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RESEARCH ARTICLE

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Key to the families and genera of Malesian *Euphorbiaceae* in the wide sense

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Key words

Euphorbiaceae
keys
Pandaceae
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Phyllanthaceae
Picrodendraceae
Putranjivaceae

Abstract Identification keys are provided to the different families in which the *Euphorbiaceae* are split after APG IV. Presently, *Euphorbiaceae* in the strict sense, *Pandaceae*, *Peraceae*, *Phyllanthaceae*, *Picrodendraceae* and *Putranjivaceae* are distinguished as distinct families. Within the families, keys to the different genera occurring in the Malesian area, native and introduced, are presented. The keys are to be tested and responses are very welcome.

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INTRODUCTION

The *Euphorbiaceae* in the wide sense (sensu lato, s.lat.) were always a heterogeneous group without any distinct combination of characters. The most typical features are the presence of unisexual simple flowers and fruits that fall apart in various carpel fragments and seeds, leaving the characteristic columella on the plant. However, some groups, like the *Pandaceae* and *Putranjivaceae*, were morphologically already known to be quite unlike the rest of the *Euphorbiaceae* s.lat. (e.g., Radcliffe-Smith 1987). The *Putranjivaceae* formerly formed the tribe *Drypeteae* in the subfamily *Phyllanthoideae*, and the *Pandaceae* were classified as tribe *Galearieae* in the subfamily *Acalyphoideae*. Since the various APG classifications (The Angiosperm Phylogeny Group 2016), the subfamilies *Phyllanthoideae* and *Oldfieldioideae*, each with two ovules per locule, have become separate families, the *Phyllanthaceae* and *Picrodendraceae*, respectively. Both are now sister families (Stevens 2001 onwards), and might perhaps be united again. The species with a single ovule (*Pandaceae* excepted) were regarded as the *Euphorbiaceae* in the strict sense (sensu stricto, s.str.) and this family contains three subfamilies, the *Acalyphoideae*, *Crotonoideae* and *Euphorbioideae*. Wurdack & Davis (2009) showed that the *Rafflesiaceae* are embedded in the basal part of the phylogeny of the uni-ovulate *Euphorbiaceae*. Because *Rafflesiaceae* is extremely different from all *Euphorbiaceae*, the basal clade of the *Euphorbiaceae* is now regarded as a separate family, the *Peraceae*, so that *Rafflesiaceae* and *Euphorbiaceae* (s.str.) are still distinct families.

Explore this key and send remarks and improvements to: peter.vanwelzen@naturalis.nl.

An overview of all revisions in Malesian *Euphorbiaceae* s.lat. can be found on http://www.nationaalherbarium.nl/euphorbs.

KEY TO THE EUPHORBIACEOUS FAMILIES

1. Ovary with a single ovule per locule 2
1. Ovary with two ovules per locule 4
2. Fruits drupes. Flowers of both sexes with petals . . . . . 2. *Pandaceae*
2. Fruits capsules, sometimes drupes or berries, then flowers of both sexes lacking petals 3
3. Herbs, shrubs, lianas, trees, mono- or dioecious. Flowers in cauliflorous, ramiflorous, axillary, or terminal inflorescences . . . . . 1. *Euphorbiaceae*
3. Shrubs to trees, dioecious. Flowers in axillary fascicles . . . . . 3. *Peraceae*
4. Leaves opposite, without candelabriform (*Terminalia*-)branching pattern . . . . . 5. *Picrodendraceae* . . . . . (*Austrobuxus*, *Choriceras*)
4. Leaves spirally arranged to distichous (to opposite, then candelabriform (*Terminalia*-)branching pattern present (groups of leaves with short nodes in between, interspersed by long leafless internodes) 5
5. Stamens free, inserted around a broadly lobed or folded disc; stigmas broad, flat, fan- to almost kidney-shaped. Base of leaf blade asymmetric . . . . . 6. *Putranjivaceae* . . . . . (*Drypetes*; no further key)
5. Stamens free to united, outside the disc or among the disc lobes; stigmas slender and linear to sometimes spade- or petal-like (then base of leaf blade symmetric) 6
6. Stamens 28–68; filaments united. Stigmas petal-like . . . . . 5. *Picrodendraceae* (*Petalostigma*)
6. Stamens less than 20, filaments free to united. Stigmas slender and linear to spade-like, not petal-like 7
7. Stigmas spade-like. Sepals 4. Stamens 10–14 . . . . . 5. *Picrodendraceae* (*Kairothamnus*)
7. Stigmas slender and linear. Sepals 4 or more, but if 4 then stamens < 6 . . . . . 4. *Phyllanthaceae*

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1. KEY TO THE GENERA OF MALESIAN EUPHORBIACEAE (S.STR.)

This family is represented by 69 native genera and 8 introduced ones (in ***bolditalics***).

