22.2 **Crotalaria albida** Heyne ex Roth, **FMP1** 561, **D11** 200; subshrub to 30 cm tall; roadsides; Sl.
- 122.22.3 **Crotalaria chinensis** L., **FMP1** 560, **D11** 202; herb to 60 cm tall; on rocks; Pk.
- 122.22.4 **Crotalaria cleomifolia** Welw. ex Bak., **D11** 203, **A14** 57, **P22** 203; much-branched shrub to 4 m tall; Cameron Highlands, Ph (? died out); naturalized from ?tropical Africa.
- 122.22.5 **Crotalaria cytisoides** Roxb. ex DC., **A14** 53 'cysticoides'; shrub to 2 m tall; waste places and plantations; naturalized from continental Asia.
- 122.22.6 **Crotalaria ferruginea** Grah. ex Benth., **FMP1** 560, **D11** 203; herb to 60 cm tall; open sandy places; Ph.
- 122.22.7 **Crotalaria goreensis** Guill. & Perr., **A14** 54, **P22** 104; shrub to 1 m tall; waste places, plantations; naturalized from tropical Africa.
- 122.22.8 **Crotalaria incana** L., **FMP1** 562, **D11** 205, **P22** 95; shrub to 120 cm tall; waste places; Pn, Sp; naturalized from tropical America.

- 122.22.9 **Crotalaria juncea** L., **D11** 206, **P22** 372; erect, laxly branched herb; waste places; Jh, Sp; naturalized from India.
- 122.22.10 **Crotalaria laburnifolia** L., **FMP1** 563, **D11** 206, **P22** 76; shrub to 120 cm tall; seashores, waste places; MI; ?naturalized from drier climates.
- 122.22.11 **Crotalaria micans** Link, **P22** 371; *Crotalaria anagyroides* Kunth, **A14** 56; shrub 2–4 m tall; waste places, plantations; naturalized from tropical America.
- 122.22.12 **Crotalaria pallida** Aiton, **P22** 184; *Crotalaria saltiana* (non Andr.) Prain ex King, **FMP1** 562; *Crotalaria mucronata* Desv., **D11** 209, **K09** 34; shrub to 100 cm tall; waste places; widespread; naturalized from Africa.
- 122.22.13 **Crotalaria quinquefolia** L., **FMP1** 563, **D11** 212; herb to 60 cm tall; waste ground; widespread.
- 122.22.14 **Crotalaria retusa** L., **FMP1** 561, **D11** 212, **P22** 272; shrub to 120 cm tall; seashores, waste places; widespread.
- 122.22.15 **Crotalaria semperflorens** Vent., **FMP1** 562, **D11** 213; herb to 1 m tall; roadside weed; widespread.
- 122.22.16 **Crotalaria sessiliflora** L., **FMP1** 560, **D11** 214; herb to 60 cm tall; open sandy places; Tg.
- 122.22.16 **Crotalaria spectabilis** Roth, **P22** 373; *Crotalaria sericea* (non Burm.f.) Retz., **FMP1** 561; herb 1–2 m tall; waste places; scattered; naturalized from Asia.
- 122.22.17 **Crotalaria uncinella** Lam., **FMP1** 562, **D11** 216, **P22** 166; procumbent herb or subshrub; sandy shores; mostly East Coast.
- 122.22.18 **Crotalaria verrucosa** L., **FMP1** 561, **D11** 561, **P22** 373; shrub to 60 cm tall; roadside weed; widespread.
- 122.22.19 **Crotalaria zanzibarica** Benth., **P22** 191; *Crotalaria usaramoensis* Baker f., **A13** 54; herb or shrub to 2 m tall; waste places, plantations; naturalized from East Africa.
- 122.23.1 **Crudia caudata** Prain, **FMP1** 644, **TFM1** 249, **FM12** 580; tree to 8 m tall; lowland forest, river banks; Tg, Jh.
- 122.23.2 **Crudia curtisii** Prain, **FMP1** 644, **TFM1** 249, **FM12** 581; *Crudia glauca* Prain, **FMP1** 644, **TFM1** 251; tree to 25 m tall; rare in lowland and hill forest; Tg, Pn, Pk, Ph, Sl, MI; endemic.
- 122.23.3 **Crudia evansii** Ridl., **FMP1** 645, **TFM1** 251, **FM12** 583; tree or liana; on limestone; Gg Senyum, Ph.

- 122.23.4 **Crudia gracilis** Prain, **FMP1** 646, **TFM1** 251, **FMI12** 583; *Crudia brevipes* Ridl., **FMP1** 645, **TFM1** 249; shrub to 2 m tall; swampy lowland forest; once each from Tasek Gelugor, Pn, Taiping, Pk, and Kota Tinggi, Jh.
- 122.23.5 **Crudia lanceolata** Ridl., **FMP1** 645, **TFM1** 251, **FMI12** 584; tree; sometimes on limestone; P. Langkawi, Sl, Jh.
- 122.23.6 **Crudia penduliflora** Ridl., **FMP1** 645, **TFM1** 251, **FMI12** 588; tree; one, possibly two, collection from Ml; endemic.
- 122.23.7 **Crudia scortechinii** Prain, **FMP1** 644, **TFM1** 252, **FMI12** 590; tree to 35 m tall; locally abundant in lowland forest; Pk; endemic.
- 122.23.8 **Crudia sparei** Whitmore, **TFM1** 252, **FMI12** 591; ?liana; only known from type, Sg Kriang, Pk; endemic.
- 122.23.9 **Crudia velutina** Ridl., **TFM1** 252, **FMI12** 594; tree to 25 m tall; lowland forest; Tg, Ph, Jh.
- 122.23.10 **Crudia wrayi** Prain, **FMP1** 646, **TFM1** 252, **FMI12** 596; tree to 6 m tall; swampy lowland forest; Kd, Pk, Jh.
- 122.23.11 **Crudia sp.**, **TFM1** 253; Rompin, Ph (KEP 80951).
- 122.24.1 **Cynometra iripa** Kostel., **K54** 21, **TFM1** 254, **FMI12** 603; *Cynometra ramiflora* L. var. *mimosoides* Baker, **FMP1** 635; shrub or small tree to 8 m tall; mainly coastal, but sometimes inland; Ps, Kd, Sl, Ml.
- 122.24.2 **Cynometra malaccensis** Meeuwen, **K54** 18, **TFM1** 254, **FMI12** 604; *Cynometra inaequifolia* (*non* A. Gray) Baker, **FMP1** 635 '*inaequalifolia*'; tree 20–40 m tall; lowland and hill forest to 600 m; Pk, Ph, Sl, Ml.
- 122.24.3 **Cynometra ramiflora** L., **FMP1** 635, **K54** 23, **TFM1** 254, **FMI12** 606; bushy-crowned tree to 25 m tall; riverbanks and swamps especially near the coast; widespread.
- 122.25.1 **Dalbergia candenatensis** (Dennst.) Prain, **T12** 45, **R32** 220; *Dalbergia torta* Grah. *ex* A. Gray, **FMP1** 591; scandent shrub or liana; coastal scrub and mangroves; widespread.
- 122.25.2 **Dalbergia curtisii** Prain, **FMP1** 589; scandent shrub; lowland and hill forest; Pn, Pk, Ml.
- 122.25.3 **Dalbergia hullettii** Prain, **FMP1** 590; shrub or treelet; open swampy ground; Sp; ?endemic.
- 122.25.4 **Dalbergia junghuhnii** Benth., **K09** 34; *Dalbergia scortechinii* Prain, **FMP1** 589; *Dalbergia stercoracea* Maingay, **FMP1** 589; scandent shrub; lowland forests; widespread.

- 122.25.5 **Dalbergia kunstleri** Prain *ex* King, **FMP1** 592; liana; riverbanks or on limestone; Pk (twice collected); endemic.
- 122.25.6 **Dalbergia menocides** Prain, **FMP1** 591; liana; Krian, Pk; endemic.
- 122.25.7 **Dalbergia parviflora** Roxb., **FMP1** 589; large liana; lowland forest margins; widespread.
- 122.25.8 **Dalbergia phyllanthoides** Blume, **FMP1** 590; scandent shrub; lowland forest; Pn, Pk.
- 122.25.9 **Dalbergia pinnata** (Lour.) Prain, **B02** 614, **L24** 62; *Dalbergia tamarindifolia* Roxb., **FMP1** 591; scandent shrub or small tree; open forest near water; Pn, Pk, Ph.
- 122.25.10 **Dalbergia pseudosissoo** Miq., **R31** 220, **L24** 62; *Dalbergia rostrata* (*non* Hassk.) Grah. *ex* Prain, **FMP1** 590; liana; lowland forest; Sp.
- 122.25.11 **Dalbergia velutina** Benth., **FMP1** 592; scandent shrub or liana; forest margins; widespread.
- 122.26.1 **Dendrolobium rugosum** (Prain) Schindl., **O01** 72; *Desmodium rugosum* Prain, **FMP1** 607, **C14** 167; shrub to 2.5 m tall; P. Langkawi.
- 122.26.2 **Dendrolobium umbellatum** (L.) Benth., **O01** 82; *Desmodium umbellatum* (L.) DC., **FMP1** 607, **K55** 263; shrub 2–3 m tall; muddy and sandy shores; all coasts.
- 122.27.1 **Derris affinis** Benth., **FMP1** 597; liana; forest; Pn, Pk.
- 122.27.2a **Derris amoena** Benth. var. **amoena**, **FMP1** 597; liana; lowland forests; Pk.
- 122.27.2b **Derris amoena** Benth. var. **maingayana** (Baker) Prain, **FMP1** 597; liana; lowland forests; widespread.
- 122.27.3a **Derris elegans** Grah. *ex* Benth. var. **elegans**, **FMP1** 596, **V39** 319; slender liana; hill and montane forest; Pk, Sl.
- 122.27.3b **Derris elegans** Grah. *ex* Benth. var. **vestita** (Baker) Prain, **FMP1** 597, **V39** 320; slender liana; hill forest; Pk, Ml.
- 122.27.4 **Derris elliptica** (Roxb.) Benth., **FMP1** 597, **V39** 320; scrambling shrub; on rocks, formerly often cultivated; Ps, Pn.
- 122.27.5 **Derris malaccensis** Prain, **FMP1** 598, **V39** 322; scandent shrub; lowland forests; widespread.
- 122.27.6 **Derris microphylla** (Miq.) B.D. Jacks., **R32** 234; *Derris dalbergioides* Baker, **FMP1** 595, **TFM1** 290; small tree to 12 m tall; secondary forest particularly in the mountains; NS northward.

- 122.27.7 **Derris scandens** (Roxb.) Benth., **FMP1** 595, **R32** 230; large high-climbing liana; lowland forest often near the sea; P. Langkawi, Pn, Sp.
- 122.27.8 **Derris trifoliata** Lour., **V39** 326, **R32** 232; *Derris uliginosa* (Roxb. ex Willd.) Benth., **FMP1** 595; slender liana; mangrove swamps; widespread.
- 122.27.9 **Derris yappii** Craib, **FMP1** 598; liana; once from Kuala Aring, KI; endemic.
- 122.28.1 **Desmanthus virgatus** (L.) Willd., **FM11** 213; shrub; waste ground; Sp; naturalized.
- 122.29.1 **Desmodium adscendens** (Sw.) DC., **K55** 245, **O01** 199; *Desmodium trifoliasrum* Miq., **FMP1** 606; prostrate shrub; swampy forest; Pk, Ph.
- 122.29.2 **Desmodium caudatum** (Thunb. ex Murr.) DC., **K55** 248, **O01** 184; *Desmodium laburnifolium* (Poir.) DC., **FMP1** 608; shrub; lowland forest.
- 122.29.3 **Desmodium gangeticum** (L.) DC., **FMP1** 610, **K55** 249, **O01** 184; slender shrub to 120 cm tall; weed of shady waste ground; widespread.
- 122.29.4a **Desmodium heterocarpon** (L.) DC. ssp. **heterocarpon**, **K55** 251, **O01** 210, **D44** 136; *Desmodium polycarpum* (Poir.) DC., **FMP1** 609; shrub to 1 m tall; waste ground and roadsides; widespread.
- 122.29.4b **Desmodium heterocarpon** (L.) DC. ssp. **ovalifolium** (Prain) H. Ohashi, **K55** 251, **O01** 210, **D45** 139; *Desmodium ovalifolium* Wall. ex Merr., **FMP1** 610; shrub to 1 m tall; waste ground and roadsides; widespread.
- 122.29.5 **Desmodium heterophyllum** (Willd.) DC., **FMP1** 606, **K55** 251, **O01** 239; trailing herb; common among short grass; widespread.
- 122.29.6 **Desmodium laxiflorum** DC., **K55** 252, **V39** 401, **O01** 101; prostrate shrub; waste ground; scattered.
- 122.29.7 **Desmodium laxum** DC., **FMP1** 608, **K55** 253, **O01** 134; wiry plant to 120 cm tall; hill and montane forest; Pk, Ph.
- 122.29.8 **Desmodium megaphyllum** Zoll., **FMP1** 608, **K55** 253, **O01** 111; bushy shrub to 2.5 m tall; lowland forest; once from Ulu Batang Padang, Pk.
- 122.29.9 **Desmodium obcordatum** (Miq.) Kurz, **T19** 127; *Hegnera obcordata* (Miq.) Schindl., **O01** 257; twining shrub; limestone, waste ground; Ps, Kd.
- 122.29.10 **Desmodium repandum** (Vahl) DC., **K55** 258, **O01** 160; *Desmodium scalpe* DC., **FMP1** 608; slender shrub to 1 m tall; damp lower montane forest; Cameron Highlands, Ph.
- 122.29.11 **Desmodium styracifolium** (Osbeck) Merr., **K55** 259, **O01** 224; *Desmodium capitatum* (Burm.f.) DC., **FMP1** 609; creeping shrub; open sandy places; widespread.

- 122.29.12 **Desmodium triflorum** (L.) DC., **FMP1** 606, **K55** 261, **O01** 245; creeping herb; common in lawns and waste places; throughout.
- 122.29.13 **Desmodium velutinum** (Willd.) DC., **K55** 264, **O01** 82; *Desmodium virgatum* Zoll. & Moritzi ex Prain, **FMP1** 611; *Desmodium lasiocarpum* (P. Beauv.) DC., **H35** 99; shrub to 120 cm tall; lowland forest and on limestone; Ps, Pk.
- 122.29.14 **Desmodium zonatum** Miq., **K55** 265, **O01** 107; *Desmodium ormocarpoides* (non DC.) Moritzi, **FMP1** 610; shrub to 60 cm tall; lowland forest; north of Peninsula.
- 122.30.1a **Dialium indum** L. var. **bursa** (de Wit) Rojo, **FMI12** 612; tree to 35 m; scattered in swampy lowland forest; widespread.
- 122.30.1b **Dialium indum** L. var. **indum**, **FMP1** 622, **TFM1** 259, **FMI12** 609; *Dialium laurinum* Baker, **FMP1** 622, **TFM1** 260; *Dialium patens* Baker, **FMP1** 622, **TFM1** 260; *Dialium marginatum* de Wit, **TFM1** 260; tree to 35 m tall; scattered in lowland forest; widespread.
- 122.30.2a **Dialium kunstleri** Prian var. **kunstleri**, **FMP1** 621, **TFM1** 259, **FMI12** 614; tree to 35 m tall; lowland forest; rare.
- 122.30.2b **Dialium kunstleri** Prain var. **trifoliatum** (de Wit) Rojo, **FMI12** 614; tree to 35 m tall; lowland forest.
- 122.30.3 **Dialium platysepalum** Baker, **FMP1** incl. var. *ambiguum* (Prain) Ridl., **TFM1** 261, **FMI12** 612; *Dialium kingii* Prain, **FMP1** 624, **TFM1** 259; *Dialium maingayi* Baker, **FMP1** 622, **TFM1** 260; *Dialium wallichii* Prain, **FMP1** 623, **TFM1** 261; tree to 35 m tall; scattered in the lowland forest; throughout.
- 122.30.4 **Dialium procerum** (Steenis) Steyaert, **TFM1** 261, **FMI12** 614; tree to 35 m tall; lowland forest; Pk, Ph, Sl, NS.
- 122.31.1 **Dioclea javanica** Benth., **FMP1** 571, **M28** 270; high-climbing liana; lowland forest; Pk, Sl.
- 122.31.2 **Dioclea reflexa** Hook.f., **FMP1** 571; liana; thickets and forest margins; widespread.
- 122.32.1 **Dunbaria nivea** Miq., **N06** 126; *Dunbaria scortechinii* Prain, **FMP1** 563; climber; forest margins; Ps, Pn, Pk, Ph.
- 122.33.1 **Entada rheedei** Spreng., **FMI11** 180; *Entada schefferi* Ridl., **FMP1** 654; huge woody climber reaching lengths of 120 m; lowland forest to 400 m, often near the sea; widespread.
- 122.33.2 **Entada spiralis** Ridl., **FMP1** 655, **FMI11** 180; woody climber to 25 m long; lowland forest to 540 m; south of the Peninsula.

- 122.34.1 **Eriosema chinense** Vogel, **FMP1** 565, **M28** 380; herb to 50 cm tall; rare in dry grassy places; Pk, Ml.
- 122.35.1 **Erythrina fusca** Lour., **TFM1** 291, **K72** 340; *Erythrina atosanguinea* Ridl., **FMP1** 578; *Erythrina ovalifolia* Roxb., **FMP1** 579; tree to 25 m tall; lowland forest; widespread, commoner in the north.
- 122.35.2 **Erythrina subumbrans** (Hassk.) Merr., **TFM1** 292, **K72** 355; *Erythrina lithosperma* (non Blume) Miq., **FMP1** 579; tree to 15 m tall; hill forest; Main Range.
- 122.35.3 **Erythrina variegata** L., **K72** 430; *Erythrina indica* Lam., **FMP1** 578; *Erythrina rostrata* Ridl., **FMP2** 580; *Erythrina orientalis* (L.) Murr., **TFM1** 292; tree to 15 m tall; rare in the wild on sandy beaches, widely cultivated; P. Langkawi, East Coast.
- 122.36.1 **Flemingia macrophylla** (Willd.) Merr., **M28** 362; *Flemingia congesta* Roxb., **FMP1** 566; shrub to 1.5 m tall; open dry places; widespread.
- 122.36.2 **Flemingia strobilifera** (L.) Roxb., **FMP1** 565, **M28** 360; shrub to 1.5 m tall; dry open spots, roadsides; widespread.
- 122.37.1 **Fordia albiflora** (Prain) Dasuki & Schot, **D06** 195; *Millettia albiflora* Prain, **FMP1** 584, **TFM1** 296; tree 6–30 m tall; lowland forest, often near rivers; Tg, Pk, Ph, Sl, Jh; endemic.
- 122.37.2 **Fordia bracteolata** Dasuki & Schot, **D06** 196; tree about 12 m tall; lowland forest; Pk, Sl; endemic.
- 122.37.3 **Fordia incredibilis** Whitmore, **TFM1** 293, **D06** 197; tree to 8 m tall; gregarious in lowland forest; only known from NW slopes of Gg Belumut. Jh; endemic.
- 122.37.4 **Fordia johorensis** Whitmore, **TFM1** 293, **B38** 251; tree to 6 m tall; lowland forest; Jh; endemic.
- 122.37.5 **Fordia lanceolata** Ridl., **FMP5** 304, **TFM1** 294, **B38** 253; tree to 10 m usually smaller; gregarious in hill forest 500–700 m; Sl, NS; endemic.
- 122.37.6 **Fordia ngii** Whitmore, **TFM1** 294, **D06** 199; tree 4–6 m tall; lowland and hill forest; Ph, Jh; endemic.
- 122.37.7 **Fordia ophirensis** Ridl., **FMP5** 304, **TFM1** 294, **B38** 254; small tree or shrub; hill forest 300–400 m; twice collected from Mt Ophir, Jh; endemic.
- 122.37.8 **Fordia pauciflora** Dunn, **FMP1** 586, **TFM1** 294, **B38** 254; slender treelet to 3 m tall; lowland forest; Pk.