1. Leaves 3–7-foliolate, leaflets completely free 2
1. Leaves simple, at most palmatifid and lobes at least basally united (3–9 nerves) 3
2. Leaves 3–5(–7)-foliolate; leaflets abaxially with hair tuft domatia. Sepals free. Petals present. Stigma 1–1.2 mm long. — New Guinea . . . . . *Annesijoa*
2. Leaves 3-foliolate; leaflets abaxially without domatia. Sepals united. Petals absent. Stigmas 0.2–0.8 mm long. — Cultivated, escaped/abandoned, mainly W Malesia . . . . ***Hevea***
3. Flowers in a cyathium (a small cup-like and glandular involucre, the glands sometimes with petal-like appendages, enclosing several staminate flowers consisting of one stamen and one pistillate flower consisting of a single ovary). Cyathia surrounded by calyx-like, sometimes petal-like bracts, or sometimes even upper leaves red-coloured. Plants creeping to erect herbs, small shrubs, or often succulent and even cactus-like. Rich in white latex . . . . . *Euphorbia*
3. Flowers never in cyathia, usually separate, sometimes in dense heads, but then heads not surrounded by calyx-like or coloured bracts. Plants herbs, shrubs, climbers/lianas or trees. Succulent stem usually absent (*Falconeria* somewhat exceptional), thorn-shaped stipules absent. Latex absent or present, then red or white 4
4. Plant deciduous, flowering and fruiting while leafless; latex white. Branchlets thick, soft, spongy, shrivelled when dry . . . . . *Falconeria*
4. Plant deciduous or not, flowering and fruiting while (just) in leaf; latex absent to variably coloured (watery, white, red). Branchlets not spongy 5
5. Lianas or plants straggling, stellate or lepidote hairs or stinging hairs present in at least one part 6
5. (Prostrate) herbs, shrubs or trees, stellate or dendritic hairs present or not, stinging hairs generally absent (present in *Croton hirtus*, a herb, and some *Macaranga* species, trees) 13
6. Stellate or lepidote hairs present. Either extrafloral nectaries present on upper surface of leaf near base or glands abaxially between petiole and leaf blade 7
6. Stinging hairs present. Extrafloral nectaries absent, glands absent at lower surface, can be present on upper surface between petiole and leaf blade 8
7. Extrafloral nectaries as a pair of glands present abaxially between blade and petiole. Inflorescences bisexual (pistillate basally, staminate apically, latter part breaking off in fruit). Petals present only in staminate flowers. Ovaries and fruits 3-locular . . . . . *Croton* (*C. caudatus*)
7. Extrafloral nectaries as glandular areas, basally at upper surface leaf blade; no glands at lower surface between petiole and blade. Inflorescences unisexual. Petals absent. Ovaries and fruits 2-locular . . . . . *Mallotus* (*M. repandus*)
8. Inflorescences capitate, enveloped by 2 large membranous bracts. Leaves pinnatisect . . . . . *Dalechampia*
8. Inflorescences spikes, panicles or cymes, sometimes with large bracts at end of inflorescence (not enveloping inflorescence). Leaves not dissected 9
9. Leaves coriaceous. Inflorescences with floral bracts > 2 cm long at end of inflorescence. Stamens connate *Omphalea*
9. Leaves papery. Inflorescences with floral bracts < 1 cm long. Stamens free 10
10. Leaf base with 2 raised glands on upper surface. Stamens 8–13. Capsules 4-locular, winged or horned *Plukenetia*
10. Leaf base without apically raised glands on upper surface. Stamens 2 or 3. Capsules 3-locular, without wings or horns 11
11. Inflorescences terminal, but sometimes on leafless side-branches and appearing laterally. Staminate calyx 4- or 5-lobed; stamens 2, subsessile, filaments slender, connective not thickened, nor elongated above thecae. Pistillate calyx lobes c. 2 mm long . . . . . *Pachystylidium*
11. Inflorescences axillary or leaf-opposed. Staminate calyx 3-lobed; stamens 3, filaments thickened, connective thick, appendaged above thecae. Pistillate calyx lobes > 2 mm long, especially in fruit 12
12. Leaf blades ovate and basally cordate to obovate with a narrow cordate base, widest above leaf insertion. Pistillate calyx with 3 lobes, < 1 cm long in fruit; styles free, stigmas papillate, persistent . . . . . *Cnesmone*
12. Leaf blades broadly cordate, widest at leaf insertion. Pistillate calyx with 6 lobes, > 1 cm long in fruit; styles connate into an obconic structure, stigmas not papillate, nor persistent. . . . . *Megistostigma*
13. Leaves palmatifid for at least the upper third of the leaf blade; basal nerves palmate, supporting lobes 14
13. Leaf blades not palmate or palmatifid for not more than the upper third of the leaf blade; nerves usually pinnate (to palmate) 19
14. Leaf margins entire or serrate (sometimes only vein endings extruding); if entire then leaves peltate and flowers without petals 15
14. Leaf margins entire or with lobe-like serration; leaves not peltate (except *Jatropha podagrica* peltate, with petals) 16
15. Leaves with 7 or 9 lobes. Stipules united, opposite to leaves, encircling stem. Leaf blades underneath lacking glandular scale hairs. Stamens > 100, arising from dichotomously splitting androphores . . . . . ***Ricinus***
15. Leaves with 2, 3 or 5 lobes. Stipules beside petiole base, not united and not encircling stem or united and encircling stem. Leaf blades underneath with glandular scale hairs. Stamens 1–60, not branching . . . . . *Macaranga*
16. Insertion of petiole with base of leaf blade with 1 or 2 raised glands 17
16. Insertion of petiole with base of leaf blade without glands 18
17. Leaf blades 5- or 7-lobed, margin laxly serrate with almost lobe-like serrations. Petals absent (sepals like petals) . . . . . ***Cnidoscolus***
17. Leaf blades 3- or 5-lobed, margin entire. Petals > 1 cm long . . . . . ***Vernicia***
18. Leaves divided to 2/3 only, either peltate (> 2 mm) and without glandular hairs or basally attached and with glandular hairs. Petals (red or greenish white) present . . . . . ***Jatropha***
18. Leaves almost completely divided, basally attached or slightly (2 mm) peltate, without glandular hairs. Petals absent . . . . . ***Manihot***
19. All inflorescences/infructescences opposite to leaf, or seemingly opposite but then in axil of stipule-like leaf (often caducous) and up to 2 mm broad (several *Mallotus* species have very dimorph opposite leaves, of which the reduced one bears the inflorescence axillary, these all 4 or more mm wide) 20
19. Inflorescences/infructescences in axils of (fallen) leaves to rami- or cauliflorous 23

20. Woody herbs to subshrubs. Leaf blade margins with small, dense teeth. Ovaries and fruits with 2 longitudinal rows of small spines per lobe . . . . . *Microstachys*
20. Shrubs to trees. Leaf blade margins without dense teeth. Ovaries and fruits smooth or with randomly dispersed (long) spines 21
21. Inflorescences up to 1 cm long, opposite to alternate leaves, 2 stipules per node. Ovaries and fruits smooth. Staminate sepals 5, stamens up to 25(–60). . . . . *Suregada*
21. Inflorescences 2–2.6 cm long or up to 12 cm long, in axil of stipuliform leaf (leaves opposite with 4 stipules in between per node). Ovaries and fruits echinate. Staminate sepals 3 or 4, stamens c. 60 or c. 98 22
22. Inflorescences up to 12 cm long. General indument of simple (or glandular hairs). Upper leaf blade without extrafloral nectaries, lower surface without glandular scale hairs . . . . . *Hancea*
22. Inflorescences 2–2.6 cm long. General indument of simple and stellate hairs. Upper leaf blade with 2–4 basal extrafloral nectaries, lower surface usually with glandular scale hairs . . . . . *Mallotus* (*M. brachythyrsus*)
23. Leaves (sub)opposite, in (pseudo)whorls or in groups of three 24
23. Leaves alternate. Check especially mature leaves along thicker branches, leaves at base and especially at end of branches sometimes seemingly opposite 33
24. Leaves opposite 25
24. Leaves in (pseudo)whorls or in groups of three 30
25. Lower surface of leaves and/or inflorescences with stellate hairs and/or glandular scales (microscope or hand lens!, sometimes only along the basal margin!; check especially young parts). Leaf blades often peltate . . . . . *Mallotus*
25. Leaves and inflorescences glabrous or with simple hairs. Leaf blades not peltate 26
26. Stipules 2 per node, interpetiolar. 27
26. Stipules 2 per leaf, 4 per node 29
27. Stipules large, ovate with cordate base, 8–45 by 5–36 mm. Inflorescence either staminate or pistillate, up to 22 cm long, not condensed . . . . . *Moultonianthus*
27. Stipules small, triangular, 3.2–13 by 1–3.3 mm. Inflorescences either staminate or pistillate and then condensed, up to 5 or 3 cm long, respectively, or inflorescences per node with several staminate and a single pistillate flower, up to 34 cm long 28
28. Staminate inflorescences very condensed, up to 3 cm long; pistillate inflorescences consisting of a single flower. . . . . *Erismanthus*
28. Inflorescences with several staminate flowers per node and a single pistillate flower, up to 34 cm long *Syndiophyllum*
29. Latex white. Plants completely glabrous (check young parts). Petiole 4 or more mm long. Stamens 3. Sepals 3. Ovaries and fruits smooth. . . . . *Excoecaria*
29. Latex absent. Plants partly with some hairs. Petiole 1–4 mm long. Stamens > 100 in 4–7 dichotomously branching groups. Sepals 5. Ovaries and fruits echinate . . . . . *Lasiococca*
30. Hairs stellate or lepidote (can be very small), sometimes next to simple ones. Stipules present (often early caducous) 31
30. Hairs only simple, or very small ones lepidote, but then stipules absent 32
31. Hairs stellate. Leaves glabrous beneath, main veins perpendicular to midrib. Stamens 25–30 on a columnar receptacle, not inflexed in bud. Ovaries/fruits 2-locular, stigmas apically twice bilobed . . . . . *Borneodendron*
31. Hairs stellate or lepidote. Leaves densely hairy underneath (leaf blade often not visible), veins ascending. Stamens 10–20, free, inflexed in bud. Ovaries/fruits 3-locular, stigmas apically once split . . . . . *Croton*
32. Petioles 4–185 mm long, apically but more so basally pulvinate. Leaf blades ovate to elliptic to obovate, 4.6–51 by 2–26.5 cm. Stamens free, 31–40. Ovaries and fruits with at most somewhat knobbly surface. Seeds surrounded by a sarcotesta . . . . . *Blumeodendron*
32. Petioles 1–4 mm long, completely pulvinate. Leaf blades obovate, 8–20 by 2.6–5.7 cm. Stamens in 4–7 groups, splitting dichotomously to > 100 anthers. Ovaries and fruits echinate. Seeds without any fleshy layer or caruncle . . . . . *Lasiococca*
33. Stipules absent (no scars, but sometimes bud scales may resemble stipules) or very minute, leaving no obvious scar 34
33. Stipules present, 2 or united into 1, often early caducous, leaving sometimes small scars at both sides of petiole 42
34. Petals present in staminate and pistillate flowers, velutinous on both sides. Stamens connate into an androphore. Fruits drupaceous. — New Guinea . . . . . *Fontainea*
34. Petals absent or present in both sexes or only the staminate flowers, if present glabrous. Stamens free (sometimes adnate when young, but no androphore). Fruits capsular. — Malesia 35
35. Latex abundant, white. Fruits drupes. Staminate calyx cup-shaped, 2-lobed, stamens enclosed in calyx. Petals and discs absent. Ovaries 3–21-locular. . . . . *Pimelodendron*
35. Latex absent or inconspicuous, not white. Fruits capsules. Staminate sepals 3–6, but irregularly splitting in 2 in *Botryophora*, stamens usually exserted from sepals. Petals absent or present, disc always present. Ovaries 1–5-locular . 36
36. Staminate calyx irregularly dehiscing into 2 parts; stamens with sturdy filament with on top an umbrella-shaped connective with 4 equal thecae hanging from its toothed edge. Pistillate sepals 3 or 4, occluded by big disc. Fruits 3- (or 4-) cornered, ovoid, glabrous . . . . . *Botryophora*
36. Staminate sepals 3–6; stamens normal in appearance with apically 2 thecae, or 4 thecae on one side of a triangular connective, inner pair smaller. Pistillate sepals 3–6, well-visible (disc inside). Fruits not cornered, but sometimes grooved, ribbed or spiny but then densely hairy, ovoid to usually subglobose or somewhat lobed 37
37. Fruits densely hairy, sometimes grooved or with soft spines. Connectives triangular, with on one side 2 pairs of thecae, of which inner smaller; among stamens disc glands with long apical hairs. Pistillate flowers occasionally with staminodes; disc densely hairy . . . . . *Ptychopyxis*
37. Fruits glabrous to somewhat hairy and glabrescent, smooth or somewhat knobbly. Connectives narrow or broad (not triangular) with 2 thecae along it; disc glands extra-staminal or among stamens, but always glabrous. Pistillate flowers without staminodes; disc glabrous 38
38. Stipules present as bud-like enations. Leaf blades sometimes (basally) lobed, with extrafloral nectaries along margin abaxially, basal ones larger. Stamens with thecae almost confluent on top of connective. Fruit columella, after dehiscence, with strand-like remnants of sutures basally . . . . . *Baliospermum*
38. Stipules absent. Leaf blades not lobed, with or without extrafloral nectaries adaxially. Stamens with thecae along connective. Fruit columella basally without extensions 39
39. Fruits 2–6 cm wide by 2–4.6 cm high, wall 1–7 mm thick. Staminate disc glands among stamens, clearly separate or giving a ruminate impression of convex receptacle. Leaf

blades with 2 extrafloral nectaries (small) adaxially near base and often additional, even smaller ones along midrib and margin . . . . . *Blumeodendron*

39. Fruits 1–1.4 cm wide by 0.8–1 cm high, wall at most 1 mm thick. Staminate disc glands extra-staminal. Leaf blades without extrafloral nectaries 40

40. Stipules absent or otherwise minute, leaving no obvious scar. When cultivated leaf blades variegated or multi-coloured, then often linear or with side lobes or a detached apex, wild forms with long obovate blades to 30 cm long. Stamens 15–100, connectives broad with on top 2 touching thecae . . . . . *Codiaeum*

40. Stipules absent. Leaf blades not variegated, not lobed and no detached apex, up to 22 cm long. Stamens 14–50, connectives slender with thecae alongside it 41