- 122.37.9 **Fordia unifoliata** (Prain) Dasuki & Schot, **D06** 202; *Millettia unifoliata* Prain, **FMP1** 584, **TFM1** 298; tree to 10 m tall; hill slopes, often near the sea; Pk including P. Pangkor; endemic.
- 122.37.10 **Fordia sp. a**, **D06** 202; tree about 9 m high; once from Gg Panti, Jh; endemic.
- 122.38.1 **Geissaspis cristata** Wight & Arn., **FMP1** 600; trailing herb; open sandy places, rice-fields; Ps, Kd.
- 122.39.1 **Indigofera galeoides** DC., **D09** 118; *Indigofera finlaysoniana* Grah. ex Ridl., **FMP1** 581; shrub 1–4 m tall; roadsides and thickets; sporadic.
- 122.39.2 **Indigofera hirsuta** L., **FMP1** 580, **D09** 120; shrub to 1.5 m tall; sandy seashores; fairly widespread.
- 122.39.3 **Indigofera spicata** Forssk., **D09** 132; shrublet 40–75 cm tall; grassy places; naturalized from drier parts of Asia.
- 122.39.4 **Indigofera suffruticosa** Mill., **D09** 134; shrub to 2.5 m tall; waste places; naturalized from tropical America.
- 122.39.5 **Indigofera tinctoria** L., **FMP1** 581, **D09** 136; shrub 60–100 cm tall; waste places; escape, naturalized.
- 122.39.6 **Indigofera zollingeriana** Miq., **D09** 142; shrub or small tree; sandy beaches.
- 122.40.1 **Inocarpus fagiferus** (Parkinson) Fosberg, **TFM1** 295; small, multi-stemmed tree; brackish swamp forest; only known from Sg Sedili, Jh.
- 122.41.1 **Intsia bijuga** (Colebr.) Kuntze, **TFM1** 262, **FM12** 623; *Afzelia bijuga* (Colebr.) A. Gray, **FMP1** 639; *Afzelia retusa* Kurz, **FMP1** 639; tree to 25 m tall; coasts and tidal reaches of rivers; throughout.
- 122.41.2 **Intsia palembanica** Miq., **TFM1** 262, **FM12** 62; *Afzelia palembanica* (Miq.) Baker, **FMP1** 640; large-butressed tree to 55 m tall; common in lowland forests; throughout.
- 122.42.1 **Koompassia excelsa** (Becc.) Taub., **FMP1** 620, **TFM1** 264, **FM12** 632; very tall tree reaching over 70 m in some instances; lowland forest; Ph and SI northward.
- 122.42.2 **Koompassia malaccensis** Maing. ex Benth., **FMP1** 620, **TFM1** 265, **FM12** 634; big tree to 60 m tall; common in lowland and hill forests; throughout.
- 122.43.1 **Kunstleria curtisii** Prain, **FMP1** 599 incl. var. *laxiflora* Prain, **R12** 469; stout liana; lowland forest; Pn, Pk; endemic.
- 122.43.2 **Kunstleria forbesii** Prain, **FMP1** 600, **R12** 471; liana to 10 m long; lowland forest; Pk.



- 122.43.3 **Kunstleria kingii** Prain, **FMP1** 599, **R12** 476; stout liana to 30 m long; hill forest; Pk; endemic.
- 122.43.4 **Kunstleria ridleyi** Prain, **FMP1** 600, **R12** 480; *Kunstleria derryi* Prain, **FMP1** 600; big liana; lowland forest; MI, Sp.
- 122.44.1 **Leucaena leucocephala** (Lam.) de Wit, **FMI11** 182; *Leucaena glauca* Benth., **FMP1** 655; shrub or small tree to 10 m tall; widely planted, establishing in waste ground; widespread; naturalized from tropical America.
- 122.45.1 **Leucostegane latistipulata** (Prain) Prain, **FMP1** 643, **TFM1** 266, **FM12** 636; tree to 6 m tall; gregarious in understorey of hill forest; only known from Lumut, Pk.
- 122.46.1 **Macroptilium lathyroides** (L.) Urb.; **M28** 343; *Phaseolus semirectus* L., **FMP1** 567; shrub or climber; waste ground; Sp and probably elsewhere; naturalized from tropical America.
- 122.47.1a **Maniltoa polyandra** (Roxb.) Harms var. **kurzii** (Prain) Meeuwen, **K54** 44, **TFM1** 267, **FM12** 645; *Cynometra polyandra* Roxb. var. *kurzii* Prain, **FMP1** 636; large tree; hill forest; Pn; poorly known.
- 122.47.1b **Maniltoa polyandra** (Roxb.) Harms var. **polyandra**, **FM12** 645; large tree; hill forest; Pn; poorly known.
- 122.48.1 **Millettia decipiens** Prain, **FMP1** 585, **TFM1** 297; tree; lowland riverbanks; once from Kuala Dipong, Pk.
- 122.48.2 **Millettia galliflagrans** Whitmore, **TFM1** 297; tree to 4 m tall; swampy lowland forest; only known from Kluang F.R., Jh; endemic.
- 122.48.3 **Millettia hemsleyana** Prain, **FMP1** 585, **TFM1** 297; tree; often leaning over lowland rivers; widespread, common in K1 and Ph.
- 122.48.4 **Millettia pterocarpa** Dunn, **FMP1** 585, **TFM1** 298; tree; lowland forest; thrice collected from Pk; endemic.
- 122.48.5 **Millettia sericea** (Vent.) Benth., **FMP1** 584, **TFM1** 298; liana; common in lowland forest; widespread.
- 122.48.6 **Millettia sp.**, **B38** 257; *Fordia filipes* (non Dunn) Whitmore, **TFM1** 293.
- 122.48.7 **Millettia sp. a**, **TFM1** 298; tree to 4 m tall; MI.
- 122.48.8 **Millettia sp. b**, **TFM1** 299; small tree; Ulu Endau, Jh.
- 122.49.1 **Mimosa bimucronata** (DC.) Kuntze, **FM11** 184; *Mimosa sepriaria* Benth., **FMP1** 656; shrub or tree to 8 m tall; roadsides, waste ground; Sp; naturalized from South America.

- 122.49.2 **Mimosa diplotricha** C. Wright *ex* Sauvalle, **FMi11** 184; *Mimosa invis*a [non Mart. *ex* Colla] Mart., **M47** 328; straggling or scrambling shrub; waste ground, plantation weed; widespread; naturalized from tropical America.
- 122.49.3 **Mimosa pigra** L., **FMi11** 185; spreading and arching shrub to 4 m tall; waste places, roadsides; widespread; naturalized from tropical America.
- 122.49.4a **Mimosa pudica** L. var. **hispida** Brenan, **FMP1** 656 in part, **FMi11** 186; erect or prostrate herb or subshrub; waste places, weed of grassland, to 1000 m; throughout; naturalized from South America.
- 122.49.4b **Mimosa pudica** L. var. **tetranda** (Humb. & Bonpl. *ex* Willd.) DC., **FMP1** 656 in part, **FMi11** 186; erect or prostrate herb or subshrub; waste places, weed of grassland, to 1000 m; throughout; naturalized from South America.
- 122.49.4c **Mimosa pudica** L. var. **unijuga** (Duchass. & Walp.) Griseb., **FMP1** 656 in part, **FMi11** 186; erect or prostrate herb or subshrub; waste places, weed of grassland; throughout; naturalized from South America.
- 122.49.5 **Mimosa quadrivalvis** L. var. **leptocarpa** (DC.) Barneby, **B06** 50; procumbent shrub to 50 cm tall; waste places, roadsides; Kd, Pn, Pk; naturalized from South America.
- 122.50.1 **Mucuna acuminata** Grah. *ex* Baker, **FMP1** 577, **W18** 214; slender climber; lowland forest, often near rivers; Pn, Pk, Sl, Sp.
- 122.50.2 **Mucuna biplicata** Teijsm. & Binn. *ex* Kurz, **FMP1** 576, **W18** 228; large climber; lowland forest margins; P, Langkawi, Kl, Pn, Pk, Ph, Sl, Jh.
- 122.50.3 **Mucuna gigantea** (Willd.) DC., **FMP1** 577, **W18** 21; large sprawling climber; thickets, often near the sea; Kd, Pk, ?Ph, Ml, Jh, Sp.
- 122.50.4 **Mucuna pruriens** (L.) DC., **FMP1** 577, **W18** 235; long slender climber; forest margins; Ps, Pk.
- 122.50.5 **Mucuna stenoplax** Wilmot-Dear, **W18** 218; climber; lowland forest; only recorded from Kaki Bukit, Ps.
- 122.51.1 **Neptunia oleracea** Lour., **FMP1** 653, **FMi11** 189; aquatic floating herb to 2.5 m long; pools and ditches in the lowlands; widespread.
- 122.51.2 **Neptunia plena** (L.) Benth., **S59** 188, **FMi11** 214; herb or subshrub; waste places, plantations; Jh, Sp; naturalized from tropical America.
- 122.52.1 **Ormocarpum cochinchinense** (Lour.) Merr., **R32** 169; *Ormocarpum glabrum* Teijsm. & Binn., **S23** 32; shrub or small tree to 7 m tall; Sp.
- 122.53.1 **Ormosia bancana** (Miq.) Merr., **K54** 229, **TFM1** 300; *Ormosia parvifolia* Baker, **FMP1** 614; tree to 20 m tall; lowland forest, often near rivers or the sea; P, Lankawi, P, Pangkor, Ph, Ml, Sp.

- 122.53.2 **Ormosia gracilis** Prain, **FMP1** 613, **K54** 230, **TFM1** 301; tree to 15 m tall; lower montane forest; a few collections from Kd, Pk and NS; endemic.
- 122.53.3 **Ormosia grandistipulata** Whitmore, **TFM1** 301; *Ormosia* sp., **K54** 236; small tree to 4 m tall; Tg.
- 122.53.4 **Ormosia macrodisca** Baker, **FMP1** 613, **K54** 230, **TFM1** 301; tree to 30 m tall; lowland forest; once each from Sl, Ml and Sp.
- 122.53.5 **Ormosia penangensis** Ridl., **FMP1** 613, **K54** 233, **TFM1** 301; tree to 25 m tall; hill forest; twice from Penang Hill.
- 122.53.6 **Ormosia polita** Prain, **K54** 233, **TFM1** 301; *Ormosia nitida* (non Vogel) Prain, **FMP1** 613; tree to 15 m tall; lowland and hill forest; Kd, Pk, Sl, NS; endemic.
- 122.53.7 **Ormosia scandens** Prain, **FMP1** 612, **K54** 236, **TFM1** 299; woody climber; hill forest; only known from type, Larut, Pk; endemic.
- 122.53.8 **Ormosia sumatrana** (Miq.) Prain, **FMP1** 614, **K54** 234, **TFM1** 301; *Ormosia microsperma* Baker, **FMP1** 614; tree to 20 m tall; lowland forest; Kd, Kl, Ph, Jh, Sp.
- 122.53.9 **Ormosia venosa** Baker, **FMP1** 615, **K54** 236, **TFM1** 302; tree to 25 m tall; hill forest; few collections from Tg, Sl, Ml.
- 122.54.1 **Paraserianthes falcataria** (L.) I.C. Nielsen, **FMi11** 151; *Albizia moluccana* Miq., **FMP1** 659; *Albizia falcata* auct. non (L.) Backer, **TFM1** 277; tree to 40 m tall or greater; secondary forest and waste ground; Sp and probably elsewhere; naturalized from East Malesia.
- 122.55.1 **Parkia singularis** Miq., **TFM1** 281, **FMi11** 197; tree to 30 m or more tall; lowland and hill forest to 500 m; Tg, Pk, Ph, Sl, Jh.
- 122.55.2 **Parkia speciosa** Hassk., **FMP1** 652, **TFM1** 281, **FMi11** 198; tree to 35 m tall, sometimes bigger; lowland and hill forest to 900 m, often planted; widespread.
- 122.55.3 **Parkia sumatrana** Miq. ssp. **streptocarpa** (Hance) H.C. Hopkins, **FMi11** 200; *Parkia sumatrana* Miq., **TFM1** 282; tree to 35 m tall; rare in lowland and hill forest; Kd, Pk.
- 122.55.4 **Parkia timoriana** (DC.) Merr., **FMi11** 201; *Parkia roxburghii* G. Don, **FMP1** 652; *Parkia javanica* auct. vix (Lam.) Merr., **TFM1** 281; very big tree to 50 m tall; lowland and hill forest to 600 m, sometimes planted; widespread.
- 122.56.1 **Peltophorum dasyrhachis** (Miq.) Kurz, **FMP1** 647, **TFM1** 267, **FMi12** 650; tree to 20 m tall; lowland primary and secondary forest; West Coast, Ml northward.

- 122.56.2 **Peltophorum pterocarpum** (DC.) K. Heyne, **TFM1** 268, **FM12** 651; *Peltophorum ferrugineum* (Decne.) Benth., **FMP1** 646; tree to 20 m tall; rocky and sandy shores, widely planted inland; all coasts.
- 122.57.1 **Pericopsis mooniana** Thwaites, **TFM1** 302; tree; near the sea; once each from P. Langkawi, Kd mainland and ?Ph.
- 122.58.1 **Phylacium bracteosum** Benn., **FMP1** 604, **B35** 490; twining vine; forest margins; once from Gg Pondok, Pk.
- 122.59.1 **Phyllodium pulchellum** (L.) Desv., **O01** 276; *Desmodium pulchellum* (L.) Benth., **FMP1** 607, **K55** 256; shrub to 2 m tall; open sandy places; widespread.
- 122.60.1a **Pongamia pinnata** (L.) Pierre var. **pinnata**, **TFM1** 303; *Pongamia glabra* Vent. var. *typica*, **FMP1** 593; small tree sometimes to 20 m tall; sandy and rocky shores; all coasts.
- 122.60.1b **Pongamia pinnata** (L.) Pierre var. **xerocarpa** (Hassk.) Alston, **TFM1** 303; *Pongamia glabra* Vent. var. *xerocarpa* (Hassk.) Prain, **FMP1** 593; small tree sometimes to 20 m tall; inland, often along rivers; Pk, Ph, Ml, Sp.
- 122.61.1 **Pseudarthria viscida** (L.) Wight & Arn., **V10** 165, **S22** 32; herb; Sp; naturalized from drier parts of Asia.
- 122.62.1 **Pterocarpus indicus** Willd., **FMP1** 593, **TFM1** 303; tree to 30 m tall; coastal, along tidal rivers, extensively planted; Ph, Jh (wild localities).
- 122.63.1 **Pterolobium densiflorum** Prain, **FMP1** 648, **FM12** 657; prickly liana; lowland forest; Pn.
- 122.63.2 **Pterolobium microphyllum** Miq., **S59** 188, **FM12** 659; liana or scrambling shrub; hill forest; Bt Lagong, Sl.
- 122.64.1a **Pueraria phaseoloides** (Roxb.) Benth. var. **javanica** (Benth.) Baker, **V05** 75; *Pueraria phaseoloides* (Roxb.) Benth., **FMP1** 571 in part; creeping or climbing vine; roadsides, waste places, forest margins; widespread.
- 122.64.1b **Pueraria phaseoloides** (Roxb.) Benth. var. **phaseoloides**, **V05** 78; *Pueraria phaseoloides* (Roxb.) Benth., **FMP1** 571 in part; creeping or climbing vine; roadsides, waste places, forest margins; widespread.
- 122.65.1 **Rothia indica** (L.) Druce, **R32** 184; *Rothia trifoliata* (Roth) Pers., **FMP1** 559; herb to 20 cm tall; sandy shores and fields; Pn.
- 122.66.1 **Saraca cauliflora** Baker, **FMP1** 641, **FM12** 671 in synonymy; *Saraca thaipingensis* Cantley ex Prain, **FMP1** 640, **Z02** 416, **TFM1** 270, **FM12** 671; *Saraca declinata auct. non* (Jack) Miq., **FMP1** 641; tree to 15 m tall; lowland and hill forest, often riverine; Ml and Ph northward.

- 122.66.2 **Saraca declinata** (Jack) Miq., **Z02** 419, **TFM1** 269, **FMi12** 665; *Saraca macroptera* Miq., **FMP1** 642; *Saraca palembanica* (Miq.) Baker, **FMP1** 642; *Saraca triandra auct. non* (Roxb.) Baker, **FMP1** 642; tree to 15 m tall; common in lowland and hill forest, often riverine; widespread.
- 122.66.3 **Saraca indica** L., **Z02** 422, **TFM1** 269, **FMi12** 668; *Saraca bijuga* Prain, **FMP1** 641; *Saraca kunstleri* Prain, **FMP1** 641; tree to 15 m tall; lowland and hill forest; Kd, Pn, Kl, Pk, Ph, Jh.
- 122.67.1 **Senna alata** (L.) Roxb., **I04** 460, **FMi12** 675; *Cassia alata* L., **FMP1** 619, **D18** 231; shrub to 5 m tall; common in damp waste ground; throughout; naturalized from tropical America.
- 122.67.2 **Senna hirsuta** (L.) Irwin & Barneby, **I04** 425, **FMi12** 679; *Cassia hirsuta* L., **FMP1** 618, **D18** 250; foetid herb, sometimes shrubby, to 2.5 m tall; waste ground; sporadic; naturalized from tropical America.
- 122.67.3 **Senna obtusifolia** (L.) Irwin & Barneby, **I04** 252, **FMi12** 681; *Cassia obtusifolia* L., **FMP1** 618, **D18** 254; herb, sometimes shrubby, to 2 m tall; waste ground; widespread; naturalized from tropical America.
- 122.67.4 **Senna occidentalis** (L.) Link, **I04** 436, **FMi12** 681; *Cassia occidentalis* L., **FMP1** 618, **D18** 256; herb, sometimes shrubby, to 3 m tall; waste ground; widespread; naturalized from tropical America.
- 122.67.5 **Senna siamea** (Lam.) Irwin & Barneby, **I04** 98, **FMi12** 685; *Cassia siamea* Lam., **FMP1** 617, **D18** 263, **TFM1** 247; tree to 20 m tall; waste ground around villages, much cultivated; possibly native.
- 122.67.6 **Senna sulfurea** (Collad.) Irwin & Barneby, **I04** 78, **FMi12** 687; *Cassia glauca* Lam., **FMP1** 616; *Cassia surattensis* Burm.f., **D18** 269; shrub or small tree to 7 m tall; waste places; to India and Burma.
- 122.67.7 **Senna timoriensis** (DC.) Irwin & Barneby, **I04** 98, **FMi12** 689; *Cassia timoriensis* DC., **FMP1** 617; tree to 8 m tall; lowlands, often on limestone; Kd, P. Langkawi, Kl, Pk, Sl.
- 122.67.8 **Senna tora** (L.) Roxb., **FMi12** 689; *Cassia tora* L., **FMP1** 618, **D18** 276; foetid herb to 120 cm tall; weed of cultivation; widespread; naturalized from tropical America.
- 122.68.1 **Serianthes grandiflora** Benth., **FMP1** 657, **FMi11** 160; *Serianthes dilmyi* Fosberg, **TFM1** 289; tree to 35 m tall, usually smaller; sea shores, commoner on offshore islands; Ml, Jh, Sp.
- 122.69.1 **Sesbania cannabina** (Retz.) Poir., **FMP1** 582, **V39** 360; herb to 2 m tall; damp open spots; Ps, Pk, Sp; naturalized - origin unclear, probably Australasia.