41. Flowers in umbellate unbranched thyrses (raceme-like), all flowers branching off from same node in the inflorescence, sometimes one or two flowers branching off from a lower node. Pistillate sepals without long glandular fimbriae along margin, not or slightly accrescent in fruit to 2.8 by 1.3 mm. Fruits slightly hairy or glabrous; seeds with or without caruncle. Leaf blades never panduriform . . . . . *Blachia*

41. Flowers in terminal unbranched thyrses (raceme-like), with flowers at various nodes. Pistillate sepals accrescent in fruit to 15 by 10 mm, with long glandular fimbriae along margin. Fruits glabrous; seeds carunculate. Leaf blades often panduriform . . . . . *Strophioblachia*

42. Leaves and/or inflorescences with stellate hairs, lepidote hairs, glandular scales and/or scale hairs (microscope or hand lens!, sometimes only on lower surface of leaf blades) 43

42. Leaves and/or inflorescences glabrous or with simple hairs only 65

43. Leaf blades willow-like (oblong, very narrow, 0.5–2.5 cm wide, 5–14 times longer than wide), lower surface with scale hairs, margin (indistinctly) serrate with an abaxial gland in each tooth. Stamens united into a thick androphore from which branches split off that split several times dichotomously. — Shrubs along and especially in floating rivers . . . . . *Homonoia*

43. Leaf blades usually not willow-like, usually broader and less than 5 times as long as wide, lower surface without or with scale hairs (then glandular), margins variable, sometimes with glands in teeth. Stamens not bifurcating dichotomously 44

44. Connection or near insertion petiole-leaf blade with glands or extrafloral nectary areas (round, flat or slightly hollow, generally black round/elliptic areas in dry leaves) on upper or lower surface (check various leaves) 45

44. Connection or near insertion petiole-leaf blade no glands or extrafloral nectary areas 60

45. Glands or extrafloral nectary areas near petiole insertion on lower leaf blade surface 46

45 Glands or extrafloral nectary areas near petiole insertion on upper leaf blade surface 50

46. Extrafloral nectary areas basally present. Staminate flowers in dense glomerules per inflorescence node 47

46. (Slightly) raised to stipitate glands basally present. Staminate flowers in loose groups per inflorescence node . 48

47. Older stipules with an entire margin. Fruits echinate. Stamens 3–5 on a short narrow androphore, filaments thread-like; pistillode small. Pistillate sepals not accrescent in fruit; stigmas apically not splitting or only splitting once . . . . . *Cephalomappa*

47. Especially older stipules or all with an erose to pectinate margin (lobed). Fruits smooth. Stamens 4–8 circular on a broad androphore, filaments often sulcate (thread-like in *K. laevigatum*); pistillode absent to small. Pistillate sepals often accrescent in fruit; stigmas several times bifid to multifid . . . . . *Koilodepas*

48. Inflorescences only one sex. Fruits drupes (indehiscent). Leaf blades peltate or not. Branches hollow or solid. Petals absent. Stamens united into an androphore, thecae separate, spreading out in horizontal plane . . . . . *Endospermum*

48. Inflorescences basally pistillate, apically staminate (this part breaking off in fruit), sometimes unisexual (pistillate). Fruits dehiscing capsules. Leaf blades not peltate. Branches solid. Petals present (at least in staminate flowers). Stamens free or united into an androphore and then thecae united, parallel to androphore 49

49. Stamens united into an androphore, straight in bud; anthers 4-thecate. Indumentum dense, stellate. Leaf blade not to usually distinctly 3-lobed. Pistillate flowers with petals and disc, short gynophore underneath ovary . . . *Chrozophora*

49. Stamens free, inflexed in bud; anthers 2-thecate. Indumentum sparse to dense, stellate to lepidote. Leaf blade not lobed. Pistillate flowers with or without petals, disc present, gynophore absent . . . . . *Croton*

50. Leaf blade basally with extrafloral nectary areas (black areas when leaves dry), lower surface usually with glandular disc hairs 51

50. Leaf blade basally with (elevated) glands, lower surface without glandular disc hairs 52

51. Stamens 1–3, anthers 3-thecate. Hairs simple. Stem hollow. Inflorescences branched, axillary. Fruit with a glandular patch per locule . . . . . *Macaranga* (*M. aëtheadenia*)

51. Stamens 15–130, anthers 2-thecate. Stellate hairs present (sometimes few) on lower leaf surface and/or inflorescences (microscope or hand lens!). Stems solid. Inflorescences not-branched to branched, mainly terminal. Fruits without glandular patches . . . . . *Mallotus*

52. Leaf blade margin (indistinctly) dentate/serrate (sometimes only apically), observe with hand lens, especially in *Trigonostemon balgooyi* difficult to see (plant long hairy) . . 53

52. Leaf blade margin entire 56

53. Leaf blade sometimes 3-lobed, base with a group of protruding glands. Inflorescences up to 54 cm long. Petals lacking. Ovary 2- or 3-locular. Stamens 200–250; connectives abaxially with a gland . . . . . *Melanolepis*

53. Leaf blade not lobed, base with 2 glands. Inflorescences up to 40 cm long. Petals absent (ovary 2-locular) or present (ovary 3-locular). Stamens 5–30; connectives without an abaxial gland (sometimes extending apical cells on connective with purple droplets) 54

54. Petals absent. Ovaries 2-locular. Staminate flowers with 5–9 free stamens and a pistillode. Fruits grey hairy, 1.7–4.1 cm high. Seeds with a thin red aril . . . . *Neoscortechinia*

54. Petals present. Ovaries 3-locular. Staminate flowers either with 5 united stamens on top of an androphore or 10–30 stamens of which the outer free and inner united; pistillode absent. Fruits with sparse hairs, brown when mature, up to 2.1 cm high. Seeds naked, without aril/sarcotesta or caruncle 55

55. Trees up to 20 m tall, exuding a red sap. Petals white. Inflorescences 20–40 cm long. Stamens 10–30, of which the outer free and inner united. Indumentum of hairs of one length . . . . . *Paracroton*

55. Shrubs or small trees, up to 3 m tall, without sap. Petals deep purple. Inflorescences up to 9 cm long. Stamens 5, united on top of an androphore. Indumentum of long and short hairs . . . . . *Trigonostemon* (*T. balgooyi*)