- 122.69.2      **Sesbania javanica** Miq., **V39** 362; *Sesbania paludosa* (Roxb.) Prain, **FMP1** 582; herb to 4 m tall; open marshy ground; Kd.
- 122.70.1      **Sindora coriacea** (Baker) Maingay *ex* Prain, **FMP1** 539, **TFM1** 271, **FMi12** 697; tree to 30 m tall; lowland forest; widespread.
- 122.70.2      **Sindora echinocalyx** (Benth.) Prain, **TFM1** 272, **FMi12** 698; tree to 30 m or more tall; hill forest to 700 m; widespread.
- 122.70.3      **Sindora siamensis** Teijsm. *ex* Miq., **FMP1** 638, **TFM1** 272, **FMi12** 703; tree to 30 m tall; hill forest; recorded once from Kl.
- 122.70.4      **Sindora velutina** Baker, **FMP1** 638, **TFM1** 273, **FMi12** 707; tree to 30 m tall; lowland and hill forest; widespread but scattered.
- 122.70.5      **Sindora wallichii** Grah. *ex* Benth., **FMP1** 637, **TFM1** 273, **FMi12** 708; *Sindora intermedia* (Baker) Prain, **FMP1** 638; tree to 30 m tall; lowland and hill forest; widespread but absent from north-west.
- 122.71.1      **Smithia sensitiva** Aiton, **FMP1** 601, **V39** 370, **R32** 171; diffuse spreading herb; open sandy places; Ps, Pk.
- 122.72.1      **Sophora tomentosa** L., **FMP1** 612; silvery shrub to 5 m tall; sea shores; common on the East Coast.
- 122.73.1      **Spatholobus acuminatus** Benth., **FMP1** 575, **R13** 161; stout woody climber; lowland forest margins; Pn.
- 122.73.2      **Spatholobus auritus** Ridd.-Num., **R13** 160; liana; forest; only known from type, Pn; endemic.
- 122.73.3      **Spatholobus bracteolatus** Prain *ex* King, **FMP1** 574, **R13** 167; liana; hill forest; Pn, ?Pk; endemic.
- 122.73.4      **Spatholobus dubius** Prain, **FMP1** 575, **R13** 169; high-climbing liana; lowland and hill forest; Pn, Pk; endemic.
- 122.73.5a      **Spatholobus ferrugineus** (Zoll. & Moritzi) Benth. var. **ferrugineus**, **FMP1** 574, **R13** 170; high-climbing liana; lowland and hill forest to 1000 m; widespread.
- 122.73.5b      **Spatholobus ferrugineus** (Zoll. & Moritzi) Benth. var. **sericophyllus** Ridl., **FMP1** 574, **R13** 172; high-climbing liana; lowland forest; Sp; endemic variety.
- 122.73.6      **Spatholobus gyrocarpus** Benth., **FMP1** 574, **R13** 172; liana to 45 m long; lowland forest; north of Malaya.
- 122.73.7      **Spatholobus harmandii** Gagnep., **R13** 173; *Spatholobus compar* Craib, **H33** 99; liana to 15 m high; forest margins; north of Malaya.

- 122.73.8 **Spatholobus macropterus** Miq., **R13** 178; liana reaching to 35 m; lowlands and hills; north of Malaya (3 records).
- 122.73.9 **Spatholobus maingayi** Prain *ex* King, **FMP1** 575, **R13** 180; liana climbing to 25 m; lowland forest margins; more frequent in the south.
- 122.73.10 **Spatholobus ridleyi** Prain *ex* King, **FMP1** 575, **R13** 194; large liana exceeding 30 m in length; lowland forest; twice collected in Sp; endemic.
- 122.74.1 **Stylosanthes guianensis** (Aubl.) Sw., **V39** 373, **C26** 662, **R32** 179; herb to 1.5 m tall; waste ground; Sp; naturalized from tropical America.
- 122.74.2 **Stylosanthes humilis** Kunth, **V39** 373, **R32** 180; *Stylosanthes sundaica* Taub., **K09** 39; prostrate or erect herb; waste ground; Sp; naturalized from tropical America.
- 122.75.1 **Sympetalandra hildebrandii** Steenis, **V19** 166, **FM12** 711; *Sympetalandra borneensis* *auct. non* Stapf, **TFM1** 274 in part; tree to 15 m tall; hill forest; Ph, Jh; endemic.
- 122.75.2 **Sympetalandra unijuga** (Airy Shaw) Steenis, **FM12** 166; *Sympetalandra borneensis* *auct. non* Stapf, **TFM1** 274 in part; tree to 30 m tall; hill forest; Jh.
- 122.76.1 **Tadehagi triquetrum** (L.) H. Ohashi, **O01** 290; *Desmodium triquetrum* (L.) DC., **FMP1** 611, **K55** 262; shrub about 1 m tall; lowland forest and other shady places; north of the Peninsula.
- 122.77.1 **Tephrosia candida** (Roxb.) DC., **B22** 445; shrub 1–3.5 m tall; forest margins and waste ground; sporadic; naturalized from India.
- 122.77.2 **Tephrosia noctiflora** Bojer *ex* Baker, **B22** 458; *Tephrosia subamoena* Prain, *nom. inval.*, **FMP1** 581; herb or shrub to 7.5 m tall; waste ground; widespread.
- 122.77.3 **Tephrosia purpurea** (L.) Pers., **FMP1** 582, **B22** 464; herb or small shrub; waste ground; scattered throughout; naturalized from dryer parts of Asia.
- 122.78.1 **Teramnus labialis** (L.f.) Spreng., **FMP1** 570, **M28** 296; twining vine; open rocky places; Ps, Pn.
- 122.79.1 **Uria crinita** (L.) Desv. *ex* DC., **FMP1** 602; shrub to 1 m tall; open ground, waste places; widespread.
- 122.79.2 **Uria lagopodioides** (L.) Desv. *ex* DC., **FMP1** 603, **V39** 415, **M47** 332; creeping shrub; open sandy places; Ph, Sl northward.
- 122.79.3 **Uria picta** (Jacq.) Desv. *ex* DC., **FMP1** 603, **V39** 416; sparsely-branched shrub to 2 m tall; open sandy spots; Pn.

- 122.80.1 **Vigna adenantha** (G. Mey.) Maréchal & al., **M11** 202, **M28** 340; *Phaseolus adenanthus* G. Mey., **FMP1** 567; twining vine; open country.
- 122.80.2 **Vigna hirtella** Ridl., **FMP1** 568; ?climber; once from the bank of Sg Chaning, Kl.
- 122.80.3 **Vigna marina** (Burm.) Merr.; **M28** 324; *Vigna retusa* Walp., **FMP1** 568; trailing or twining vine; common on sandy shores; all coasts.
- 122.80.4 **Vigna malayana** M.R. Hend., **H35** 99; *Vigna parviflora* (non Baker) Ridl., **FMP1** 569; trailing vine; open sandy places; Pk, Ph, NS; endemic.
- 122.80.5 **Vigna pilosa** (Willd.) Baker, **FMP1** 568, **V25** 381; *Dysolobium pilosum* (Willd.) Maréchal & al.; **L24** 107; hairy twining vine; once from P. Langkawi.
- 122.80.6a **Vigna umbellata** (Thunb.) Ohwi & H. Ohashi var. **gracilis** (Prain) Maréchal & al.; **M28** 337, **N06** 192; *Phaseolus calcaratus* Roxb. var. *gracilis* Prain, **FMP1** 567; twining vine; open places, forest margins, waste ground; widespread.
- 122.80.6b **Vigna umbellata** (Thunb.) Ohwi & H. Ohashi var. **umbellata**; **M28** 337, **N06** 192; *Phaseolus calcaratus* Roxb., **FMP1** 566 as var. *typica*; twining vine; open places, forest margins, waste ground; widespread.
- 122.81.1 **Zornia diphylla** (L.) Pers., **FMP1** 601; diffuse prostrate herb; open sandy places; Pn, Sp.

## 123. LENTIBULARIACEAE

- 123.1.1 **Utricularia aurea** Lour., **FMi8** 296, **T07** 623; *Utricularia flexuosa* Vahl, **FMP2** 491; aquatic herb with emergent inflorescence to 25 cm long; ponds and ditches; widespread.
- 123.1.2 **Utricularia bifida** L., **FMP2** 492, **FMi8** 281, **T07** 307; herb to 20 cm tall; damp sandy places; widespread.
- 123.1.3 **Utricularia caerulea** L., **FMi8** 287, **T07** 187; *Utricularia albina* Ridl., **FMP2** 493; *Utricularia ophirensis* Ridl., **FMP2** 495; herb to 30 cm tall; damp sandy spots; widespread.
- 123.1.4 **Utricularia gibba** L., **T07** 572; *Utricularia exoleta* R.Br., **FMP2** 491, **FMi8** 294; aquatic herb, emergent inflorescence to 20 cm tall; ponds and ditches; widespread.
- 123.1.5 **Utricularia involvens** Ridl., **FMP2** 493, **FMi8** 279, **T07** 314; herb with twining inflorescences to 60 cm long; damp grassy places; Gg Jerai, Kd.



- 123.1.6 **Utricularia limosa** R.Br., **FMi8** 292, **T07** 550; *Utricularia verticillata* Benj., **FMP2** 493; semi-aquatic herb to 35 cm tall; open wet places; P. Langkawi, Ph, Ml.
- 123.1.7 **Utricularia minutissima** Vahl, **FMP2** 492, **FMi8** 286, **T07** 170; *Utricularia nigricalulis* Ridl., **FMP2** 493; erect herb to 15 cm tall; damp ground in the lowlands and mountains; quite widespread.
- 123.1.8 **Utricularia punctata** Wall. ex A. DC., **FMP2** 491, **FMi8** 293; *Utricularia fluitans* Ridl., **FMP2** 491; aquatic herb with inflorescences emerging to 30 cm tall; lakes and slow flowing rivers; Ph, Jh, Sp.
- 123.1.9 **Utricularia scandens** Benj., **FMi8** 283, **T07** 379; *Utricularia wallichiana* (non Benj.) Wight, **FMP2** 493; twining herb to 35 cm long; damp grassy spots; once from Gg Ledang, Ml.
- 123.1.10 **Utricularia striatula** Sm., **FMP2** 495, **FMi8** 289, **T07** 479; herb to 20 cm tall; on wet rocks, mostly in the mountains; widespread.
- 123.1.11 **Utricularia subulata** L., **FMi8** 292, **T07** 524; herb to 50 cm tall; damp soil; Sl.
- 123.1.12 **Utricularia uliginosa** Vahl, **FMi8** 282, **T07** 333; *Utricularia griffithii* Wight, **FMP2** 492; semi-aquatic herb to 30 cm tall; shallow water, pool margins; Ml, Sp.
- 123.1.13 **Utricularia vitellina** Ridl., **FMP2** 492, **FMi8** 279, **T07** 399; tiny herb to 5 cm tall; peaty stream banks near mountain tops; Gg Kerbau and Gg Tahan, Ph; endemic.

## 124. LINACEAE

- 124.1.1 **Hugonia costata** Miq., **FMi10** 611; liana; lowland forest; once from Labis F.R., Jh.
- 124.2.1 **Indorouchera griffithiana** (Planch.) Hallier f., **TFM1** 306, **FMi10** 617; *Roucheria griffithiana* Planch., **FMP1** 323; hooked liana to 30 m long; lowland and hill forest; widespread.

## 125. LOGANIACEAE

- 125.1.1 **Fagraea acuminatissima** Merr., **FMi6** 319, **TFM2** 271; *Fagraea obovata* auct. non Wall., **FMP2** 418; epiphytic climber or shrub; rocky coasts and inland forests of lowland and hills; widespread.

- 125.1.2 **Fagraea auriculata** Jack, **FMP2** 416, **FMi6** 326, **TFM2** 270; shrubby epiphyte or climber, sometimes free-standing; lowland and hill forest to 1200 m, sometimes cultivated; widespread.
- 125.1.3 **Fagraea blumei** G. Don, **FMi6** 320, **TFM2** 271; *Fagraea vaginata* King & Gamble, **FMP2** 418; tree, shrub, epiphyte or climber; lowland and hill forest, often near rivers; Pk, Ph, Sl, NS.
- 125.1.4 **Fagraea calcarea** M.R. Hend., **FMi6** 332, **TFM2** 271, **C14** 172; climbing shrub; limestone rockface; known only from type, Bt Chintamani, Ph; endemic.
- 125.1.5 **Fagraea carnososa** Jack, **FMP2** 416, **FMi6** 331, **TFM2** 271; *Fagraea rotundifolia* Ridl., **FMP2** 416; *Fagraea flavidula* Ridl., **FMP5** 322; epiphytic shrub or climber; lowland to montane forest; Tg, Pk, Ph, Sl.
- 125.1.6 **Fagraea ceilanica** Thunb., **FMi6** 315, **TFM2** 271; *Fagraea oblonga* King & Gamble, **FMP2** 417; epiphytic shrub, climber or small tree; coasts to mountain tops; Kl, Pk, Ph, Sl, Jh.
- 125.1.7 **Fagraea crenulata** Maingay ex C.B. Clarke, **FMP2** 420, **FMi6** 324, **TFM2** 271; thorny-trunked tree to 23 m tall; swampy forest near the sea, also planted; widespread, mostly along the west coast.
- 125.1.8 **Fagraea curtisii** King & Gamble, **FMP2** 417, **FMi6** 332, **TFM2** 271, **C14** 172; spreading tree or sometimes epiphytic; usually on limestone; P. Langkawi, Kd, Kl, Pk, Ph, Sl.
- 125.1.9 **Fagraea elliptica** Roxb., **FMi6** 303, **TFM2** 272; *Cyrtophyllum speciosum* Blume var. *montanum* Ridl., **FMP5** 322; tree to 28 m tall; montane forest; Kd, Ph.
- 125.1.10 **Fagraea fastigiata** Blume, **FMi6** 324, **TFM2** 270; liana, epiphytic shrub; hill forest; Kl, Pk.
- 125.1.11 **Fagraea fragrans** Roxb., **FMi6** 304 in part, **TFM2** 273 in part; *Cyrtophyllum lanceolatum* DC., **FMP2** 421; *Cyrtophyllum peregrinum* Blume, **FMP2** 421; tree to 30 m tall; open and swampy places, also planted; throughout.
- 125.1.12 **Fagraea gardenioides** Ridl., **FMP2** 416, **FMi6** 331, **TFM2** 270; epiphytic shrub; montane forest at 1200–1650 m; Pk, Ph, Sl.
- 125.1.13 **Fagraea gigantea** Ridl., **TFM2** 273; *Cyrtophyllum giganteum* (Ridl.) Ridl., **FMP2** 421; *Fagraea fragrans* auct. non Roxb., **FMi6** 304 in part; tree sometimes to 55 m tall; lowland forest to 600 m; Pk, Ph, Sl, NS, MI, Sp.
- 125.1.14 **Fagraea racemosa** Jack ex Wall., **FMP2** 418, **FMi6** 311, **TFM2** 270; *Fagraea maingayi* C.B. Clarke, **FMP2** 419; *Fagraea pauciflora* Ridl., **FMP2** 419; *Fagraea ligustrina* Blume, **FMP2** 420; shrub, tree or straggling climber; common in secondary forests; widespread.

- 125.1.15 **Fagraea ridleyi** King & Gamble, **FMP2** 417, **FMi6** 320, **TFM2** 271; scandent shrub or small tree; on cliffs and along rivers; scattered.
- 125.1.16 **Fagraea tubulosa** Blume, **FMP2** 415, **FMi6** 320, **TFM2** 270; scrambling shrub; hill forest; Pk.
- 125.1.17 **Fagraea wallichiana** Benth., **W30** 267; *Fagraea fragrans* auct. non Roxb., **FMi6** 304 in part; tree; hill ridge forest; Kd, Pn, Kl, Tg, Jh; endemic.
- 125.2.1 **Mitrasacme indica** Wight, **FMi6** 384; *Mitrasacme alsinoides* auct. non R.Br., **FMP2** 413; herb to 15 cm tall; paddy field weed; Kl.
- 125.1.2a **Mitrasacme pygmaea** R.Br. var. **malaccensis** (Wight) Hara, **FMi6** 383; *Mitrasacme polymorpha* auct. non R.Br., **FMP2** 413; erect herb to 35 cm tall; open grassy places; scattered.
- 125.1.2b **Mitrasacme pygmaea** R.Br. var. **pygmaea**, **FMi6** 383; *Mitrasacme nudicaulis* auct. non Blume, **FMP2** 413; erect herb to 20 cm tall; open grassy places; once from Bt Sialang, Ml.
- 125.3.1 **Mitreola paniculata** Wall. ex G. Don, **FMi6** 375 in synonymy; *Mitreola oldenlandioides* G. Don, *nom. illeg.*, **FMP2** 413; *Cynoctonum mitreola* (L.) Britt., **FMi6** 375, **TFM2** 268, **C14** 171; erect herb to 50 cm tall; on limestone; P. Langkawi.
- 125.4.1 **Norrisia maior** Soler., **FMi6** 341, **TFM2** 274; *Norrisia malaccensis* Gardner var. *major* Ridl., **FMP2** 414; tree to 24 m tall; lowland forest, often near rivers; Sl southward.
- 125.4.2 **Norrisia malaccensis** Gardner, **FMP2** 414, **FMi6** 341, **TFM2** 275; tree to 42 m tall; lowland forest; Pk southward.
- 125.5.1 **Strychnos axillaris** Colebr., **FMi6** 358; *Strychnos pubescens* C.B. Clarke, **FMP2** 424; *Strychnos quintuplinervis* A.W. Hill, **FMP2** 424; *Strychnos malaccensis* Benth., **FMP2** 425; *Strychnos penicillata* A.W. Hill, **FMP2** 425; *Strychnos scortechinii* A.W. Hill, **FMP2** 425; liana; lowland forest; widespread.
- 125.5.2 **Strychnos colubrina** L., **FMi6** 355; *Strychnos septemnervis* C.B. Clarke, **FMP2** 423 incl. var. *imberbis* A.W. Hill; big liana; lowland forest; Pn, Pk, Ml.
- 125.5.3 **Strychnos curtisii** King & Gamble, **FMP2** 424, **FMi6** 353; large liana; hill forest; Pn, Pk; endemic.
- 125.5.4 **Strychnos flavescens** King & Gamble, **FMP2** 423, **FMi6** 357; liana; swampy lowland forest; Pn, Pk, Ml.
- 125.5.5 **Strychnos ignatii** Berg., **FMi6** 347; *Strychnos ovalifolia* Wall. ex G. Don, **FMP2** 425; large liana; lowland and hill forest; widespread.