56. Dendritic hairs sometimes present in area of terminal bud (next to stellate and simple hairs). Inflorescence with basally 2 large subopposite bracts of unequal size (3.7–10.7 by 1.9–5 cm), caducous. Inflorescences cymose. — N Moluccas (Halmahera) . . . . . *Weda*
56. Only simple and/or stellate hairs present. Inflorescences without large basal bracts. Inflorescence (thyrsoid) racemes to panicles 57
57. Stamens 5–10, in a single whorl, free, folded in bud. Petals absent. Pistillate calyx usually with epicalyx (basal small triangular elements), sepals dark red, enlarging in fruit to 5 cm long. Fruits up to 2 cm high . . . . . *Epiprinus*
57. Stamens 7–10 (united in 2 whorls) or 17 to many, in various whorls, especially inner ones united, straight in bud. Petals present. Pistillate calyx usually green, lacking epicalyx, not enlarging in fruit. Fruits either unknown (*Alphandia*) but probably not big, or 3.5–6.5 cm high 58
58. Leaves elliptic to slightly obovate, not lobed, blade 5.7–18 cm long, pinnately veined. Anthers geniculate on abaxially thickened connective, thecae on front of connective. Fruits probably less than 2 cm high . . . . . *Alphandia*
58. Leaves (except in cultivated plants) ovate, often 3- or 5-lobed, blade 4–40 cm long, basally 3- or 5-veined. Anthers straight, connective not thickened, with thecae alongside. Fruits 3.5–6.5 cm high 59
59. Stellate hairs all over. Leaf blades often 3- or 5-lobed. Stamens 17–32, in 4 whorls. Pistillate flowers with 5 distinct disc glands. Seeds marbled . . . . . *Aleurites*
59. Stellate hairs only on lower leaf blade surface. Leaf blades not lobed. Stamens 7–10 in 2 whorls. Pistillate flowers with disc glands as minute triangular protuberances. Seeds not marbled . . . . . *Reutealis*
60. Leaves white underneath (when dry), coarsely double toothed (to subentire). Inflorescences bisexual with basally at most a few solitary pistillate flowers and staminate flowers in a dense apical head. Stamens 4. Stigmas apically twice divided . . . . . *Cladogynos*
60. Leaves various coloured underneath when dry, some whitish, but then inflorescences unisexual, margin entire to dentate/serrate. Inflorescences uni- or bisexual (then basally pistillate flowers), but staminate flowers never in a dense apical head. Stamens 5–130. Stigmas entire or apically split once 61
61. Plants exuding red sap. Petals present in staminate and pistillate flowers. Stamens 10–30, of which the outer free and inner united . . . . . *Paracroton*
61. Plants without obvious sap. Petals only in staminate flowers or absent in both sexes. Stamens 5–10, c. 75 or 110–130, free, on receptacle or a torus 62
62. Leaf blades (sub)glabrous to somewhat hairy below, not peltate. Staminate flowers with 5–10 stamens and a pistillode. Plants not spiny 63
62. Leaf blades densely hairy underneath, base often peltate. Staminate flowers with 75 or more stamens, no pistillode. Plants spiny or not 64
63. Leaf blades 5.6–32.5 cm long, margin shallowly (to deeply) laxly dentate to crenate, lower surface subglabrous to slightly sericeous to subhirsute. Ovaries and fruits 3- (or 4-) locular . . . . . *Cheilosa*
63. Leaf blades 2.3–17 cm long, margin usually entire to in upper 2/3 irregularly crenulate to sometimes dentate, lower surface subglabrous. Ovaries and fruits 2-locular . . . . . *Neoscortechinia* (*N. kingii*)
64. Plants often spiny. Leaf blades 2.8–12 cm long, with a palmate venation. Stamens 110–130, on convex, stellately hairy receptacle. Disc present in pistillate flowers. Fruits 1–1.4 by 0.5–0.8 cm . . . . . *Doryxylon*
64. Plants not spiny. Leaf blades 6.8–37 cm long, pinnately veined. Stamens c. 75, inserted on a torus. Disc absent in both sexes. Fruits 2.1–3.6 by 1.4–3 cm . . *Sumbaviopsis*
65. Insertion between petiole and leaf blade with raised glands on upper or lower surface or lateral on petiole or with stipellae (not glandular, extrafloral nectary areas or glands in basal leaf margin; check various leaves, some leaves may lack the glands) 66
65. Insertion between petiole and leaf blade without raised glands (can be glands nearby in leaf margin, e.g., *Excoecaria agallocha*) 80
66. Stipules large (5–120 mm long), with distinct parallel venation, enclosing buds of leaves and inflorescences, only on young shoots. Raised glands at insertion always abaxially (additionally also often adaxially). Stigmas usually with a gland underneath . . . . . *Homalanthus*
66. Stipules generally small (0.3–45 mm long), generally without distinct venation, caducous to persistent. Raised glands at insertion only adaxially (upper surface) or lateral on petiole. Stigmas without gland underneath 67
67. Margin crenate, dentate, serrate (check carefully, especially with young leaves, older leaves may seem entire) . . . 68
67. Margin entire 76
68. Petals present. Bracts without glands 69
68. Petals absent. Bracts with or without basal glands . . . 70
69. Petals white. Stamens 20–41. Fruits 1.9–2.8 cm wide . . . . . *Ostodes*
69. Petals variously coloured (including white). Stamens 3 or 5. Fruits up to 1.5 cm diam . . . . . *Trigonostemon*
70. Staminate flowers in dense catkins on long pedicel, staminate flowers consisting of three layers of 10 or more stamens along an androphore. Pistillate flowers single per node/inflorescence, sepals completely connate, enclosing ovary, style long, stigmas 5–20-locular, united, umbrella-like, lobed. Fruits c. 8 cm wide . . . . . ***Hura***
70. Staminate flowers generally in loose thyrsoid racemes to panicles, in groups per node, numbers of stamens variable, 2–many, free. Pistillate flowers different, generally several per inflorescence, 2–4-locular, generally with a short style and free stigmas. Fruits < 4 cm wide 71
71. Stipellae or glands present at petiole insertion. Leaf blades ovate (shrubs to small trees). Stamens 6–8, inserted on a ring-like collar of receptacle, thecae parallel with connective . . . . . *Alchornea*
71. Glands present at petiole insertion. Leaf blades (ovate to) orbicular to elliptic to obovate, often herbs when ovate. Stamens 2, 3, 4, 8, 18–120, if 3, 4 or 8 then not inserted on a ring-like collar and thecae separate on top of connective or the thecae vermiform 72
72. Stamens 2. Bracts with 2 big glands. Plants glabrous 73
72. Stamens 3–120. Bracts lacking glands. Plants with hairs in various places 74
73. Twigs not succulent. Stipules 1.5–2.2 mm long, tip acute, entire. Leaf blades apically acute. Fruit columella without basal thickened, woody, (2- or) 3-lobed part. Seeds covered by a red aril, without caruncle . . . . . ***Sapium***
73. Twigs succulent. Stipules: blade 0.8–1.5 mm long, tip up to 2 mm long, often divided into several ciliae. Leaf blades apically acute to rounded to retuse, below often with marginal extrafloral nectaries on lower surface. Fruit columella with a basal thickened, woody, (2- or) 3-lobed obtriangular part. Seeds not arillate, with apical caruncle . . . *Stillingia*