- 125.5.6 **Strychnos quadrangularis** A.W. Hill, **FMP2** 426, **FM16** 356; liana; lowland forest; Pk, Sl; endemic.
- 125.5.7 **Strychnos maingayi** C.B. Clarke, **FMP2** 423, **FM16** 350; liana; lowland forest; Pk, Sp.
- 125.5.8 **Strychnos ridleyi** King & Gamble, **FMP2** 424, **FM16** 360; climbing shrub; lowland forest; Sp; endemic.
- 125.5.9 **Strychnos rufa** C.B. Clarke, **FMP2** 426, **FM16** 361; liana, flowers unknown; montane forest; Pk, Sl; endemic.
- 125.5.10 **Strychnos villosa** A.W. Hill, **FM16** 351; *Strychnos hirsutiflora* A.W. Hill, **FMP2** 423; large liana; lowland forest; Pk, Jh.
- Strychnos ovata** A.W. Hill [**FM16** 351] may be represented by one doubtfully identified specimen from Pn.

## 126. LOPHOPYXIDACEAE

- 126.1.1 **Lophopyxis maingayi** Hook.f., **FMP1** 435, **FM17** 91; large liana; lowland forest and forest margins; Pn to Ml.

## 127. LORANTHACEAE

- 127.1.1 **Amyema beccarii** (Tiegh.) Danser, **D03** 326, **B12** 313; mistletoe; lowlands; Ph, Jh.
- 127.2.1 **Amylothea duthieana** (King) Danser, **D03** 244, **B12** 112; *Loranthus duthieanus* King, **FMP3** 156; *Elytranthe rubra* Ridl., **FMP3** 159; shrubby mistletoe; lowland and hill forest to 700 m; Pk, Sp.
- 127.3.1 **Barathranthus axanthus** (Korth.) Miq., **D03** 393; *Loranthus lobbii* Hook.f., **FMP3** 153; shrubby mistletoe; lowlands to mountains; Kd, Pn, Pk, Ph, Sl, NS, Jh, Sp.
- 127.3.2 **Barathranthus productus** (King) Tiegh., **D03** 396; *Loranthus productus* King, **FMP3** 152; stout, bushy mistletoe; montane forest; Pk, Ph.
- 127.4.1 **Dendrophthoe falcata** (L.f.) Ettingsh., **D03** 403; *Loranthus longiflorus* Desr., **FMP3** 155; large shrubby mistletoe; Ml.
- 127.4.2 **Dendrophthoe grandifrons** (King) Danser, **D03** 410; *Loranthus grandifrons* King, **FMP3** 155; big shrubby mistletoe; lowlands; Pk, Ph, Sl, NS, Ml.
- 127.4.3 **Dendrophthoe lanosa** (Korth.) Danser, **D03** 412; *Loranthus casuarinae* Ridl., **FMP3** 154; slender hanging mistletoe; lowlands; Ph.

- 127.4.4 **Dendrophthoe pentandra** (L.) Miq., **D03** 417; *Loranthus pentandrus* L., **FMP3** 155; *Loranthus crassus* Hook.f., **FMP3** 155; large shrubby mistletoe; lowlands to mountains, common; Kd, Kl, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 127.5.1 **Elytranthe albida** (Blume) Blume, **FMP3** 158, **D03** 305; large shrubby mistletoe, high on tall trees; lowland and hill forest; Pn, Pk, Ph, Ml, Jh, Sp.
- 127.5.2 **Elytranthe arnottiana** (Korth.) Miq., **D03** 307; *Elytranthe maingayi* (Hook.f.) Tiegh., **FMP3** 158; small shrubby mistletoe; low on small trees; Ml, Sp.
- 127.6.1 **Helixanthera apodanthes** Danser, **D03** 371; *Loranthus pulcher* var. *sessiliflora* Ridl., **FMP3** 151; shrubby mistletoe; lowlands and mountains; Pk, Ph; endemic.
- 127.6.2 **Helixanthera coccinea** (Jack) Danser, **D03** 374; *Loranthus coccineus* Jack, **FMP3** 152; bushy mistletoe; lowland and hill forest; Pg, Pk, Ph, Sl, Ml, Jh, Sp.
- 127.6.3 **Helixanthera crassipetala** (King) Danser, **D03** 376; *Loranthus crassipetalus* King, **FMP3** 152; stout shrubby mistletoe; hill forest; Pk, Sl; endemic.
- 127.6.4 **Helixanthera cylindrica** (Jack) Danser, **D03** 377; *Loranthus heteranthus* DC., **FMP3** 151; big stout mistletoe; lowland and hill forest; 1000 m; Kd, Tg, Pk, Ph, Sl.
- 127.6.5 **Helixanthera parasitica** Lour., **D03** 381; *Loranthus pentapetalus* Roxb., **FMP3** 152; bushy mistletoe; lowlands; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Sp.
- 127.6.6 **Helixanthera pulchra** (DC.) Danser, **D03** 384; *Loranthus pulcher* DC., **FMP3** 151 incl. var. *parishii* (Hook.f.) Gamble; shrubby mistletoe to 2 m tall; hill forest; Kd, Pn, Pk, Ph, Sl, NS.
- 127.6.7 **Helixanthera valida** (Ridl.) Danser, **D03** 390; *Loranthus validus* Ridl., **FMP5** 330; Gerik, Pk; endemic.
- 127.7.1 **Kingella scortechinii** (King) Tiegh., **D03** 426; *Loranthus scortechinii* King, **FMP3** 156; big shrubby mistletoe; Pk, NS; endemic.
- 127.8.1 **Lepeostegeres beccarii** (King) Gamble, **FMP3** 162, **D03** 262, **B13** 119; creeping mistletoe to 10 m long; lowland and hill forest; Pk, Sl.
- 127.9.1 **Lepidaria kingii** (King) Danser, **D03** 312; *Lepeostegeres kingii* (King) Gamble, **FMP3** 162; bushy mistletoe; lowlands; Kd, Pk, Ph, Sl, Ml, Jh; endemic.
- 127.10.1 **Loxanthera speciosa** Blume, **FMP3** 157, **D03** 254, **B13** 115; shrubby mistletoe; lowland to montane forest at 1600 m; Pk, Sl, NS, Ml, Jh.

- 127.11.1 **Macrosolen avenis** (Blume) Danser, **D03** 275; *Elytranthe avenis* (Blume) G. Don, **FMP3** 160; shrubby mistletoe; montane forest above 900 m.
- 127.11.2 **Macrosolen cochinchinensis** (Lour.) Tiegh., **D03** 279; *Elytranthe barnesii* Gamble, **FMP3** 161; *Elytranthe globosa* G. Don, **FMP3** 161 incl. var. *puberula* Ridl.; shrubby mistletoe; common; Ps, Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 127.11.3 **Macrosolen dianthus** (King) Danser, **D03** 287; *Elytranthe diantha* (King) Gamble, **FMP3** 161; *Elytranthe wrayi* Gamble, **FMP3** 161; shrubby mistletoe to 1 m tall; Pk; endemic.
- 127.11.4 **Macrosolen formosus** (Blume) Miq., **D03** 287; *Elytranthe formosa* (Blume) G. Don, **FMP3** 158; *Elytranthe kunstleri* (King) Gamble, **FMP3** 159; big shrubby mistletoe; high on tall trees; lowland and hill forest to 1500 m; Kl, Pk, Ph, Sl, NS.
- 127.11.5 **Macrosolen melintangensis** (Korth.) Miq., **B14** 26; *Elytranthe lowii* (King) Gamble, **FMP3** 160; *Macrosolen lowii* (King) Tiegh., **D03** 292; slender shrubby mistletoe; hill forest; Pk, Ph.
- 127.11.6 **Macrosolen papillosus** (Gamble) Danser, **D03** 293; *Elytranthe papillosa* Gamble; **FMP3** 160; slender shrubby mistletoe; Jh, Sp.
- 127.11.7 **Macrosolen platyphyllus** (King) Danser, **D03** 294; *Elytranthe platyphylla* (King) Gamble, **FMP3** 159; shrubby mistletoe; lowland forest; Pk, Ph, Sl, NS, Jh; endemic.
- 127.11.8 **Macrosolen retusus** (Jack) Miq., **D03** 296; *Elytranthe retusa* (Jack) G. Don, **FMP3** 160; stout shrubby mistletoe to 60 cm tall; often on low trees near the sea; Tg, Pk, Ph, Ml, Jh, Sp.
- 127.11.9 **Macrosolen robinsonii** (Gamble) Danser, **D03** 297; *Elytranthe robinsonii* Gamble, **FMP3** 161; straggly mistletoe; montane forest at 900–1500 m; G. Tahan, Ph.
- 127.11.10 **Macrosolen tubiflorus** (Ridl.) Danser, **D03** 303; *Elytranthe tubaeflora* Ridl., **FMP3** 159; shrubby mistletoe; montane forest at about 1650 m; G. Inas, Pk; endemic.
- 127.12.1 **Scurrula ferruginea** (Jack) Danser, **D03** 432, **B11** 73; *Loranthus ferrugineus* Jack, **FMP3** 153; slender bushy mistletoe; common in lowland forest to 1000 m; Tg, Pn, Pk, Ph, Sl, NS, Ml, Sp.
- 127.12.2 **Scurrula parasitica** L., **B11** 80; *Loranthus malaccensis* Hook.f., **FMP3** 154; *Loranthus obtectus* DC., **FMP3** 153; *Scurrula fusca* (Blume) G. Don, **D03** 434; slender shrubby mistletoe to about 1 m tall; lowlands and hills; Kd, Kl, Pn, Pk, Ph, Sl, Ml, Jh.

127.13.1 **Taxillus chinensis** (DC.) Danser, **B11** 82; *Loranthus estipitatus* Stapf, **FMP3** 154; *Taxillus estipitatus* (Stapf) Danser, **D03** 445; slender mistletoe; mostly in the hills; Pk, Sl.

128. LYTHRACEAE

128.1.1 **Ammania baccifera** L., **FMP1** 820, **TFM2** 276, **M47** 338; herb to 30 cm tall; damp open places; Kd, Pk, Jh, Sp; origin uncertain.

128.2.1 **Cuphea carthagenensis** (Jacq.) J.F. Macbr., **TFM2** 276; herb; waste places; scattered; naturalized from South America.

128.3.1 **Duabanga grandiflora** (Roxb. ex DC.) Walp., **FMI4** 289, **TFM1** 444; *Duabanga sonneratioides* Buch.-Ham., **FMP1** 824; tree to 35 m tall; lowland and hills, often near rivers; NS northward.

128.4.1 **Lagerstroemia anisoptera** Koehne, **TFM2** 278; tree to 10 m tall; lowlands; P. Langkawi, Kd, Pn.

128.4.2 **Lagerstroemia floribunda** Jack, **FMP1** 823, **TFM2** 279; tree to 18 m tall; open country, often near rivers; Ps, P. Langkawi, Kd, Pn.

128.4.3 **Lagerstroemia langkawiensis** Furtado & Montein, **TFM2** 278, **C14** 174; small tree 4–6 m tall; on limestone; P. Langkawi; endemic.

128.4.4 **Lagerstroemia ovalifolia** Teijsm. & Binn., **FMP1** 823, **TFM2** 280; tree to 30 m tall; lowland forest; P. Lankawi (once), Pk, Ph, Sl, NS, Ml, Jh.

128.4.5 **Lagerstroemia siamica** Gagnep., **TFM2** 278; small tree to 12 m tall; once from Kd.

128.4.6 **Lagerstroemia speciosa** (L.) Pers., **TFM2** 280; *Lagerstroemia flos-reginae* Retz., **FMP1** 823; *Lagerstroemia macrocarpa* auct. non Kurz, **FMP1** 824; tree to 15 m tall; open country, often near rivers; NS northward, but a commonly cultivated ornamental elsewhere.

128.5.1 **Pemphis acidula** J.R. Forst. & G. Forst., **FMP1** 821, **TFM2** 276; shrub to 8 m tall; rocky and sandy shores; scattered, commonest in the south.

128.6.1 **Rotala indica** (Willd.) Koehne, **TFM2** 276, **C22** 108, **M47** 344; *Ammania peploides* Spreng., *nom. illeg.*, **FMP1** 820; erect or trailing herb to 40 cm tall; open damp places, rice fields; Ps, P. Langkawi, Kd, Tg, Pk, Ml.

128.6.2 **Rotala rosea** (Poir.) C.D.K. Cook, **C19** 86, **M44** 350; *Rotala pentandra* (Roxb.) Blatt. & Hallb., **TFM2** 276; semi-aquatic herb to 30 cm tall; margins of ponds and rivers; once from Ml.

128.6.3 **Rotala wallichii** (Hook.f.) Koehne, **C22** 29; semi-aquatic creeping herb; rivers and streams; P. Langkawi, Jh.

- 128.7.1 **Sonneratia alba** J.J.Sm., **FMi4** 285, **TFM1** 445; *Sonneratia griffithii* auct. non Kurz, **FMP1** 825; tree to 30 m tall; mangroves; all coasts.
- 128.7.2 **Sonneratia caseolaris** (L.) Engl., **FMi4** 283, **TFM1** 445; *Sonneratia acida* L.f., **FMP1** 825; tree to 15 m tall; mangroves, tidal river banks; commonest on the west coast.
- 128.7.3 **Sonneratia griffithii** Kurz, **FMi4** 286, **TFM1** 445; tree to 20 m tall; mangroves; very rare, a few locations.
- 128.7.4 **Sonneratia ovata** Back., **FMi4** 285, **TFM1** 445; *Sonneratia alba* auct. non J.J.Sm., **FMP1** 825; tree to 8 m tall; mangroves, tidal creeks; uncommon, scattered widely.

129. MAGNOLIACEAE

- 129.1.1 **Magnolia bintuluensis** (A. Agostini) Noot., **FMi10** 577; *Aromadendron nutans* Dandy, **TFM2** 284; tree to 25 m tall; peat swamp forest; once from Pontian, Jh.
- 129.1.2a **Magnolia candollii** (Blume) H. Keng var. **candollii**, **FMi10** 582; *Manglietia sebassa* King, **FMP1** 14; *Talauma kunstleri* King, **FMP1** 16; *Talauma longifolia* (Blume) Ridl., **FMP1** 16; *Talauma mutabilis* Blume, **FMP1** 16; *Talauma candollii* Blume, **TFM2** 293; *Talauma gracilior* Dandy, **TFM2** 294; *Talauma peninsularis* Dandy, **TFM2** 294; *Talauma rubra* Miq., **TFM2** 294; *Talauma sebassa* Miq. ex Dandy, **TFM2** 294; tree to 10 m tall; lowland and hill forest; widespread.
- 129.1.2b **Magnolia candollii** (Blume) H. Keng var. **obovata** (Korth.) Noot., **FMi10** 585; *Talauma oblanceolata* Ridl.; **FMP5** 286, **TFM2** 294; *Talauma betongensis* Craib, **TFM2** 291; tree to 20 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Jh.
- 129.1.2c **Magnolia candollii** (Blume) H. Keng var. **singaporensis** (Ridl.) Noot., **FMi10** 586; *Talauma singaporensis* Ridl., **FMP1** 16, **TFM2** 293; tree to 10 m tall; wet lowland forest; Jh, Sp.
- 129.1.3 **Magnolia elegans** (Blume) H. Keng, **FMi10** 577; *Aromadendron elegans* Blume, **FMP1** 17, **TFM2** 283; tree to 50 m tall; lowland and hill forest; Pn, Pk, Sl, Sp.
- 129.1.4 **Magnolia macklottii** (Korth.) Dandy var. **beccariana** (A. Agostini) Noot., **FMi10** 571; tree to 23 m tall; montane forest; once from Maxwell's Hill, Pk.
- 129.1.5 **Magnolia maingayi** King, **FMP1** 13, **TFM2** 285, **FMi10** 573; tree to 18 m tall; lowland and hill forest to 1500 m; Pk, Ph, Sl, Jh, Sp.



- 129.1.6 **Magnolia pahangensis** Noot., **FMi10** 579; tree; hill forest; only known from type; Bt Jeriau, Ph; endemic.
- 129.1.7 **Magnolia villosa** (Miq.) H. Keng, **FMi10** 588; *Talauma lanigera* Hook.f. & Thomson, **FMP1** 15; *Talauma villosa* Miq., **TFM2** 293; tree to 18 m tall; lowland to lower montane forest; Pn, Pk, Sl, Ml, Sp.
- 129.2.1 **Manglietia dolichogyna** Dandy ex Noot., **FMi10** 591; *Manglietia glauca* auct. non Blume, **FMP1** 14 in part; tree to 21 m tall; montane forest; Pk, Ph.
- 129.3.1 **Michelia champaca** L. var. **pubinervia** (Blume) Miq., **TFM2** 287, **FMi10** 603; tree to 50 m tall; lowland to lower montane forest; [var. *champaca* widely planted]; P. Langkawi, Kl, Ph.
- 129.3.2 **Michelia koordersiana** Noot., **FMi10** 601; tree to 32 m tall; lowland and hill forest; Sl.
- 129.3.3 **Michelia montana** Blume, **FMP1** 15, **TFM2** 288, **FMi10** 603; tree to 40 m tall; lowland to mountains; Pk, Ph.
- 129.3.4 **Michelia scortechinii** (King) Dandy, **TFM2** 288, **FMi10** 601; *Manglietia scortechinii* King, **FMP1** 14; tree to 37 m tall; hill and montane forest; Pk, Ph.
- 129.4.1 **Pachylarnax praecalva** Dandy, **TFM2** 289, **FMi10** 593; *Manglietia glauca* auct. non Blume, **FMP1** 14 in part; tree to 48 m tall; lowland and hill forest; Kd, Pn, Sl.

## 130. MALPIGHIACEAE

- 130.1.1 **Aspidopterys concava** (Wall.) A. Juss., **FMP1** 329, **FMi5** 129; liana to 20 m long; lowland forest; Pn, Sl, Ml, Jh.
- 130.1.2 **Aspidopterys tomentosa** (Blume) A. Juss. var. **obcordata** (Hemsl.) Nied., **FMi5** 130; liana; once from Kd.
- 130.2.1 **Brachylophon curtisii** Oliv., **FMP1** 329 incl. var. **hullettii** (King) Ridl., **FMi5** 138; shrub to 2 m tall; lowlands; west coast Pn to Jh.
- 130.3.1 **Hiptage benghalensis** (L.) Kurz, **FMi5** 132; *Hiptage madablota* Gaertn., **FMP1** 328; large liana to 30 m long; mostly garden escape; wild in open country in Ps.
- 130.3.2 **Hiptage burkilliana** Arènes, **FMi5** 131; liana; lowlands; twice from Ph; endemic.
- 130.3.3 **Hiptage sericea** Hook.f., **FMP1** 328, **FMi5** 131; slender liana; lowland forest margins, riverbanks; Pn, Ph, Ml, Jh, Sp.

- 130.4.1 **Tristellateia australasiae** A. Rich., **FMP1** 327, **FMt5** 136; slender liana to 10 m long; back mangroves, also widely cultivated; widespread.

131. MALVACEAE

- 131.1.1 **Abelmoschus moschatus** Medik., **TFM1** 310; *Hibiscus abelmoschus* L., **FMP1** 258; erect herb to 2 m tall; weed of cultivation; Pk, Sl, Ml.
- 131.2.1 **Abutilon indicum** (L.) Sweet, **FMP1** 256, **V02** 170, **TFM1** 310; small shrub; waste ground; common throughout.
- 131.3.1 **Hibiscus floccosus** Mast., **FMP1** 259, **TFM1** 312; tree to 20 m tall; lowland forests, often along rivers; Ml northward; endemic.
- 131.3.2 **Hibiscus macrophyllus** Roxb. ex Hornem., **FMP1** 258, **TFM1** 312; tree to 20 m tall; lowland forest; Ml northward.
- 131.3.3 **Hibiscus surattensis** L., **FMP1** 258; scrambling spiny shrub; waste ground, open places; widespread.
- 131.3.4 **Hibiscus tiliaceus** L., **FMP1** 259, **TFM1** 312; tree to 12 m tall; sea shores, rocky coasts and river banks; throughout.
- 131.4.1 **Pavonia rigida** (Wall. ex Mast.) Hochr., **V02** 136, **TFM1** 310; *Urena rigida* Wall. ex Mast., **FMP1** 257; shrub to 1 m tall; open dry sites; Ml.
- 131.5.1 **Sida acuta** Burm.f., **V02** 186, **TFM1** 310; *Sida carpinifolia auct. non L.f.*, **FMP1** 255; shrub to 1 m tall; waste places; common throughout.
- 131.5.2 **Sida cordifolia** L., **FMP1** 254, **V02** 199, **TFM1** 310; herb to 1 m tall; sandy open places; north of Peninsula.
- 131.5.3 **Sida javensis** Cav., **V02** 184, **TFM1** 310; *Sida veronicifolia (non Lam.) Moritzi*, **FMP1** 254; trailing herb; dry open spots; north of Peninsula.
- 131.5.4 **Sida mysorensis** Wight & Arn., **FMP1** 254, **V02** 180, **TFM1** 310; herb to 1 m tall; roadsides; Pk, Ph.
- 131.5.5a **Sida rhombifolia** L. ssp. **retusa** (L.) Borss.Waalk., **V02** 198; *Sida rhombifolia* L. var. *retusa* (L.) Mast., **FMP1** 254; erect shrub to 1 m tall; sea shores and waste places; widespread.
- 131.5.5b **Sida rhombifolia** L. ssp. **rhombifolia**, **V02** 195; *Sida rhombifolia* L. var. *rhomboidea* (DC.) Mast., **FMP1** 254; erect shrub to 1 m tall; sea shores and waste places; widespread.
- 131.6.1 **Thespesia populnea** (L.) Sol. ex Corrêa, **FMP1** 260, **TFM1** 313; tree to 15 m tall; sandy and rocky shores; all coasts.

- 131.7.1a **Urena lobata** L. ssp. **lobata** var. **lobata**, **V02** 140; *Urena lobata* L. var. *lobata*, **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the hills; throughout.
- 131.7.1b **Urena lobata** L. ssp. **lobata** var. **viminea** (Cav.) Gürke, **V02** 141; *Urena lobata* L. var. *lobata*, **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the hills; throughout.
- 131.7.1c **Urena lobata** L. ssp. **sinuata** (L.) Borss.Waalk. var. **glauca** (Blume) Borss.Waalk., **V02** 144; *Urena lobata* L. var. *sinuata* (L.) Hochr., **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the lowlands; throughout.
- 131.7.1d **Urena lobata** L. ssp. **sinuata** (L.) Borss.Waalk. var. **sinuata**, **V02** 142; *Urena lobata* L. var. *sinuata* (L.) Hochr., **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the lowlands; throughout.
- 131.8.1 **Wissadula periplocifolia** (L.) C. Presl ex Thwaites, **V02** 156, **TFM1** 310; *Wissadula zeylanica* Medik., *nom. illeg.*, **FMP1** 255; shrub to 1 m tall; dry open places; Ps, Kd, Ph.
132. MELASTOMATACEAE
- 132.1.1 **Anerinacleistus cornutus** J.F. Maxwell, **M26** 61; shrub to 3 m tall; hill forest; only known from Gg Lawit, Tg; endemic.
- 132.1.2 **Anerinacleistus curtisii** Stapf, **M26** 43; *Phaulanthus curtisii* (Stapf) Ridl., **FMP1** 777; shrub to 2.5 m tall; hill and montane forest; Kd, Pn, Pk, Sl; endemic.
- 132.1.3 **Anerinacleistus fruticosus** Ridl., **M26** 61; *Perilimnastes fruticosa* (Ridl.) Ridl., **FMP1** 773; shrub to 1 m tall; exposed rocky areas on mountains; Kl, Ph; endemic.
- 132.1.4 **Anerinacleistus grandiflorus** Ridl., **M26** 62; *Oritrephes grandiflora* (Ridl.) Ridl., **FMP1** 771; shrub to 4 m tall; montane forest; Tg, Ph, Sl; endemic.
- 132.1.5 **Anerinacleistus griffithii** (Hook.f. ex Triana) Ridl., **M26** 48; *Phaulanthus rudis* Ridl., **FMP1** 777; shrub to 2.5 m tall; lowland and hill forest; Kd, Ph, Sl, NS.
- 132.1.6 **Anerinacleistus helferi** Hook.f. ex Triana, **M26** 49; *Phaulanthus helferi* (Hook.f. ex Triana) Ridl., **FMP1** 777; shrub to 1 m tall; lowland forest; Ph.
- 132.1.7 **Anerinacleistus macranthus** King, **FMP1** 776, **M26** 51; shrub to 3 m tall; montane forest; Pk, Ph; endemic.
- 132.1.8a **Anerinacleistus pauciflorus** Ridl. var. **brevipedunculus** M.P. Nayar, **M26** 53; shrub to 3 m tall; hill and montane forest, 600–1100 m; Sl; endemic.

- 132.1.8b **Anerincleistus pauciflorus** Ridl. var. **pauciflorus**, **FMP1** 776, **M26** 52; shrub to 6 m tall; hill and montane forest; Tg, Sl, NS; endemic.
- 132.1.9 **Anerincleistus pulcher** (Ridl.) Ridl., **M26** 63; *Oritrephes pulchra* Ridl., **FMP1** 771; *Oritrephes barnesii* (Ridl.) Ridl., **FMP1** 772; *Oritrephes robinsonii* (Ridl.) Ridl., **FMP1** 773; shrub to 3 m tall; montane forest to 2100 m; Kl, Tg, Ph; endemic.
- 132.1.10 **Anerincleistus stipularis** (Ridl.) J.F. Maxwell, **M26** 60; *Phaulanthus stipularis* Ridl., **FMP1** 777; shrub; only known from type, Bundi, Tg; endemic.
- 132.2.1 **Astronia macrophylla** Blume, **TFM4** 182, **M27** 97; tree to 25 m tall; lowland forest; once from Labis F.R., Jh.
- 132.2.2 **Astronia smilacifolia** Triana ex C.B. Clarke, **FMP1** 807, **TFM4** 183, **M27** 113; tree to 15 m tall; hill and montane forest at 200–1350 m; Pn, Tg, Pk, Ph, Sl, Ml.
- 132.3.1a **Blastus borneensis** Cogn. var. **borneensis**, **H15** 58; *Blastus cogniauxii* Stapf, **FMP1** 773; shrub to 3 m tall; hill forest; widespread.
- 132.3.1b **Blastus borneensis** Cogn. var. **pulverulentus** (Ridl.) C. Hansen, **H15** 61; *Blastus pulverulentus* Ridl., **FMP1** 774; shrub; Ulu Langat, Sl.
- 132.4.1 **Clidemia hirta** (L.) D. Don, **FMP1** 807; weedy shrub to 2 m tall; forest margins, shady places; widespread; naturalized from tropical America.
- 132.5.1 **Creochiton anomala** (King & Stapf ex King) Veldkamp, **M24** 162; *Anplectrum anomalum* King & Stapf ex King, **FMP1** 800; liana; lowland forest; Pk, Jh.
- 132.6.1 **Diplectria anomala** (King) Veldkamp, **V34** 426; *Dissochaeta anomala* King, **FMP1** 798; liana; lowland forest; Kl, Pk, Sl; endemic.
- 132.6.2 **Diplectria conica** Bakh.f., **V34** 414, **M24** 156; liana; hill forest; Ulu Gombak, Sl.
- 132.6.3 **Diplectria divaricata** (Willd.) Kuntze, **V34** 417, **M24** 157; *Anplectrum glaucum* (Jack) Triana, **FMP1** 799; *Anplectrum divaricatum* (Willd.) Triana, **FMP1** 800; woody root climber; common, mostly lowland forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Sp.
- 132.6.4 **Diplectria stipularis** (Blume) Kuntze, **V34** 424, **M24** 157; *Anplectrum lepidosetosum* King, **FMP1** 799; liana to 15 m long; lowland and hill forest; Pn, Kl, Tg, Pk, Ml, Jh, Sp.
- 132.6.5 **Diplectria viminalis** (Jack) Kuntze, **V34** 427, **M24** 157; *Anplectrum pallens* (Blume) Triana, **FMP1** 800 incl. var. *petiolare* Ridl.; liana; lowland and hill forest; Pn, Kl, Pk, Sl, Ml, Jh, Sp.

- 132.7.1a **Dissochaeta annulata** Hook.f. ex Triana var. **annulata**, **FMP1** 796, **M24** 157; liana; lowland and hill forest; scattered throughout.
- 132.7.1b **Dissochaeta annulata** Hook.f. ex Triana var. **griffithii** (M.P. Nayar) J.F. Maxwell, **M22** 313, **M24** 157; liana; forest; Ph, Sl, Ml, Jh; endemic variety.
- 132.7.2 **Dissochaeta biligulata** Korth., **M24** 158; liana; Kd, Pn, Pk, Sl, Jh.
- 132.7.3 **Dissochaeta bracteata** (Jack) Blume, **FMP1** 797, **M24** 158; liana; lowland and hill forest; Pn, Pk, Sl, Ml.
- 132.7.4 **Dissochaeta celebica** Blume, **FMP1** 798, **M24** 158; liana; forest margins, lowlands and hills; common throughout.
- 132.7.5 **Dissochaeta fallax** (Jack) Blume, **M24** 158; liana; montane forest; Gg Ulu Kali, Sl and Gg Telapak, NS.
- 132.7.6 **Dissochaeta gracilis** (Jack) Blume, **FMP1** 797, **M24** 158; liana; forest margins; common throughout.
- 132.7.7a **Dissochaeta intermedia** Blume var. **intermedia**, **FMP1** 798, **M24** 158; liana; lowland and hill forest; Ph, Jh, Sp.
- 132.7.7b **Dissochaeta intermedia** Blume var. **sagittata** (Blume) J.F. Maxwell, **M22** 315, **M24** 159; liana; forest; Ml.
- 132.7.8 **Dissochaeta monticola** Blume, **M24** 159; liana; hill and montane forest; Fraser's Hill, Ph; Ulu Gombak, Sl.
- 132.7.9 **Dissochaeta pallida** (Jack) Blume, **FMP1** 797, **M24** 159; liana; lowland to montane forest; widespread and common.
- 132.7.10 **Dissochaeta punctulata** Hook.f. ex Triana, **FMP1** 796, **M24** 159; liana; forest margins; Tg, NS, Ml, Jh, Sp.
- 132.7.11a **Dissochaeta rostrata** Korth. var. **hirsuta** (Hook.f. ex Triana) J.F. Maxwell, **M22** 319, **M24** 159; *Dissochaeta hirsuta* Hook.f. ex Triana, **FMP1** 797; liana; open country; Jh.
- 132.7.11b **Dissochaeta rostrata** Korth. var. **malayana** (Furtado) J.F. Maxwell, **M22** 320, **M24** 159; liana; forest; Tg, Sl.
- 132.7.12 **Dissochaeta spectabilis** J.F. Maxwell, **M22** 321, **M24** 160; liana; montane forest; Cameron Highlands, Ph.
- 132.7.13 **Dissochaeta vacillans** (Blume) Blume, **M24** 160; liana; montane forest; Pk, Ph, Sl.
- 132.7.14a **Dissochaeta velutina** Blume var. **reticulata** (Blume) J.F. Maxwell, **M22** 321, **M24** 160; liana; montane forest; Genting Highlands, Sl.

- 132.7.14b **Dissochaeta velutina** Blume var. **velutina**, **M24** 160; liana; montane forest; Pk, Ph, Sl, Ml.
- 132.8.1 **Lijndenia laurina** Zoll. & Moritz, **B34** 122; *Memecylon oligoneurum* Blume, **FMP1** 811 '*oligoneuron*', **M19** 99, **TFM4** 194; shrub or tree to 15 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.9.1 **Macrolenes dimorpha** (Craib) J.F. Maxwell, **M22** 321, **M24** 160; liana; forest; widespread.
- 132.9.2a **Macrolenes echinulata** (Naudin) Bakh.f. var. **echinulata**, **M24** 161; *Marumia rhodocarpa* Cogn., **FMP1** 795; liana; swampy lowland forest; Ml, Jh, Sp.
- 132.9.2b **Macrolenes echinulata** (Naudin) Bakh.f. var. **esetosa** (Craib) J.F. Maxwell, **M22** 321, **M24** 161; lowland forest; only known from Jabi, Tg.
- 132.9.3 **Macrolenes glabrata** M.P. Nayar, **M24** 161; liana; montane forest; Genting Highlands, Sl; endemic.
- 132.9.4 **Macrolenes muscosa** (Blume) Bakh.f., **M24** 161; liana; once from P. Buru, Sp.
- 132.9.5a **Macrolenes nemorosa** (Jack) Bakh.f. var. **nemorosa**, **M24** 161; *Marumia nemorosa* (Jack) Blume var. *nemorosa*, **FMP1** 795; slender liana; forest margins; common throughout.
- 132.9.5b **Macrolenes nemorosa** (Jack) Bakh.f. var. **verrucosa** (Cogn.) J.F. Maxwell, **M24** 161; *Marumia nemorosa* (Jack) Blume var. *verrucosa* (Cogn.) Ridl., **FMP1** 795; slender liana; forest margins; widespread.
- 132.9.6 **Macrolenes rufolanata** (Ridl.) J.F. Maxwell, **M22** 321, **M24** 162; *Marumia rufolanata* Ridl., **FMP5** 310; liana; forest; Kl, Ph, Sl; ?endemic.
- 132.9.7 **Macrolenes stellulata** (Jack) Bakh.f. var. **ciliatiloba** (Baker f.) J.F. Maxwell, **M22** 321, **M24** 162; liana; forest; Kl, Tg, Ph, Jh.
- 132.10.1 **Medinilla alternifolia** Blume, **M20** 149; *Medinilla scandens* King, **FMP1** 801; root climber to 12 m long; lowland and hill forest; Tg, Pk, Ph, Jh.
- 132.10.2a **Medinilla clarkei** King var. **clarkei**, **FMP1** 803, **M20** 150; *Medinilla pahangensis* Ridl., **FMP1** 804; *Medinilla perakensis* King, **FMP1** 804; shrub to 2.5 m tall, usually epiphytic; montane forest above 1000 m; Kl, Tg, Pk, Ph, Sl, Ml, Jh.
- 132.10.2b **Medinilla clarkei** King var. **crassiramea** (M.R. Hend.) J.F. Maxwell, **M20** 156; *Medinilla crassiramea* M.R. Hend., **H35** 103; shrub to 2 m tall, usually epiphytic; montane forest; Cameron Highlands, Ph; endemic variety.

- 132.10.3 **Medinilla crassifolia** (Reinw. ex Blume) Blume, **M20** 157; *Medinilla hasseltii* Blume, **FMP1** 802; epiphytic shrub to 3 m tall; lowland to lower montane forest at 1500 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.10.4 **Medinilla pendens** Ridl., **FMP1** 803, **M20** 164; pendent shrubby epiphyte to 1.5 m long; lowland forest; Kota Tinggi District, Jh; endemic.
- 132.10.5 **Medinilla penduliflora** Ridl., **FMP1** 804, **M20** 167; epiphytic shrub to 6 m tall; montane forest above 1000 m; Cameron Highlands, Ph.
- 132.10.6 **Medinilla radicans** (Blume) Blume, **M20** 169; *Medinilla crassinervia* auct. non Blume, **FMP1** 804; shrub to 3 m tall; lowland to montane forest; Pk, Ph, Sl, Ml, Sp.
- 132.10.7 **Medinilla rubicunda** (Jack) Blume, **M20** 174; once from Pn.
- 132.10.8 **Medinilla scortechinii** King, **FMP1** 803, **M20** 175; epiphytic shrub to 3 m tall; lowland to montane forest at 1600 m, also on limestone; Kl, Tg, Pk, Ph, Sl, Ml, Jh; endemic.
- 132.10.9 **Medinilla selangorensis** J.F. Maxwell, **M20** 180; scandent shrub, often epiphytic; montane forest at 1600–2000 m; Ph, Sl; endemic.
- 132.10.10 **Medinilla speciosa** (Reinw. ex Blume) Blume, **FMP1** 801, **M20** 185; shrub to 3 m tall, often epiphytic; hill forest, 500–1200 m; Pn, Pk, Ph, Sl; endemic.
- 132.10.11 **Medinilla succulenta** (Blume) Blume, **M20** 187; epiphytic shrub; lowland to montane forest; Kl, Pk, Ph, Sl, Jh.
- 132.10.12a **Medinilla varingiifolia** (Blume) M.P. Nayar var. **bakhuizenii** (M.P. Nayar) J.F. Maxwell, **M20** 194; *Pachycentria speciosa* Ridl., **FMP1** 806; montane forest; Ph; endemic.
- 132.10.12b **Medinilla varingiifolia** (Blume) M.P. Nayar var. **varingiifolia**, **M20** 189; *Medinilla heterantha* King, **FMP1** 802 incl. var. *latifolia* King; shrub to 3 m tall, often epiphytic; montane forest 1000–2200 m; Tg, Pk, Ph; endemic.
- 132.10.13 **Medinilla venusta** King, **FMP1** 802 incl. var. *chionantha* (Stapf) Ridl., **M20** 195; shrub to 5 m tall, sometimes epiphytic; hill and montane forest at 500–1700 m; P. Langkawi, Pk, Ph, Sl.
- 132.11.1 **Melastoma imbricatum** Wall., **FMP1** 765, **C27** 299; shrub; mountains.
- 132.11.2 **Melastoma malabathricum** L., **FMP1** 764, **C27** 300; *Melastoma normale* Don, **FMP1** 765; *Melastoma polyanthum* Blume, **FMP1** 765; *Melastoma scabrum* Ridl., **FMP1** 766; shrub to 3 m tall; secondary growth in lowlands and hills; throughout.
- 132.11.3 **Melastoma molle** Wall.; **C27** 299; *Melastoma perakense* Ridl., **FMP1** 764 in part; low shrub; dense forests, often near streams; scattered in the north.