74. Stamens 8, anthers 2-thecate, vermiform. Allomorphic flowers sometimes present. Pistillate flowers subtended by enlarged bracts . . . . . *Acalypha*
74. Stamens 3–120, anthers not vermiform, either 2- or 4-thecate. Allomorphic flowers absent. Pistillate flowers subtended by normal, non-enlarged bracts 75
75. Stamens 40–120, anthers 4-thecate, consisting of 2 pairs or 2 thecae above each other, along connective, connective with apical appendage. Stigmas 3–30 mm long, apically deeply divided . . . . . *Cleidion*
75. Stamens 3–66, anthers 2-thecate, thecae separate, basally attached to connective, connective without apical appendage. Pistillate flowers only known of *Micrococca mercurialis*: with strap-like disc glands and stigmas < 1 mm long, apically undivided . . . . . *Micrococca*
76. Flowers without petals, either inflorescences dichasial or thyrsoid racemes with staminate bracts with 2 glands 77
76. Flowers with petals. Inflorescences thyrsoid racemes to panicles; bracts glandless 78
77. Inflorescences dichasial, bisexual. Leaf blades with lowermost pair of veins equal to others, not forming basal leaf margin. Staminate bracts without glands; staminate flowers with 10–22 stamens. Pistillate flowers with many staminodes, stigmas short, split, almost knob-like. Seeds shed immediately at dehiscence, without sarcotesta . . . . . *Elateriospermum*
77. Inflorescences racemose thyrses. Leaf blades with lowermost pair of veins originating from the very leaf base and forming the basal leaf margin (at different angle with midrib than other veins). Staminate bracts with a basal pair of glands; staminate flowers with 2 or 3 stamens. Pistillate flowers without staminodes, stigmas short, apically not split. Seeds remaining attached to columella for considerable time after dehiscence, with pale to whitish sarcotesta . . . . . *Triadica*
78. Petals variously coloured, including white. Stamens 3 or 5. Stigmas 3 (bifid at apex). Fruits less than 2 cm high . . . . . *Trigonostemon*
78. Petals white. Stamens 7–14. Stigmas 3 and fruits 4–6 cm high or stigmas 6 and fruits unknown (all stigmas apically bifid) 79
79. Blades elliptic, not lobed. Stamens 8, 5 in outer whorl, 3 in inner whorl, anthers shortly sagittate at the base; pistillode minute. Pistillate flowers with annular disc; stigmas 6 . . . . . *Loerzingia*
79. Blades ovate, not to shallowly or moderately 3- or 5-palmately lobed. Stamens 7–14 in 2 whorls, anthers entire; pistillode absent. Pistillate flowers with triangular disc glands; stigmas 3(–5) . . . . . ***Vernicia***
80. Glands in margin (not near!) near petiole insertion, can be two round dots per side (then stamens dichotomously splitting!) 81
80. Glands in teeth or various types of extrafloral nectaries along margin or midrib, not in margin. Stamens not splitting 82
81. Latex white. Hairs absent. Inflorescences a single sex. Staminate flowers with 3 stamens. Pistillate flowers with apically non-split stigmas . . . . . *Excoecaria* (*E. agallocha*)
81. Latex, if present, not obvious. Hairs present. Staminate flowers with dichotomously splitting stamens, arising from 4–7 androphores, with ultimately more than 100 stamens. Pistillate flowers with apically split stigmas . . . *Spathiostemon*
82. Leaf blades with extrafloral nectary areas adaxially and/or abaxially, sometimes gland-like 83
82. Leaf blades without extrafloral nectaries; marginal teeth can end in glands 91
83. Leaf blades below with two subbasal extrafloral nectaries (naked eye) and a row of several submarginal/marginal small glands (hand lens). Plant glabrous. Stamens 2. Ovary and fruits 2-locular; fruits indehiscent berries . . *Balakata*
83. Leaf blades below or above with extrafloral nectaries of same size. Plants with hairs, or glabrous. Stamens 3 or more. Ovary and fruits 2- or more locular, when 2-locular then parts hairy; fruits dehiscent capsules 84
84. Extrafloral nectaries along margin (usually abaxially) 85
84. Extrafloral nectaries along midrib or parenchyma, not restricted to margin 88
85. Submarginal circular extrafloral nectaries on both sides; leaf blades elliptic, 8.4–13.5 cm long, margin entire. Pistillate sepals 5 or 6, bract-like, in two whorls . . . . . *Clonostylis*
85. Submarginal extrafloral nectaries only abaxially; leaf blade margin entire to serrate. Pistillate sepals in one whorl, either 3 (triangular) or 5 (ovate and then leaf blades long obovate, 8–56 cm long) 86
86. Leaf blades obovate, 8–56 cm long. Stamens 16–26. Pistillate sepals 5, ovate; stigmas apically split . . . . . *Wetria*
86. Leaf blades ovate to elliptic to oblong, 5–23 cm long. Stamens 3. Pistillate sepals 3, triangular; stigmas apically undivided 87
87. Leaf blade margin entire. Staminate bracts glandless or with a pair of globose-cylindrical glands touching the axis of the thyrse. Fruit pedicel 5–17 cm long . . *Gymnanthes*
87. Leaf blade margin serrate. Staminate bracts at base with a pair of elliptical glands touching the axis of the thyrse and sometimes decurrent. Fruit pedicel 0.8–3 cm long . . . . . *Shirakiopsis*
88. Extrafloral nectaries abaxially in teeth, basal ones larger. Fruit columella basally with strand-like remnants of sutures after dehiscence. Stamens 9–25, thecae apically touching on top of connective. Pistillate inflorescence short, consisting of a single, hanging flower. Blade of older leaves often with lobes . . . . . *Baliospermum*
88. Extrafloral nectaries in rows near midrib or basally or apically concentrated in leaf blades. Fruit columella without basal remnants of sutures. Stamens 4–8 or 30–120, thecae along connective. Pistillate inflorescences with more than 1 flower. Blade of older leaves not lobes 89
89. Staminate inflorescences panicles. Stamens 4, 6 or 8, inserted on a ring-like collar of receptacle. Staminate bracts usually with 2 basal glands outside. Stigmas apically not to seldom split . . . . . *Alchornea* (*A. rugosa*)
89. Staminate inflorescences racemiform or paniculate. Stamens 30–120, inserted directly on receptacle. Staminate bracts without glands. Stigmas deeply split apically . . 90
90. Stipules linear-triangular, 7–20 by 2–3 mm (all W Malesia), base amplexicaul, to 2 cm below the leaves. Stamens 30 or 31, with disc lobes among the stamens, disc annular in pistillate flowers. Ovary and fruits 3-locular. Seeds apically with a caruncle . . . . . *Chondrostylis*
90. Stipules triangular, 1.5–5 by 0.75–2 mm, or 4–45 by 0.5–5 mm on New Guinea, not amplexicaul, next to leaves. Stamens 40–120. Disc in both sexes absent. Ovary and fruits 2- or 3- (or 4-)locular. Seeds without a caruncle . . . . . *Cleidion*
91. Inflorescences bisexual, cymose (often corymbiform), with pistillate flowers ending every primary branch. Leaf blades often basally lobed . . . . . ***Jatropha***
91. Inflorescences unisexual or bisexual, then racemose to paniculate thyrses, with pistillate flowers in lower part when bisexual, sometimes flowers single when cauliflorous or ramiflorous. Leaf blades usually unlobed (*Baliospermum* excepted) 92