- 132.11.4 **Melastoma muticum** Ridl., **FMP1** 766, **C27** 300; *Melastoma perakense* Ridl., **FMP1** 764 in part; shrub; hill forest; widespread.
- 132.11.5 **Melastoma sanguineum** Sims, **C27** 301; *Melastoma schizocarpa* Ridl., **FMP1** 764; shrub to 2 m tall; open places; north and the east coast.
- 132.12.1a **Memecylon acuminatum** Sm. var. **acuminatum**, **FMP1** 817, **M21** 57, **TFM4** 187; tree to 15 m tall; lowland to montane forest at 1200 m; Kd, Kl, Pk, Ph, Sl, Jh, Sp; endemic.
- 132.12.1b **Memecylon acuminatum** Sm. var. **flavescens** C.B. Clarke, **M21** 58, **TFM4** 187; tree to 15 m tall; hill forest; Pn, Ml; endemic.
- 132.12.2 **Memecylon amplexicaule** Roxb., **FMP1** 815, **M21** 58, **TFM4** 187; tree to 18 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh, Sp.
- 132.12.3 **Memecylon caeruleum** Jack, **FMP1** 816, **M21** 61, **TFM4** 188; shrub or small tree to 12 m tall; lowlands near the sea; Ps, Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.
- 132.12.4 **Memecylon campanulatum** C.B. Clarke, **FMP1** 818, **M21** 63, **TFM4** 188; tree to 20 m tall; lowland forest; Tg, Ph, Sl, Ml, Jh, Sp.
- 132.12.5 **Memecylon cantleyi** Ridl., **FMP1** 818, **M21** 64, **TFM4** 188; shrub or tree to 15 m tall; lowland to lower montane forest at 1200 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.12.6 **Memecylon cinereum** King, **FMP1** 817, **M21** 66, **TFM4** 187; shrub or small tree to 4 m tall; hill and montane forest; Kl, Tg, Pk, Ph, Sl, ?Sp; endemic.
- 132.12.7 **Memecylon corticosum** Ridl., **M21** 67, **TFM4** 187; shrub to 3 m tall; lowland forest, also on limestone; Kl, Tg, Ph, Jh.
- 132.12.8a **Memecylon dichotomum** (C.B. Clarke) King var. **dichotomum**, **FMP1** 812 incl. var. *eugeniiflorum* (Ridl.) Ridl., **M21** 69, **TFM4** 189; tree to 12 m tall; lowland and hill forest to 1500 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 132.12.8b **Memecylon dichotomum** (C.B. Clarke) King var. **rotundatum** (Craib) J.F. Maxwell, **M21** 71, **TFM4** 189; *Memecylon gracilipes* (non C.B. Rob.) Ridl., **FMP1** 811; *Memecylon perakense* Merr., **M28** 132; tree to 6 m tall; Pk.
- 132.12.9a **Memecylon edule** Roxb. var. **edule**, **FMP1** 819, **M21** 72, **TFM4** 189; tree to 12 m tall; lowland forest, often near the sea; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.12.9b **Memecylon edule** Roxb. var. **ovatum** (Sm.) C.B. Clarke, **M21** 74, **TFM4** 190; *Memecylon laxiflorum* Wall. ex Ridl., **FMP1** 815; tree to 18 m tall; open places, often near the sea, also on limestone; Ps, Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.



- 132.12.10 **Memecylon excelsum** Blume, **M21** 76, **TFM4** 190; *Memecylon heteropleurum* Blume, **FMP1** 813; *Memecylon maingayi* C.B. Clarke, **FMP1** 813; tree to 18 m tall; lowland and hill forest to 1200 m; Kd, Kl, Tg, Pk, Ph, NS, Ml, Jh.
- 132.12.11 **Memecylon floridum** Ridl., **FMP1** 816, **M21** 78, **TFM4** 190; tree to 17 m tall; hill forest to 1200 m; Kl, Tg, Pk, Ph, Sl, NS, Sp; endemic.
- 132.12.12 **Memecylon fruticosum** King, **FMP1** 812, **M21** 79, **TFM4** 187; *Memecylon epiphyticum* King, **FMP1** 811; *Memecylon tenuifolium* Ridl., **FMP1** 812; shrub to 3 m tall, often epiphytic; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, NS, Sp.
- 132.12.13 **Memecylon garcinioides** Blume, **FMP1** 818, **M21** 81, **TFM4** 191; shrub or tree to 15 m tall; lowland and hill forest to 1200 m; Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.12.14 **Memecylon globosum** Bakh.f., **M21** 82, **TFM4** 186; shrub to 5 m tall; hill forest; Jh, Sp.
- 132.12.15 **Memecylon hullettii** King, **FMP1** 813, **M19** 83, **TFM4** 187; shrub to 3 m tall; lowland and hill forest; Jh; endemic.
- 132.12.16 **Memecylon intermedium** Blume, **FMP1** 819, **M21** 84, **TFM4** 192; tree to 25 m tall; lowland to montane forest at 1800 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh.
- 132.12.17 **Memecylon kunstleri** King, **FMP1** 814, **M21** 86, **TFM4** 192; tree to 20 m tall; lowland and hill forest; Kd, Pn, Pk, Sl; endemic.
- 132.12.18 **Memecylon lilacinum** Zoll. & Moritzi, **M21** 87, **TFM4** 192; *Memecylon laevigatum* Blume, **FMP1** 817; *Memecylon myrsinoides* Blume, **FMP1** 817; tree to 25 m tall; lowland and hill forest to 1200 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh.
- 132.12.19 **Memecylon malaccense** (C.B. Clarke) Ridl., **FMP1** 816, **M21** 90, **TFM4** 187; shrub to 4 m tall; only known from type, Ml; endemic.
- 132.12.20 **Memecylon megacarpum** Furtado, **M21** 91, **TFM4** 193; tree to 15 m tall; lowland to montane forest at 1800 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.12.21 **Memecylon minutiflorum** Miq., **FMP1** 818, **M21** 93, **TFM4** 193; tree to 25 m tall; lowland to montane forest at 1800 m; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.12.22 **Memecylon oleifolium** Blume, **FMP1** 814 '*oleaefolium*', **M21** 95, **TFM4** 193; tree to 12 m tall; lowland and hill forest to 1200 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

- 132.12.23 **Memecylon paniculatum** Jack, **M21** 101, **TFM4** 194; *Memecylon caloneuron* Miq., **FMP1** 812; tree to 30 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Tg, Pk, Ml, Jh, Sp.
- 132.12.24 **Memecylon pauciflorum** Blume, **FMP1** 816, **M21** 102, **TFM4** 194; tree to 8 m tall; lowland and hill forest to 1200 m, often on limestone; P. Langkawi, Pn, Kl, Tg, Pk, Sl, Jh, Sp.
- 132.12.25 **Memecylon pubescens** (C.B. Clarke) King, **FMP1** 814, **M21** 104, **TFM4** 195; tree to 30 m tall; lowland and hill forest to 1200 m; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 132.12.26 **Memecylon wallichii** Ridl., **FMP1** 813, **M21** 106, **TFM4** 187; *Memecylon longifolium* (*non* Cogn.) Ridl., **FMP1** 814; small tree to 5 m tall; lowland and hill forest; Pn, Kl, Pk, Ml; endemic.
- 132.13.1 **Ochthocharis borneensis** Blume, **FMP1** 775, **H16** 16; shrub to 2 m tall; mangroves, along river mouths; Jh, Sp.
- 132.13.2 **Ochthocharis decumbens** King, **FMP1** 775, **H16** 18; *Ochthocharis sylvestris* Ridl., **FMP1** 775; shrub to 1 m tall; wet and swampy places in the lowlands; Sl, Jh.
- 132.13.3 **Ochthocharis javanica** Blume, **FMP1** 775, **H16** 15; shrub to 2 m tall; mangroves and other tidal areas; Ml, Jh, Sp.
- 132.13.4 **Ochthocharis ovalifolia** Ridl., **FMP1** 774, **H16** 28; shrub; swampy lowland forest; only known from type (?lost), Sedenah, Jh; [doubtful species].
- 132.13.5 **Ochthocharis paniculata** Korth., **FMP1** 774, **H16** 20; shrub to 3 m tall; swampy lowland forest; Sp.
- 132.14.1 **Osbeckia chinensis** L., **FMP1** 762, **H13** 52; herb to 60 cm tall; open country; once from Padang Pa'anat, Kl.
- 132.14.2 **Osbeckia nepalensis** Hook., **H13** 67; shrub to 2 m tall; damp open places; Cameron Highlands, Ph; ? recent range extension, no collections before 1960s.
- 132.14.3 **Osbeckia rubicunda** Arn., **H13** 89; *Osbeckia perakensis* Ridl., **FMP1** 762; shrub about 5 m tall; montane forest; twice from Pk.
- 132.15.1 **Oxyspora acutangula** King, **FMP1** 769, **M25** 221; *Oxyspora hirticalyx* (Ridl.) Ridl., **FMP1** 769; shrub; montane forest; Pk; ?endemic.
- 132.15.2 **Oxyspora bullata** (Griff.) J.F. Maxwell, **M25** 216 and 221; *Allomorpha malaccensis* Ridl., **FMP1** 770; *Allomorpha bullata* (Griff.) Cogn., **FMP1** 771; shrub to 2 m tall; lowland forests; widespread; ?endemic.

- 132.15.3 **Oxyspora collina** (Ridl.) Ridl., **FMP1** 768; shrub to 2 m tall; lowland forest; P. Langkawi, Pk; ?endemic.
- 132.15.4 **Oxyspora curtisii** King, **FMP1** 769, **M25** 219; *Allomorphia alata* Scort. ex King, **FMP1** 770; shrub; montane forest; Kd, Kl, Pk; ?endemic.
- 132.15.5 **Oxyspora exigua** (Jack) J.F. Maxwell, **M25** 216, 220, 221 and 222; *Allomorphia exigua* (Jack) Blume, **FMP1** 770 incl. var. *capillaris* (Cogn. ex Ridl.) Ridl.; *Allomorphia porphyranthera* Ridl., **FMP1** 770; shrub to 1 m tall; rocky places in hill forests; Pn, Pk; ?endemic.
- 132.15.6 **Oxyspora floribunda** Ridl., **FMP1** 768; shrub to 5 m tall; montane forest; Pk; ?endemic.
- 132.15.7 **Oxyspora hirta** Ridl., **FMP1** 768; shrub; montane forest; Gg Tahan, Ph; ?endemic.
- 132.15.8 **Oxyspora hispida** Ridl., **FMP1** 767; shrub; montane forest; Gg Mengkuang Lebah, Sl; endemic.
- 132.15.9 **Oxyspora rosea** (Ridl.) Ridl., **FMP1** 768, **M25** 222; low shrub; lowland forest; Ph; ?endemic.
- 132.15.10 **Oxyspora scabrata** Ridl., **FMP5** 310; shrub; montane forest; Gg Tahan, Ph; ?endemic.
- 132.15.11 **Oxyspora sublepidota** (King) J.F. Maxwell, **M25** 218 and 222; *Oxyspora microcarpa* Ridl., **FMP1** 767; shrub to 3 m tall; montane forest; Ph.
- 132.15.12 **Oxyspora stellulata** King, **FMP1** 767; shrub or small tree to 8 m tall; montane forest; Kl, Pk.
- 132.15.13 **Oxyspora wrayi** (King) J.F. Maxwell, **M25** 218; *Campimia wrayi* (King) Ridl., **FMP1** 778; shrub about 1 m tall; montane forest; Taiping Hills, Pk; ?endemic.
- 132.16.1 **Pachycentria constricta** (Blume) Blume, **M20** 202; *Pachycentria tuberculata* Korth., **FMP1** 805; shrub to 1 m tall, on trees or rocks; lowland to montane forest; Pn, Kl, Pk, Ph, Sl, Ml, Jh, Sp.
- 132.16.2 **Pachycentria maingayi** (C.B. Clarke) J.F. Maxwell, **M20** 203; *Medinilla maingayi* C.B. Clarke, **FMP1** 803; epiphytic shrub to 1 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Ml, Jh, Sp.
- 132.16.3 **Pachycentria microsperma** Becc., **M20** 207; epiphytic shrub to 2 m tall; on limestone; once from Bt Cheras, Ph.
- 132.17.1 **Phyllagathis cordata** Ridl., **FMP1** 793, **K29** 223; creeping herb; on sandstone rocks and cliffs; Ulu Endau, Jh; endemic.

- 132.17.2 **Phyllagathis griffithii** (Hook.f. ex Triana) King, **FMP1** 793; 'herb' with slender creeping woody stem; lowland forest; widespread; ?endemic.
- 132.17.3 **Phyllagathis hispida** King, **FMP1** 794; creeping herb; lowland and montane forest; widespread; ?endemic.
- 132.17.4 **Phyllagathis magnifica** A. Weber, **W02** 189; *Phyllagathis tuberculata* auct. non King, **FMP1** 792 in part; shrub to 2.5 m tall; understorey of montane forest; Genting Highlands, Ph/SI; endemic.
- 132.17.5 **Phyllagathis praetermissa** A. Weber, **W04** 21; creeping herb; lowland to montane forest; Pk, Ph, Sl, NS.
- 132.17.6 **Phyllagathis rotundifolia** (Jack) Blume, **FMP1** 794; creeping herb; lowland and montane forest; widespread.
- 132.17.7 **Phyllagathis scortechinii** King, **FMP1** 793; creeping herb; montane forest; Pk, Sl; ?endemic.
- 132.17.8 **Phyllagathis stolonifera** Kiew, **K29** 224; *Phyllagathis maxwellii* B.C. Stone & A. Weber, **S70** 307; herb, sometimes stoloniferous to 1 m long; on rocks in hill and heath forest; Jh, Ph; endemic.
- 132.17.9 **Phyllagathis stonei** A. Weber, **W02** 192; unbranched 'shrub' to 2 m tall; hill and montane forest; Genting Highlands and Ulu Gombak, Sl; endemic.
- 132.17.10 **Phyllagathis tuberculata** King, **FMP1** 792 in part, **W02** 187; unbranched shrub to 2 m tall; on damp rocks in montane forest; Gg Bujong Malacca, Pk; endemic.
- 132.18.1 **Plethiandra sessiliflora** (Cogn.) Ridl., **FMP1** 806; epiphytic shrub to 1 m tall; mangroves or on limestone; Sl, Jh, Sp; endemic.
- 132.19.1 **Pogonanthera pulverulenta** (Jack) Blume, **FMP1** 805, **M20** 209; shrub to 1.5 m tall, on trees or rocks; lowland and hill forest; Pn, Pk, Ph, Sl, Jh.
- 132.20.1 **Pternandra coerulescens** Jack, **FMP1** 808, **M23** 26, **TFM4** 196; *Pternandra capitellata* Jack, **FMP1** 808; *Pternandra jackiana* Ridl., **FMP1** 808; tree to 20 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 132.20.2 **Pternandra echinata** Jack, **FMP1** 809 incl. vars. *bracteata* Ridl. and *pubescens* (Decne.) King, **M23** 42, **TFM4** 197; tree to 20 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 132.20.3 **Pternandra galeata** (Korth.) Ridl., **FMP1** 808, **M23** 49, **TFM4** 198; tree to 22 m tall; wet lowland forest, swamp forest; Ph, Jh.
- 132.20.4 **Pternandra tuberculata** (Korth.) M.P.Nayar, **M23** 73, **TFM4** 198; *Pternandra paniculata* Benth. ex Ridl., **FMP1** 809; tree to 20 m tall; lowland and hill forest to 1200 m; Pn, Tg, Pk, Sl, MI, Sp.

- 132.21.1 **Sarcopyramis napalensis** Wall., **FMP1** 792 'nepalensis', **H14** 180; herb to 15 cm tall; montane forest; Ph.
- 132.22.1 **Sonerila albiflora** Stapf, **FMP1** 782; subshrub to 50 cm tall; montane forest; widespread; ?endemic.
- 132.22.2 **Sonerila barbata** Ridl., **FMP1** 789; herb to 50 cm tall; lowland forest; Kl; ?endemic.
- 132.22.3 **Sonerila bellula** Ridl., **FMP1** 787; herb to 10 cm tall; on shady forest; Gg Banang, Jh; ?endemic.
- 132.22.4 **Sonerila bicolor** Stapf, **FMP1** 792; herb to 25 cm tall; hill forest; Pk, Sl; ?endemic.
- 132.22.5 **Sonerila brachyantha** Stapf, **FMP1** 791; herb to 20 cm tall; montane forest; widespread; ?endemic.
- 132.22.6 **Sonerila bracteata** Stapf, **FMP1** 788; hill forest; Pk; ?endemic.
- 132.22.7 **Sonerila caesia** Stapf, **FMP1** 788; herb to 10 cm tall; montane forest; Pk, Ph; ?endemic.
- 132.22.8 **Sonerila calaminthifolia** Stapf & King, **FMP1** 780; wiry herb to 30 cm tall; montane forest; Gg Batu Puteh, Pk; endemic.
- 132.22.9 **Sonerila calophylla** Ridl., **FMP1** 786; succulent herb to 20 cm tall; Gg Jerai, Kg; ?endemic.
- 132.22.10 **Sonerila calycula** Stapf, **FMP1** 789; herb to 10 cm tall; lowland forest; Ph; ?endemic.
- 132.22.11a **Sonerila capitata** Stapf var. **capitata**, **FMP1** 787; *Sonerila whittyi* M.R. Hend.; **H32** 249; herb to 30 cm tall; montane forest; Pk, Sl; ?endemic.
- 132.22.11b **Sonerila capitata** Stapf var. **longipetiolata** Ridl., **FMP1** 788; herb to 30 cm tall; montane forest; Kd, Ph; ?endemic.
- 132.22.12 **Sonerila congesta** Stapf, **FMP1** 785; herb to 10 cm tall; hill forest; Gg Chinchang, P. Langkawi; ?endemic.
- 132.22.13 **Sonerila costulata** Stapf, **FMP1** 790; herb to 5 cm tall; lowland forest; Jh; ?endemic.
- 132.22.14a **Sonerila cyclaminella** Stapf var. **canescens** Stapf, **FMP1** 786; herb to 30 cm tall; lower montane forest; Pk, Sl; ?endemic.
- 132.22.14b **Sonerila cyclaminella** Stapf var. **cyclaminella**, **FMP1** 786; herb to 30 cm tall; lower montane forest; Pk; ?endemic.

- 132.22.15 **Sonerila elatostemoides** Stapf, **FMP1** 791; herb to 30 cm tall; montane forest; Gg Babu, Pk; ?endemic.
- 132.22.16 **Sonerila elliptica** Stapf, **FMP1** 784; fleshy herb to 25 cm tall; on limestone; Pk; endemic.
- 132.22.17 **Sonerila erecta** Jack, **FMP1** 780; wiry herb to 50 cm tall; montane forest; Pn, Pk, Ph; endemic.
- 132.22.18 **Sonerila fraseri** Kiew, **K45** 68; herb to 12 cm tall; lower montane forest at 1500 m; Pine Tree Hill, Fraser's Hill, Ph; endemic.
- 132.22.19 **Sonerila gimlettei** Ridl., **FMP1** 789; herb to 15 cm tall; lowland forest; Kuala Lebir, Kl; ?endemic.
- 132.22.20 **Sonerila glabriflora** Stapf, **FMP1** 787; herb to 15 cm tall; Larut, Pk; ?endemic.
- 132.22.21 **Sonerila griffithii** C.B. Clarke, **FMP1** 786; slender fleshy herb to 15 cm tall; montane forest; Mt Ophir, Ml; ?endemic.
- 132.22.22 **Sonerila heterostemon** Naudin, **FMP1** 787; herb to 50 cm tall; lowland forest; widespread.
- 132.22.23 **Sonerila hirsuta** (Stapf) Ridl., **FMP1** 781; herb to 15 cm tall; montane forest; widespread; ?endemic.
- 132.22.24 **Sonerila integrifolia** Stapf, **FMP1** 788; herb; lowland to montane forest; common on the Main Range.
- 132.22.25 **Sonerila linearis** Hook.f., **FMP1** 780; slender herb to 40 cm tall; hill forest; Gg Jerai, Kd; endemic.
- 132.22.26a **Sonerila macrophylla** Stapf var. **laxipilosa** Stapf, **FMP1** 791; herb to 20 cm tall; forest; Pn, Pk; ?endemic.
- 132.22.26b **Sonerila macrophylla** Stapf var. **macrophylla**, **FMP1** 791; herb to 20 cm tall; forest; Pk; ?endemic.
- 132.22.27 **Sonerila microcarpa** Stapf, **FMP1** 790; herb to 15 cm tall; lowland forest; Pk; ?endemic.
- 132.22.28 **Sonerila mollis** Stapf, **FMP1** 783; herb to 50 cm tall; upper montane forest; Gg Batu Puteh, Pk; ?endemic.
- 132.22.29 **Sonerila moluccana** Roxb., **K09** 82; *Sonerila begoniifolia* Blume, **FMP1** 790; herb to 15 cm tall; lowland forest; widespread.
- 132.22.30 **Sonerila muscicola** Stapf, **FMP1** 785; herb to 15 cm tall; on trees; P. Langkawi; ?endemic.

- 132.22.31 **Sonerila nidularia** Stapf, **FMP1** 789; herb; montane forest; Pk; ?endemic.
- 132.22.32 **Sonerila nodosa** Ridl., **FMP1** 785; fleshy herb to 10 cm tall; montane forests; Pk; ?endemic.
- 132.22.33 **Sonerila pallida** Stapf, **FMP1** 783; herb; montane forest; scattered.
- 132.22.34a **Sonerila picta** Korth. var. **concolor** Ridl., **FMP1** 785; succulent herb to 30 cm tall; hill forest; widespread.
- 132.22.34b **Sonerila picta** Korth. var. **maculata** Ridl., **FMP1** 785; succulent herb to 30 cm tall; montane forest; widespread.
- 132.22.34c **Sonerila picta** Korth. var. **picta**, **FMP1** 785; succulent herb to 30 cm tall; lowland and hill forest; widespread.
- 132.22.35 **Sonerila populifolia** Stapf, **FMP1** 784; herb to 25 cm tall; lowland and hill forest.
- 132.22.36a **Sonerila prostrata** Ridl. var. **johorensis** (M.R. Hend.) M.P. Nayar, **N01** 806; *Sonerila johorensis* M.R. Hend.; **H33** 411; creeping herb; on rocks; Gg Panti, Jh; endemic.
- 132.22.36b **Sonerila prostrata** Ridl. var. **prostrata**, **FMP1** 782; slender mat-forming creeping herb; shady rocks; Cameron Highlands, Ph; Klang Gates, Sl; endemic.
- 132.22.37 **Sonerila ramosa** Ridl., **FMP1** 782; subshrub to 50 cm tall; montane forest; Gg Mengkuang, Sl; ?endemic.
- 132.22.38 **Sonerila repens** Stapf, **FMP1** 784; fleshy creeping herb; hill forest; Pk, Ph; ?endemic.
- 132.22.39 **Sonerila rudis** Stapf, **FMP1** 783; herb to 30 cm tall; montane forest; widespread; ?endemic.
- 132.22.40 **Sonerila saxosa** Stapf, **FMP1** 786; herb to 15 cm tall; on shady rocks; Penang Hill; ?endemic.
- 132.22.41 **Sonerila setosa** Ridl., **FMP1** 789; herb to 20 cm tall; montane forest; Gg Tahan, Ph; ?endemic.
- 132.22.42 **Sonerila succulenta** Stapf, **FMP1** 784; succulent herb; montane forest; Pk; ?endemic.
- 132.22.43a **Sonerila suffruticosa** Stapf var. **lasiantha** Ridl., **FMP1** 783; shrublet to 50 cm tall; montane forest; Gg Bubu, Sl; ?endemic.
- 132.22.43b **Sonerila suffruticosa** Stapf var. **suffruticosa**, **FMP1** 783; shrublet to 50 cm tall; montane forest; Gg Bubu, Pk; ?endemic.

132.22.44 **Sonerila tenera** Royle, **FMP1** 781; herb to 15 cm tall; on limestone; P. Langkawi.

132.22.45 **Sonerila tenuifolia** Blume, **FMP1** 781; herb to 30 cm tall; on damp rocks in montane forest; widespread.

### 133. MELIACEAE

133.1.1 **Aglaia angustifolia** Pannell, **TFM4** 211, **P04** 337, **FM12** 309; unbranched tree to 4 m tall; lowland and hill forest to 1000 m; Jh.

133.1.2 **Aglaia argentea** Blume, **FMP1** 405, **TFM4** 211, **P04** 125, **FM12** 237; *Aglaia splendens* (Koord. & Valetton) Koord. & Valetton, **FMP1** 405; tree to 30 m tall; lowland forest; widespread.

133.1.3 **Aglaia coriacea** Korth. ex Miq., **TFM4** 213, **P04** 297, **FM12** 295; tree to 5 m tall; lowland forest; Ph, Sl, Jh.

133.1.4 **Aglaia crassinervia** Kurz ex Hiern, **P04** 213, **FM12** 267; *Aglaia cinerea* King, **FMP1** 404; *Aglaia sp. 6*, **TFM4** 229; tree to 20 m tall; lowland and hill forest to 800 m; Kd, Pk, Ph, Sl, NS.

133.1.5 **Aglaia cucullata** (Roxb.) Pellegr., **TFM4** 214, **P04** 58, **FM12** 213; *Amoora cucullata* Roxb., **FMP1** 399; tree to 30 m tall; tidal rivers, back mangrove, lowland forest; Pk, Ph, Jh, Sp.

133.1.6 **Aglaia densitricha** Pannell, **P04** 90, **FM12** 224; tree to 5 m tall; lowland forest; only known from type, Belara F.R., Tg; endemic.

133.1.7 **Aglaia edulis** (Roxb.) Wall., **P04** 229, **FM12** 272; tree to 20 m tall; lowland and hill forest; Kd, Ph, Sl.

133.1.8 **Aglaia eleagnoidea** (A. Juss.) Benth., **P04** 143, **FM12** 243; shrub or tree to 10 m tall; once from Kaki Bukit, Ps.

133.1.9 **Aglaia elliptica** Blume, **TFM4** 214, **P04** 275, **FM12** 288; *Aglaia tembelingensis* M.R. Hend., **H33** 94; tree to 20 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, Jh, Sp.

133.1.10 **Aglaia erythrosperma** Pannell, **P04** 76, **FM12** 219; *Aglaia sp. 2*, **TFM4** 228; tree to 35 m tall; lowland and hill forest to 1300 m; Ph, NS, Jh.

133.1.11 **Aglaia eximia** Miq., **TFM4** 215, **P04** 121, **FM12** 236; *Aglaia argentea* Miq. var. *eximia* (Miq.) Miq., **FMP1** 405; tree to 15 m tall; lowland forest; Kd, Kl, Sl.

133.1.12 **Aglaia exstipulata** (Griff.) W.Theob., **TFM4** 215, **P04** 320, **FM12** 303; *Aglaia griffithii* (Hiern) Kurz, **FMP1** 409; tree to 25 m tall; lowland and hill forest to 1400 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.



- 133.1.13 **Aglaia forbesii** King, **FMP1** 406, **TFM4** 215, **P04** 207, **FM12** 265; *Aglaia humilis* King, **FMP1** 407, **TFM4** 218; tree to 35 m tall; lowland and hill forest to 900 m; widespread.
- 133.1.14 **Aglaia foveolata** Pannell, **P04** 211, **FM12** 266; *Aglaia sp.* 7, **TFM4** 230; tree to 22 m tall; lowland and hill forest to 900 m; Kd, Tg, Ph, Jh.
- 133.1.15 **Aglaia glabrata** Teijsm. & Binn., **P04** 177, **FM12** 254; tree to 20 m tall; lowland forest; Tg, Ph.
- 133.1.16 **Aglaia grandis** Korth. ex Miq., **TFM4** 217, **P04** 111, **FM12** 232; *Aglaia lanuginosa* King, **FMP1** 407; tree to 27 m tall; lowland forest; Kl, Pk, Ph, NS, Jh.
- 133.1.17 **Aglaia hiernii** King, **FMP1** 408, **TFM4** 218, **P04** 341, **FM12** 310; *Aglaia curtisii* King, **FMP1** 408; tree to 30 m tall; lowland and hill forest; Kd, Pk, Sl, Jh.
- 133.1.18 **Aglaia korthalsii** Miq., **P04** 167, **FM12** 251; *Aglaia sp.* 4, **TFM4** 228; tree to 10 m tall; lowland forest, also cultivated; Kd, Ph, Jh.
- 133.1.19 **Aglaia lawii** (Wight) Saldanha ex Ramamoorthy, **P04** 97, **FM12** 251; *Amoora maingayi* Hiern, **FMP1** 400; *Lansium pedicellatum* Hiern, **FMP1** 411; *Aglaia oligocarpa* Miq., **TFM4** 221; tree to 15 m tall; lowland forest; Kl, Pk, Sl.
- 133.1.20 **Aglaia leptantha** Miq., **P04** 201, **FM12** 228; *Aglaia glabriflora* Hiern, **FMP1** 404, **TFM4** 217; tree to 30 m tall; lowland forest; Kd, Pk, Ph, NS, Ml, Sp.
- 133.1.21 **Aglaia leucophylla** King, **FMP1** 403, **TFM4** 218, **P04** 226, **FM12** 271; *Aglaia kunstleri* King, **FMP1** 406; *Aglaia heteroclita* King, **FMP1** 410; tree to 20 m tall; lowland and hill forests to 700 m; Kd, Kl, Tg, Pk, Sl, NS, Jh.
- 133.1.22 **Aglaia macrocarpa** (Miq.) Pannell, **P04** 65, **FM12** 215; *Amoora rubescens* Hiern, **FMP1** 399; *Aglaia rubescens* (Hiern) Pannell, **TFM4** 223; tree to 35 m tall; lowland to montane forest at 1750 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.
- 133.1.23 **Aglaia macrostigma** King, **FMP1** 410, **TFM4** 219, **P04** 236, **FM12** 275; tree to 25 m tall; lowland and hill forest to 1000 m; Pk, Sl, NS; endemic.
- 133.1.24 **Aglaia malaccensis** (Ridl.) Pannell, **TFM4** 219, **P04** 70, **FM12** 216; *Amoora malaccensis* Ridl., **FMP1** 399; tree to 27 m tall; lowland and hill forest to 700 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.
- 133.1.25 **Aglaia membranifolia** King, **FMP1** 406, **TFM4** 221, **P04** 316, **FM12** 301; tree to 10 m tall; lowland forest; Pk, Ph.
- 133.1.26 **Aglaia monozyga** Harms, **P04** 311, **FM12** 299; tree to 10 m tall; once from Bt Kajang, Tg.

- 133.1.27 ***Aglaia multinervis*** Pannell, **P04** 84, **FM12** 222; *Amoora lanceolata* Hiern, **FMP1** 399; *Aglaia sp. 3*, **TFM4** 228; tree to 35 m tall; lowland forest to 400 m; Pk, Sl, Ml, Jh, Sp.
- 133.1.28 ***Aglaia odoratissima*** Blume, **FMP1** 404, **TFM4** 221, **P04** 237, **FM12** 276; tree to 12 m tall; lowland and hill forest to 1370 m; throughout.
- 133.1.29 ***Aglaia oligophylla*** Miq., **FMP1** 403, **TFM4** 222, **P04** 302, **FM12** 297; *Aglaia fusca* King, **TFM4** 216; tree to 20 m tall; lowland forest; Kd, Tg, Pk, Ph, Jh, Sp.
- 133.1.30 ***Aglaia pachyphylla*** Miq., **P04** 117, **FM12** 234; *Aglaia barbatula* Koord. & Valetton, **TFM4** 213; tree to 40 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Jh.
- 133.1.31 ***Aglaia palembanica*** Miq., **FMP1** 409, **TFM4** 223, **P04** 323, **FM12** 304; tree to 5 m tall; lowland forest; Ph, Sl, Ml, Sp.
- 133.1.32 ***Aglaia perviridis*** Hiern, **P04** 198, **FM12** 260; *Aglaia kingiana* Ridl., **FMP1** 404, **TFM4** 230; tree to 12 m tall; once from Gopeng, Pk.
- 133.1.33 ***Aglaia rubiginosa*** (Hiern) Pannell, **TFM4** 225, **P04** 92, **FM12** 260; *Amoora rubiginosa* Hiern, **FMP1** 398; tree to 35 m tall; lowland forest including peat swamps; Pk, Sl, Ml, Jh, Sp.
- 133.1.34 ***Aglaia rufibarbis*** Ridl., **FMP1** 409, **TFM4** 225, **P04** 344, **FM12** 312; tree to 10 m tall; lowland forest; Kl, Tg, Ph, Ml.
- 133.1.35 ***Aglaia rufinervis*** (Blume) Benth., **P04** 317, **FM12** 302; *Aglaia trichostemon* C. DC., **FMP1** 407, **TFM4** 227; tree to 15 m tall; lowland forest; Kd, Sp.
- 133.1.36 ***Aglaia rugulosa*** Pannell, **P04** 73, **FM12** 217; *Aglaia sp. 1*, **TFM4** 227; tree to 12 m tall; lowland and hill forest; Tg, ?Pk, Ph, Jh.
- 133.1.37 ***Aglaia scortechinii*** King, **FMP1** 403, **TFM4** 230, **P04** 175, **FM12** 254; tree to 30 m tall; lowland and hill forest; Pk, Sl.
- 133.1.38 ***Aglaia sexipetala*** Griff., **P05** 348, **FM12** 268; *Aglaia aspera* Teijsm. & Binn., **P04** 217; *Aglaia sp. 5*, **TFM4** 229; tree to 20 m tall; lowland forest; Ph, NS.
- 133.1.39 ***Aglaia silvestris*** (M. Roem.) Merr., **P04** 193, **FM12** 259; *Aglaia ganggo* Miq., **TFM4** 217; tree to 30 m tall; lowland and hill forest; Kd, Ph, Sl.
- 133.1.40 ***Aglaia simplicifolia*** (Bedd.) Harms, **P04** 306, **FM12** 298; ?*Beddomea racemosa* Ridl., **FMP1** 414; *Aglaia meliosmoides* Craib, **TFM4** 219; tree to 8 m tall; lowland forest; Tg, Sl, ?Jh, ?Sp.
- 133.1.41 ***Aglaia speciosa*** Blume, **P04** 164, **FM12** 250; tree to 35 m tall; lowland and hill forest; Pk, Ph.

- 133.1.42 ***Aglaia spectabilis*** (Miq.) S.S. Jain & Bennet, **P04** 79, **FM12** 221; *Amoora ridleyi* King, **FMP1** 398; *Aglaia ridleyi* (King) Pannell, **TFM4** 223; tree to 40 m tall; lowland forest to 300 m; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 133.1.43 ***Aglaia squamulosa*** King, **FMP1** 406, **TFM4** 225, **P04** 129, **FM12** 239; tree to 20 m tall; lowland forest; Pk, Ph, Jh.
- 133.1.44 ***Aglaia tenuicaulis*** Hiern, **FMP1** 408, **TFM4** 226, **P04** 313, **FM12** 301; tree to 10 m tall; lowland and hill forest to 1000 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Jh, Sp.
- 133.1.45 ***Aglaia teysmanniana*** (Miq.) Miq., **TFM4** 226, **P04** 108, **FM12** 231; tree to 15 m tall; lowland forest; P. Langkawi, Ph, Sl.
- 133.1.46 ***Aglaia tomentosa*** Teijsm. & Binn., **TFM4** 226, **P04** 331, **FM12** 306; *Aglaia cordata* Hiern, **FMP1** 409, **TFM4** 213; tree to 15 m tall; lowland and hill forest to 1000 m; Kd, Pn, Kl, Tg, Pk, Sl, NS, Jh, Sp.
- 133.1.47 ***Aglaia variisquama*** Pannell, **P04** 153, **FM12** 245; tree to 20 m tall; lowland forest; Pk, Jh.
- 133.1.48 ***Aglaia yzermannii*** Boerl. & Koord., **TFM4** 227, **P04** 244, **FM12** 278; *Aglaia salicifolia* Ridl., **FMP1** 403; rheophytic tree to 5 m tall; on riverbanks; Kl, Tg, Pk, Ph.
- 133.2.1 ***Aphanamixis polystachya*** (Wall.) R. Parker, **TFM4** 230, **FM12** 188; *Aphanamixis rohituka* (Roxb.) Pierre, **FMP1** 401; tree to 20 m tall; lowland to montane forest; Kd, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 133.2.2 ***Aphanamixis sumatrana*** (Miq.) Ridl., **FMP1** 400, **TFM4** 231, **FM12** 194; tree to 6 m tall; lowland and hill forest to 1000 m; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 133.3.1 ***Azadirachta excelsa*** (Jack) M. Jacobs, **TFM4** 233, **FM12** 357; tree to 50 m tall; lowland forest and villages; Pn, Pk, Sl, Ml.
- 133.4.1 ***Chisocheton amabilis*** (Miq.) C. DC., **TFM4** 234, **FM12** 163; tree to 17 m tall; lowland peat swamp and riparian forest; ?Sl, Ph, Jh.
- 133.4.2 ***Chisocheton ceramicus*** (Miq.) C. DC., **TFM4** 234, **FM12** 179; *Chisocheton macrothyrsus* King, **FMP1** 389; tree to 30 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS.
- 133.4.3 ***Chisocheton erythrocarpus*** Hiern, **FMP1** 388, **TFM4** 235, **FM12** 183; tree to 25 m tall; lowland forest, often near the sea; Kd, Kl, Tg, Ph, NS, Ml, Jh, Sp.
- 133.4.4a ***Chisocheton macrophyllus*** King ssp. **fulvescens** Mabb., **TFM4** 235, **FM12** 178; tree to 35 m tall; lowland to lower montane forest at 1100 m; Kd, Kl, Tg, Pk, Ph, Sl.