92. Herbs to subshrubs (< 2 m high). Leaf blades elliptic to linear, margin with dense, minute glandular teeth. Bracts of staminate flowers with a pair of glands. Latex absent. Stamens 3. Ovaries and fruits with 6 rows of small spines, 2 rows per locule . . . . . *Microstachys*
92. Herbs to trees. Leaf blades of various shapes, margin at most laxly glandular toothed. Bracts of staminate flowers with (*Excoecaria*, then white latex present) or without glands. Stamens 3–250. Ovaries and fruits smooth or completely covered with spines. 93
93. Both sexes with petals (check for scars within sepals/calyx with fruits). 94
93. Both sexes without petals 97
94. Stamens 3 or 5, united. Petals of various colours, including white and yellow . . . . . *Trigonostemon*
94. Stamens 6–20, free to (partly) united. Petals white (or yellow or light green) 95
95. Petals smaller to slightly larger than sepals (up to 2.5 mm long). Inflorescences often superposed (or single or in groups) . . . . . *Agrostistachys*
95. Petals larger than sepals (more than 2.5 mm long). Inflorescences single or in small groups, not superposed 96
96. Inflorescences narrowly paniculate to racemose, basal bracts stipule-like. Stamens 7–20, in 3 whorls, outer with free stamens, inner two with filaments connate into an androphore. Pistillate sepals enlarging in fruit . . . . . *Dimorphocalyx*
96. Inflorescences panicles, basal bracts leaf-like. Stamens 6 or 8 in 2 whorls (4 or 5 in outer, 1–3 in inner), filaments only basally connate. Pistillate sepals not enlarging in fruit . . . . . *Tapoides*
97. Leaf blades subpeltate. Inflorescences to 1 cm long. Stamens 200–250. Ovaries and fruits densely echinate, spines in fruit soft, up to 9 mm long. . . . . *Hancea* (*H. subpeltata*)
97. Leaf blades basally attached. Inflorescences longer than 1 cm. Stamens 3–66. Ovaries and fruits smooth or if echinate, then spines hard or soft and less than 8 mm long 98
98. Latex white. Stamens 3. Stigmas apically not split. Fruits after dehiscence with caruncle remaining attached to column, seeds naked . . . . . *Excoecaria*
98. Latex absent or not obvious. Stamens 8–50. Stigmas apically laciniate or not split. Seeds covered by arilloid, with apical caruncle (not remaining attached to columella) or naked 99
99. Stamens 8, anthers vermiform. Pistillate flowers with large bracts covering flowers. Allomorphic flowers sometimes present. Stigmas laciniate . . . . . *Acalypha*
99. Stamens 18–50, anthers not vermiform, thecae not elongated. Pistillate flowers with stipule-like bracts, partly covering flowers at most. Allomorphic flowers absent. Stigmas apically not split 100
100. Leaf blades when dried often sandpaper-like. Thecae upright on connective. Staminate disc glands strap-like, among stamens, with apical tuft of hairs; pistillate disc annular, 5-lobed. Stigmas highly papillate above . . . . . *Claoxylon*
100. Leaf blades smooth. Thecae hanging from connective. Staminate disc absent, pistillate one consisting of 3 lobes. Stigmas with at most short papillae above . . . . . *Micrococca* (*M. malaccensis*)

2. KEY TO THE GENERA OF MALESIAN PANDACEAE

This family is represented by 2 native genera.

1. Flowers in terminal or cauliflorous, pendulous inflorescences. Leaf blades without glands along the margin. Calyx lobes valvate. Fruits hairy (when young) . . . . . *Galearia*
1. Flowers in axillary fascicles to shortly peduncled after several flowering periods. Leaf blade margins with glandular teeth or crenations. Calyx lobes imbricate. Fruits glabrous . . . . . *Microdesmis*

3. KEY TO THE GENERA OF MALESIAN PERACEAE

This family is represented by 2 native genera.

1. Petals absent (though inner sepal may look petal-like, then single). Fruits covered with glochidiate (long stinging), simple hairs . . . . . *Chaetocarpus*
1. Petals 5. Fruits tomentose with normal hairs, these simple and stellately bundled . . . . . *Trigonopleura*

4. KEY TO THE GENERA OF MALESIAN PHYLLANTHACEAE

This family is represented by 20 native genera.

1. Leaves 3-foliolate . . . . . *Bischofia*
1. Leaves simple 2
2. Fruits 2-lobed, usually heart-shaped, samara-like capsules. Hairs simple or scale-like, latter on branches, lower leaf blade surfaces and bracts . . . . . *Hymenocardia*
2. Fruits 2- to more lobed capsules to berries to drupes, not heart-shaped and not samara-like. Hairs simple (to stellately bundled), never scale-like 3
3. Petals present in both sexes 4
3. Petals absent in both sexes (disc lobes sometimes appearing as petals!) 9
4. Petals longer than sepals, cucullate (except straight in pistillate flowers of one species) . . . . . *Dicoelia*
4. Petals shorter than sepals, straight, not cucullate 5
5. Disc split into petal-like glands, these bilobed (5) or completely split (seemingly 10), opposite petals, often larger than petals 6
5. Disc circular, often lobed, not split into separate glands . 7
6. Woody herbs to subshrubs, with a sparse covering of simple hairs, not easy to see by the naked eye. Leaves elliptic to somewhat obovate, 1–7.6 cm long. Seeds whitish to dark brown, smooth, rugose or pitted . . . . . *Leptopus*
6. Shrubs, completely covered with hairs c. 1 mm long, visible to the naked eye. Mature leaf blades obovate, 0.9–2.5 cm long. Seeds intensely black, rugose . . . . . *Notoleptopus*
7. Disc a thin to fleshy ring, without additional cupular part in pistillate flowers. Stamens around pistillode, free or filaments basally connate. Flowers single or in pairs when axillary, only in short racemes when cauli- or ramiflorous. Stigma tips slightly thickened and bent horizontally, persistent. Fruits capsules. . . . . *Actephila*
7. Disc a fleshy horizontal ring, with additional cupular part in pistillate flowers. Filaments partly united into androphore with on top the pistillode. Flowers in axillary glomerules or seemingly in inflorescences when branches leafless. Stigma tips not thickened, usually caducous. Fruits capsules or drupes . 8