- 133.4.4b **Chisocheton macrophyllus** King ssp. **macrophyllus**, **FMP1** 389, **TFM4** 235, **FMI12** 179; tree to 35 m tall; lowland to lower montane forest at 1100 m; Pn, Kl, Tg, Pk, Ph, Sl, Sp.
- 133.4.5 **Chisocheton patens** Blume, **TFM4** 235, **FMI12** 167; *Chisocheton glomeratus* Hiern, **FMP1** 389; *Chisocheton divergens* Blume, **FMP1** 390; tree to 30 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, MI, Jh, Sp.
- 133.4.6 **Chisocheton pauciflorus** King, **FMP1** 387, **TFM4** 237, **FMI12** 173; tree to 16 m tall; lowland forest to 500 m; Kd, Pk, Ph, Sl, NS, MI, Jh, ?Sp; endemic.
- 133.4.7 **Chisocheton penduliflorus** Planch. ex Hiern, **FMP1** 388, **TFM4** 237, **FMI12** 145; sparsely branching tree to 11 m tall; lowland and hill forest to 900 m; Pn, Kl, Tg, Pk, Ph, NS, MI.
- 133.4.8a **Chisocheton pentandrus** (Blanco) Merr. ssp. **paucijugus** (Miq.) Mabb., **TFM4** 238, **FMI12** 183; *Chisocheton spicatus* Hiern, **FMP1** 387; tree to 18 m tall; lowland forest; Pn, Pk, Ph, Sl, Jh, Sp.
- 133.4.8b **Chisocheton pentandrus** (Blanco) Merr. ssp. **pentandrus**, **TFM4** 237, **FMI12** 182; tree to 18 m tall; dry lowland forest; only known from Jason Bay, Jh.
- 133.4.9 **Chisocheton perakensis** (Hemsl.) Mabb., **TFM4** 238, **FMI12** 171; *Megaphyllaea perakensis* Hemsl., **FMP1** 386; *Megaphyllaea annulata* (King) Ridl., **FMP1** 386; tree to 16 m tall; hill forest at 900–1150 m; Maxwell's Hill, Pk; endemic.
- 133.4.10 **Chisocheton sarawakanus** (C. DC.) Harms, **TFM4** 238, **FMI12** 161; *Chisocheton laxiflorus* King, **FMP1** 390; tree to 12 m tall; lowland forest to 250 m; Kl, Tg, Pk, Ph, Sl, NS, Jh.
- 133.4.11 **Chisocheton tomentosus** (Roxb.) Mabb., **TFM4** 238, **FMI12** 143; *Chisocheton princeps* Hemsl., **FMP1** 388; *Chisocheton rubiginosus* King, **FMP1** 389; tree to 21 m tall; lowland and hill forest; Pn, Kl, Pk, Ph, Sl, Jh.
- 133.5.1 **Chukrasia tabularis** A. Juss., **TFM4** 256, **FMI12** 355; *Chickrassia tabularis* (A. Juss.) Wight & Arn., **FMP1** 415; tree to 40 m tall; lowland forest; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS.
- 133.6.1 **Cipadessa baccifera** (Roth) Miq., **TFM4** 239, **FMI12** 59; small tree 2–6 m tall; once from base of Gg Baling, Kd.
- 133.7.1 **Dysoxylum acutangulum** Miq., **FMP1** 393, **TFM4** 240, **FMI12** 129; tree to 37 m tall; lowland and hill forest to 1000 m; Kd, Pk, Ph, Sl, Jh.
- 133.7.2 **Dysoxylum alliaceum** (Blume) Blume, **TFM4** 240, **FMI12** 106; *Dysoxylum thyrsoides* Griff., **FMP1** 393; *Dysoxylum costulatum* (Miq.) Miq., **FMP1** 394; *Dysoxylum pulchrum* Ridl., **FMP1** 395; tree to 38 m tall; lowland to montane forest at 1800 m; throughout.

- 133.7.3 **Dysoxylum angustifolium** King, **FMP1** 392, **TFM4** 242, **FMi12** 112; rheophytic tree to 9 m tall; banks of fast-flowing rivers; Kl, Tg, Ph; endemic.
- 133.7.4 **Dysoxylum arborescens** (Blume) Miq., **FMP1** 391, **TFM4** 242, **FMi12** 103; tree to 30 m tall; lowland and hill forest to 1500 m; throughout.
- 133.7.5 **Dysoxylum carolinae** Mabb., **M05** 305, **FMi12** 131; *Dysoxylum sp. 1*, **TFM4** 246; tree to 33 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, NS, Jh, Sp.
- 133.7.6 **Dysoxylum cauliflorum** Hiern, **FMP1** 396, **TFM4** 242, **FMi12** 86; tree to 30 m tall; lowland and hill forest; throughout.
- 133.7.7 **Dysoxylum cyrtobotryum** Miq., **TFM4** 243, **FMi12** 123; *Dysoxylum venulosum* King, **FMP1** 393; *Dysoxylum alternatum* Ridl., **FMP1** 397; tree to 27 m or more tall; lowland and hill forest to 800 m; throughout.
- 133.7.8 **Dysoxylum densiflorum** (Blume) Miq., **FMP1** 396, **TFM4** 243, **FMi12** 81; tree to 45 m tall; lowland and hill forest to 900 m; Pk, Ph, Sl, NS, Jh.
- 133.7.9 **Dysoxylum dumosum** King, **FMP1** 392, **TFM4** 243, **FMi12** 99; bushy tree to 6 m tall; lowland and hill forest to 1000 m; Tg, Pk, Ph, Sl, Jh.
- 133.7.10 **Dysoxylum excelsum** Blume, **TFM4** 244, **FMi12** 109; *Dysoxylum macrothyrsum auct. non* Miq., **FMP1** 394 incl. var. *microbotrys* (King) Ridl.; *Dysoxylum turbinatum* King, **FMP1** 244; tree to 36 m tall; lowland to montane forest at 1300 m; Pk, Ph, Sl, Jh.
- 133.7.11 **Dysoxylum flavescens** Hiern, **FMP1** 396, **TFM4** 244, **FMi12** 128; tree to 33 m tall; lowland and hill forest to 800 m; Ph, Sl, NS, Ml, Sp.
- 133.7.12 **Dysoxylum grande** Hiern, **TFM4** 244, **FMi12** 117; *Dysoxylum interruptum* King, **FMP1** 392; *Dysoxylum corneri* M.R. Hend., **H35** 92; tree to 39 m tall; lowland and hill forest to 1300 m; Kd, Tg, Pk, Ph, Sl, NS, Jh.
- 133.7.13 **Dysoxylum macrocarpum** Blume, **TFM4** 244, **FMi12** 116; tree to 33 m tall; lowland and hill forest to 1200 m; Tg, Sl, Ph, Jh.
- 133.7.14 **Dysoxylum mollissimum** Blume, **TFM4** 245, **FMi12** 90; tree to 33 m tall; lowland and hill forest to 800 m; Tg, Sl.
- 133.7.15 **Dysoxylum papillosum** King, **FMP1** 397, **TFM4** 245, **FMi12** 116; tree to 6 m tall; lowland forest; Tg, Pk, Ph, Sl.
- 133.7.16 **Dysoxylum rigidum** (Ridl.) Mabb., **TFM4** 245, **FMi12** 105; tree to 30 m tall; lowland forest; Pk, Ph, Sl, Jh.
- 133.7.17 **Dysoxylum rugulosum** King, **FMP1** 397, **TFM4** 245, **FMi12** 127; *Dysoxylum undulatum* M.R. Hend., **H33** 90; tree to 20 m tall; lowland and hill forest; Pk, Ph, Sl, Ml.

- 133.8.1 **Heynea trijuga** Roxb. ex Sims, **FMP1** 413, **FM12** 41; *Walsura tenuifolia* Ridl., **FMP1** 413; *Trichilia connaroides* (Wight & Arn.) Benth., **TFM4** 251; tree to 8 m tall; lowland forests; Kd, Pn, Tg, Pk, Ph, Sl, NS.
- 133.9.1 **Lansium domesticum** Corrêa, **FMP1** 411, **TFM4** 246, **FM12** 315; tree to 15 m tall; lowland forests, frequently cultivated; widespread.
- 133.10.1 **Munronia pinnata** (Wall.) W.Theob., **S59** 189, **TFM4** 202, **FM12** 30; shrublet to 65 cm tall; on limestone cliffs near the sea; once from near Tanjong Rhu, P. Langkawi.
- 133.11.1 **Pseudoclausena chrysoyne** (Miq.) T.P. Clark, **C17** 291, **FM12** 55; *Walsura chrysoyne* (Miq.) Bakh.f., **TFM4** 254; *Walsura multijuga* King, **FMP1** 412; tree to 12 m tall; lowland and hill forest to 600 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.
- 133.12.1 **Reinwardtiidendron cinereum** (Hiern) Mabb., **TFM4** 247, **FM12** 324; *Lansium cinereum* Hiern, **FMP1** 411; tree to 27 m tall; lowland and hill forest to 700 m; Kd, Kl, Pk, Ph, Sl.
- 133.12.2 **Reinwardtiidendron humile** (Hassk.) Mabb., **TFM4** 249, **FM12** 326; tree to 27 m tall; lowland and hill forest to 700 m; Kl, Tg.
- 133.13.1 **Sandoricum beccarianum** Baill., **TFM4** 249, **FM12** 353; *Sandoricum emarginatum* Hiern, **FMP1** 385; tree to 35 m tall; lowland forest, often near the sea; Sl, Ph, Jh, Sp.
- 133.13.2 **Sandoricum koetjape** (Burm.f.) Merr., **TFM4** 249, **FM12** 345; *Sandoricum indicum* Cav., **FMP1** 385; *Sandoricum maingayi* Hiern, **FMP1** 385; *Sandoricum nervosum* Blume, **FMP1** 385; tree to 45 m tall; lowland and hill forest, often cultivated; widespread.
- 133.14.1 **Toona ciliata** M. Roem.; **FM12** 366; tree to 35 m tall; lowlands and hills to 1500 m; P. Langkawi, Pk.
- 133.14.2 **Toona calantas** Merr. & Rolfe; **FM12** 370; tree; Ph, Sl; [status dubious, may be variety of *Toona ciliata*].
- 133.14.3 **Toona sinensis** (A. Juss.) M. Roem., **TFM4** 256, **FM12** 360; tree to 36 m tall; hill and lower montane forest, 600–1200 m; Pk, Ph.
- 133.14.4 **Toona sureni** (Blume) Merr., **TFM4** 258, **FM12** 363; *Cedrela febrifuga* Blume, **FMP1** 415; tree to 30 m tall; lowland and hill forest to 1200 m; Ps, P. Langkawi, Kd, Pn, Kl, Ph, Sl, Jh.
- 133.15.1 **Turraea breviflora** Ridl., **FMP1** 383, **TFM4** 252, **FM12** 29; suckering shrublet to 1 m tall; lowland and hill forest; Sl, Jh, Sp; endemic.

- 133.16.1 **Walsura pinnata** Hassk., **TFM4** 254, **C17** 276, **FMi12** 48; *Walsura neurodes* Hiern, **FMP1** 412; *Napeodendron altissimum* Ridl., **FMP1** 505; tree to 20 m tall; lowland and hill forest to 600 m; Pk, Ph, Sl, Ml, Jh.
- 133.16.2 **Walsura robusta** Roxb., **C17** 259, **FMi12** 47; tree to 25 m tall; lowland forest; once from Taman Negara, Ph.
- 133.17.1 **Xylocarpus granatum** J. König, **TFM4** 260, **FMi12** 378; *Carapa moluccensis auct. non* Lam., **FMP1** 414; tree to 15 m tall; mangroves; all coasts.
- 133.17.2 **Xylocarpus moluccensis** (Lam.) M. Roem., **TFM4** 260, **FMi12** 376; *Carapa obovata auct. non* Blume, **FMP1** 414; tree to 18 m tall; mangroves; all coasts.
- 133.17.3 **Xylocarpus rumphii** (Kostel.) Mabb., **TFM4** 260, **FMi12** 375; tree to 12 m tall; rocky headlands; Kd, Pn, Ph, NS, Jh, Sp.
134. MELIOSMACEAE
- 134.1.1 **Meliosma lanceolata** Blume, **FMP1** 516, **TFM4** 427, **FMi10** 704; *Meliosma levis* King, **FMP1** 515; tree to 25 m tall; lowland to lower montane forest at 1500 m; widespread.
- 134.1.2 **Meliosma lepidota** Blume ssp. **dolichomischa** (Vidal) Beusekom, **TFM4** 428, **FMi10** 696; *Meliosma monophylla* Ridl., **FMP1** 514; tree to 15 m tall; montane forest at 1200–1500 m; Pk, Ph; endemic subspecies.
- 134.1.3a **Meliosma pinnata** (Roxb.) Maxim. ssp. **arnottiana** (Wight) Beusekom, **TFM4** 429, **FMi10** 709; tree to 20 m tall; montane forest; Tapah Hills, Pk, and Cameron Highlands, Ph.
- 134.1.3b **Meliosma pinnata** (Roxb.) Maxim. ssp. **ridleyi** (King) Beusekom, **TFM4** 429 incl. var. *elegans* (Ridl.) L.G. Saw, **FMi10** 710; *Meliosma ridleyi* King, **FMP1** 516; *Meliosma elegans* Ridl., **FMP1** 515; shrub or tree to 20 m tall; lowlands and mountains; Sl, Jh, Sp.
- 134.1.4 **Meliosma rufopilosa** M.R. Hend., **H33** 96, **TFM4** 429, **FMi10** 714; tree to 30 m tall; montane forest at 1350–1700 m; Cameron and Genting Highlands, Ph/Sl.
- 134.1.5 **Meliosma simplicifolia** (Roxb.) Walp. ssp. **fruticosa** (Blume) Beusekom, **TFM4** 429, **FMi10** 701; *Meliosma elliptica* Hook.f., **FMP1** 514; *Meliosma lancifolia* Hook.f., **FMP1** 514; shrub or tree to 20 m tall; lowland to mountains; Kd, Pn, Pk, Ph, Sl, Ml, Sp.
- 134.1.6 **Meliosma sumatrana** (Jack) Walp., **TFM4** 430, **FMi10** 702; *Meliosma nitida* Blume, **FMP1** 515; tree to 20 m tall; lowland to lower montane forest at 1500 m; widespread.

## 135. MENISPERMACEAE

- 135.1.1 **Albertisia crassa** Forman, **FMi10** 181; liana; lowland forest; once each from Ph and Sl; endemic.
- 135.1.2 **Albertisia megacarpa** Diels *ex* Forman, **FMi10** 181; large liana; montane forest at 1500–1600 m; twice from Cameron Highlands, Ph; endemic.
- 135.2.1 **Arcangelisia flava** (L.) Merr., **FMi10** 210; *Arcangelisia loureiri* (Pierre) Diels, **FMP1** 107; large liana; lowland forest; Pk.
- 135.3.1 **Cocculus orbiculatus** (L.) DC., **FMi10** 231; *Cocculus ovalifolius* (Vahl *ex* Pers.) DC., **FMP1** 110; *Cocculus elegans* (Ridl.) Ridl.; **FMP2** 111; slender liana; sandy shores; both coasts.
- 135.4.1 **Coscinium fenestratum** (Gaertn.) Colebr., **FMi10** 215; *Coscinium wallichianum* Miers, **FMP1** 106; *Coscinium blumeanum* (*non* Miers *ex* Hook.f. & Thomson) Miq., **FMP1** 106 in part; large liana; lowland forest; widespread.
- 135.4.2 **Coscinium blumeanum** Miers *ex* Hook.f. & Thomson, **FMP1** 106 in part, **FMi10** 216; large liana; lowland forest; Pn, P. Pangkor.
- 135.5.1 **Cyclea elegans** King, **FMP1** 115, **FMi10** 239; slender climbing shrub; hill forest; Pk.
- 135.5.2 **Cyclea laxiflora** Miers, **FMP1** 114, **FMi10** 241; slender climber to 15 m long; forest margins, lowlands to mountains at 1200 m; widespread and common.
- 135.6.1 **Diploclisia kunstleri** (King) Diels, **FMP1** 107, **FMi10** 230; large liana to 30 m long; lowland and hill forest; Pk, Ph, Jh.
- 135.7.1 **Fibraurea tinctoria** Lour., **FMi10** 207; *Fibraurea chloroleuca* Miers, **FMP1** 105; large liana to 40 m long; lowland forest and forest margins; widespread and common.
- 135.8.1 **Hypserpa nitida** Miers, **FMi10** 219; *Hypserpa cuspidata* (Hook.f. & Thomson) Miers, **FMP1** 111; scandent shrub; lowland forest margins; widespread.
- 135.9.1 **Limacia oblonga** Hook.f. & Thomson, **FMP1** 109, **FMi10** 223; liana to about 10 m tall; lowland and hill forest; Pn & Pk to Sp.
- 135.9.2 **Limacia scandens** Lour., **FMi10** 223; *Limacia velutina* Hook.f. & Thomson, **FMP1** 109; liana; lowland forest margins; Pn to Sp.
- 135.10.1 **Pericampylus glaucus** (Lam.) Merr., **FMi10** 229; *Pericampylus incanus* (Colebr.) Hook.f. & Thomson, **FMP1** 112; *Pericampylus membranaceus* Miers, **FMP1** 112; *Cissampelos pariera auct. non* L., **FMP1** 114; liana; lowland forest; widespread.



- 135.11.1 **Pycnarrhena lucida** (Teijsm. & Binn.) Miq., **FMr10** 174; *Pycnarrhena fasciculata* (Miers) Diels, **FMP1** 108; scandent shrub; lowland forest; Pk, Ml.
- 135.12.1 **Stephania capitata** (Blume) Spreng., **FMP1** 113, **FMr10** 252; slender liana to 15 m long; lowland and hill forest; Pk, Jh.
- 135.12.2 **Stephania corymbosa** (Blume) Walp., **FMP1** 113, **FMr10** 249; slender liana; montane forest; Maxwell's Hill, Pk.
- 135.12.3 **Stephania japonica** (Thunb.) Miers var. **discolor** (Blume) Forman, **FMr10** 248; *Stephania hernandiifolia* (Willd.) Walp., **FMP1** 113; tuberous vine to 10 m long; lowland and hill forest; Pn.
- 135.12.4 **Stephania venosa** (Blume) Spreng., **FMr10** 248; *Stephania rotunda* (non Lour.) Miq., **FMP1** 113; slender vine to 20 m long; open country, on limestone; Ps, P. Langkawi.
- 135.13.1 **Tiliacora triandra** (Colebr.) Diels, **FMP1** 110, **FMr10** 185; slender liana; lowland and hill forest; P. Langkawi, Kd, Pn, Tg (once each).
- 135.14.1 **Tinomiscium petiolare** Hook.f. & Thomson, **FMP1** 105, **FMr10** 205; large liana reaching 30 m; forest margins; widespread and common.
- 135.15.1 **Tinospora crispa** (L.) Hook.f. & Thomson, **FMP1** 103, **FMr10** 194; liana reaching to 15 m; waste ground, forest margins; widespread, possibly introduced.
- 135.15.2 **Tinospora glabra** (Burm.f.) Merr., **FMr10** 199; liana; lowland forest; Ps, Kl, Pk.
- 135.15.3 **Tinospora macrocarpa** Diels, **FMP1** 103, **FMr10** 198; scandent shrub; lowland forest; Pn, Sl, Ml, Sp.

## 136. MENYANTHACEAE

- 136.1.1 **Nymphoides aurantiaca** (Dalzell) Kuntze, **C32** 211; *Villarsia aurantiaca* Ridl. ex C.B. Clarke, **FMP2** 435; small stoloniferous herb; shallow water; once each from P. Langkawi and Ph.
- 136.1.2 **Nymphoides indica** (L.) Kuntze, **C32** 207, **M47** 296; *Limnanthemum indicum* (L.) Griseb., **FMP2** 436; aquatic herb with floating leaves; ponds, ditches; widespread.
- 136.1.3 **Nymphoides parvifolia** (Griseb.) Kuntze, **C32** 210; *Limnanthemum parvifolium* Griseb., **FMP2** 436; small aquatic herb with floating leaves; ponds; scattered.

## 137. MOLLUGINACEAE

137.1.1 **Glinus oppositifolius** (L.) A. DC., **FM14** 270, **M47** 360; *Glinus mollugo* Fenzl, **FMP1** 867; herb to 45 cm tall; open sandy places; Kl, Ph.

137.2.1 **Mollugo pentaphylla** L., **FMP1** 867, **FM14** 268, **M47** 362; herb to 30 cm tall; sandy places, waste ground; widespread.

## 138. MONIMIACEAE

138.1.1 **Kibara coriacea** (Blume) Tul., **FMP3** 75, **FM10** 298, **TFM4** 261; *Kibara chartacea* Blume, **FMP3** 74; *Kibara serrulata* Perkins, **FMP3** 75; shrub or small tree to 13 m tall; lowland and hill forest to 1000 m; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

138.2.1 **Matthaea sancta** Blume, **FMP3** 73, **FM10** 323, **TFM4** 263; shrub or small tree to 7 m tall; lowland and hill forest to 1000 m; Pk, Ph, Sl, Jh, Sp.