8. Fruits drupes. Leaves usually dull greyish brown when dry, with scalariform venation and in one section of genus nerves ending in marginal vein, in other section looping and anastomosing before margin . . . . . *Bridelia*
8. Fruits capsules. Leaves usually shiny, different colours when dry, also brown, with indistinct venation, looping and anastomosing before margin . . . . . *Cleistanthus*
9. Disc present (either ring-like or separate glands, sometimes petaloid in appearance) 10
9. Disc absent (sometimes scales on sepals, not on receptacle) 13
10. Flowers in (branching) racemes. Connective of stamens broad, with thecae separately on top (resembling Mickey Mouse head). Fruits drupes, often laterally compressed, style terminal to lateral . . . . . *Antidesma*
10. Flowers in axillary fascicles to panicles. Thecae along connective, not on top. Fruits capsular to sometimes berries or drupes, not flattened, style terminal 11
11. Pistillode 3-partite. Stamens free. Disc ring-like *Flueggea*
11. Pistillode absent. Stamens free or united into androphore. Disc ring-like or separate glands 12
12. Sepals 4, horizontal. Disc annular in both sexes. Stigmas sharply bent horizontal. Sarcotesta (fleshy layer) blue . . . . . *Margaritaria*
12. Sepals 4–6, generally diagonally upright. Disc annular in pistillate flowers to generally separate (often petal-like) disc glands in staminate flowers. Stigmas upright to gradually bent horizontal. Seeds without a sarcotesta *Phyllanthus*
13. Flowers in axillary fascicles 14
13. Flowers in inflorescences, generally racemose/spicate thyrses, cauliflorous to axillary 16
14. Staminate sepals without scales inside. Stigmas united into a pyramidal cone (free in *G. sericeum*). Stamens with united filaments; thecae at end of filaments, upright, seemingly also united, but separating when flower older *Glochidion*
14. Staminate sepals with scales or without scales inside; if without scales then stigmas free (otherwise partly connate). Thecae either along androphore or free from each other (horizontal to oblique) 15
15. Fruits broader than high; seeds smooth. Staminate sepals with and without scales (then sepals folded inwards). Staminate flowers with thecae along androphore with scales at sepal apices . . . . . *Breynia*
15. Fruits higher than broad; seeds with rough surface (unknown for *S. sphenophyllus*: thecae along androphore but sepals without scales). Staminate sepals straight, not folded, with scales (littoral *S. bacciformis*: androphore apically splitting into three wings with thecae underneath) or without (*S. sphenophyllus*: thecae along androphore) . . . . . *Synostemon*
16. Staminate sepals with a scale inside. Ovaries flat on top with stigmas horizontal, split, like crescent-shaped moons . . . . . *Breynia*
16. Staminate sepals without scales inside. Ovaries not flat, stigmas upright, apically usually lobed, but not resembling crescent-shaped moons 17
17. Staminate flowers with massive pistillode (broader than anthers). Woody endocarp dehiscing partly loculicidally and septicidally and becoming flat and star-like; columella with basally a thickened ring where exo- and mesocarp were attached. Stipules early caducous, leaving almost ring-like, blackish scars . . . . . *Ashtonia*
17. Staminate flowers with small pistillode (narrower than anthers). Endocarp splitting partly or completely, but never forming flat, star-like structure; columella without basally thickened ring. Stipules persistent to early caducous, leaving small scars 18
18. Leaves distichous. Candelabriform (*Terminalia*-)branching pattern absent. Stamens 2–4 (*Aporosa*, unknown for *Distichirops*). Petioles 4–51 mm long. Hairs simple, not stellately bundled. Hairs on apical bud scales normal, not papillae-like 19
18. Leaves opposite to spirally arranged, candelabriform branching pattern strong to weak. Stamens 3–10. Petioles 4–184 mm long. Hairs simple or stellately bundled. Hairs on apical bud scales short, papillae-like 20
19. Pistillate flower with a single bract. Pedicels without abscission zones. — Staminate flowers generally very compact, individual flowers difficult to see . . . . . *Aporosa*
19. Pistillate flowers with 3 bracts. Pedicels with abscission zone. — Staminate flowers unknown . . . . . *Distichirops*
20. Stamens shorter than sepals. Hairs simple or stellately bundled. Sepals slightly fused at base. Leaves spirally arranged. Stipules triangular. — Malesia, Pacific . . . . . *Baccaurea*
20. Stamens longer than sepals. Hairs simple. Sepals fused at base. Leaves opposite to spiral. Stipules triangular to leaf-like. — Pacific . . . . . *Nothobaccaurea*

5. KEY TO THE GENERA OF MALESIAN PICRODENDRACEAE

This family is represented by 4 native genera.

1. Leaves opposite 2
1. Leaves spirally arranged 3
2. Leaf blade margin entire to very laxly crenate, with very small glandular dots or teeth in shallow cavities. Stipules absent. Fruit lobes not horned. Seeds with caruncle consisting of short to longer papillae. Staminate receptacle raised, disc-like . . . . . *Austrobuxus*
2. Leaf blade margin crenate to serrate with 20–40 short teeth, not ending in teeth. Stipules present, up to 1.8 mm long. Fruit lobes horned with stigma remnants. Seeds naked, no fleshy attachment. Staminate receptacle flat, no disc . . . . . *Choriceras*
3. Leaf blade apex caudate, lower surface glabrous. Stamens 10–14; filaments free. Stigmas spade-like *Kairothamnus*
3. Leaf blade apex rounded to apiculate, lower surface sericeous. Stamens 28–68; filaments united. Stigmas petal-like . . . . . *Petalostigma*

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