

## NOTES ON CEYLONESE PLANTS II<sup>1</sup>

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### SUMMARY

Notes are presented on the following taxa:

ANACARDIACEAE: *Semecarpus pseudo-emarginata* Kosterm. sp. nov.

CLUSIACEAE: *Calophyllum moonii* Thw., *C. calaba* L., *C. thwaitesii* Pl. & Tr., *C. acidus* Kosterm., sp. nov., *C. lankaensis* Kosterm., sp. nov., *C. trapezifolium* Thw.

*Mesua sclerophylla* Thw. is reinstated to specific rank.

EBENACEAE: *Diospyros okkesii* Kosterm., sp. nov.

ICACINACEAE: *Nothapodytes foetida* (Wight) Sleumer, var. *gardneriana* (Miers) Thw. is raised to specific rank as *N. gardneriana* (Miers) Kosterm., comb. nov.; *N. zeylanica* Kosterm., sp. nov.

MELIACEAE: *Aglaia apiocarpa* (Thw.) Hiern, *A. congylos* Kosterm., sp. nov., *Pseudocarapa championii* (Hk. f. & Th.) Hemsley, *Amoora rohituka* W. & A.

RUBIACEAE: *Dichilanthe ceylanica* Thw.

### 1. ANACARDIACEAE

*Semecarpus pseudo-emarginata* Kosterm., sp. nov.

*Semecarpus marginata* var. b. *hirsuta* Thwaites, *Enum.* 77 (1864); TRIMEN, *Handb. Fl. Ceyl.* 1: 320 (1893); ALSTON in id. 6 (Suppl.): 61 (1931).

— Typus: C. P. 2677 (PDA).

Arbor ramulis pilosis, pilis patentibus, foliis alternantibus aggregatis rigide coriaceis, oblanceolato- vel obovato-ellipticis obtusis et apiculatis basin versus attenuatis obtusis, supra glabris nitidis dense minutissime reticulatis venis majoribus impressis subbullatis, subtus subnitidis laxe brevis hirsutis (pilis brevis patentibus), costis c. 12-paribus erecto-patentibus, marginem versus arcuatis, nervo marginalibus tenuibus, petiolis crassis brevibus, paniculis minutissime sparse hirsutis, apicem versus glabris, calyx late obconicis, lobis parvis late ovato-orbicularibus acutiusculis.

*Typus*: C. P. 2677 (PDA).

Tree. Branchlets smooth with short, bristle like erect hairs. Leaves alternate, aggregate, stiffly coriaceous, oblanceolate – or obovate – elliptic,  $5\frac{1}{2} \times 15 - 7 \times 18$  cm, rounded and apiculate, base gradually tapered, obtuse; above glabrous, glossy, densely finely reticulate, lateral nerves and midrib impressed, in between slightly bullate; underneath sub-glossy, laxly shortly hirsute (stiff, patent hairs), denser on the veins, midrib prominent, lateral nerves c. 12 pairs, prominent, erect-patent, arcuately connected near the margin; a thin marginal

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vein, c. 1 mm from the margin. Petiole stout, concave above, 1–1½ cm long.

Panicles many flowered, below the leaves, minutely sparsely pilose in their basal part; pedicels filiform, almost glabrous. Flower buds ellipsoid-globose, base somewhat obconical. Calyx broadly obconical, lobes small, broadly ovate-orbicular, acutish.

*Distribution:* Known from one collection only near Galle.

*Notes:* Close to *S. marginata*, but differing by its pilosity. Pilosity is a very constant character in Ceylonese *Semecarpus* species. Mature flowers are unknown. The Galle area, which was very rich in endemic species, is now completely devoid of the original vegetation.

Near Galle, fl. Dec. 1853, C. P. 2677 (PDA).

## 2. CLUSIACEAE

The Clusiaceae of Ceylon were published in: DASSANAYAKE (Editor), *Revised Handb. Fl. Ceylon* 1: 72–110 (1980). The original ms. was delayed for eight years. In these years new facts have come to light which are presented here.

### *Calophyllum*

*C. moonii* Wight: The fruit has a thin exocarp.

*C. calaba* L.: A remark of WIGHT in: *Illustr. Ind. Bot.* 1: 128 (1840), overlooked by STEVENS (see *J. Arn. Arb.* 61: 260, 1980) and by me, states that the flowers of this species have four petals and hence are not apetalous as some botanists, including Trimen, have assumed. Examination of numerous flowers revealed that some flowers (in bud) indeed are apetalous, but that others may have two to four petals. The petals, when present, are abnormally developed, small and of irregular shape. Consequently the number of petals is not a reliable character to distinguish this species.

*C. thwaitesii* Pl. & Tr.: New synonym: *Calophyllum vergens* Stevens in *J. Arn Arb.* 61: 251 (1980). —C.P. 3403, p.p.

The correct vernacular name of this species is: guru keena. It has flush leaves quite different from those of other Ceylonese species: they are erect, rather stiff, a pale greenish brown; in all other species the flush leaves are pure white, limpid and pendulous. The fruit is not almost globose as wrongly stated in my description, but ovoid and strongly pointed as Stevens has rightly observed. It is up to 2 cm long with a juicy pericarp. The tree flowers rarely.

Additional specimens: Kanneliya forest near Hiniduma, S.W. Ceylon, ster., Meyer 1037 (PDA); Hinidumkande, ster., Kostermans 25368 (L, PDA); Kaneliya forest, Aug., fr., Balasubramaniam s.n. (L, PDA).

*Calophyllum acidus* Kosterm., sp. nov.

*Calophyllum pulcherrimum* Auct. (non Wall. ex Choisy), TRIMEN, *Handb. Fl. Ceylon* 1: 100 (1893); ALSTON in id. 6 (Suppl.) 2 (1931); WORTHINGTON, *Ceylon trees* 32 (1959); KOSTERMANS in DASSANAYAKE (editor), *Revised Handb. Fl. Cey-*

*lon* 1: 95 (1980) (as a syn. of *C. calaba* L.). — sine coll., Mandagala Mukalana, Hewesse, Mar., fl., anno 1887 (PDA).

*Calophyllum calaba*, var. *worthingtonii* Stevens in *J. Arn. Arb.* 61: 260 (1980). — Kostermans 24691 (A, L, US).

?*Calophyllum burmanni*, var. *parvifolium* Wight, *Icon. Pl. Ind. or.* t. 107 (1839); *Ill. Ind. Bot.* 1: 129 (1940). — Herb. Wight.

Arbor mediocris, ramulis glabris gracilibus quadrangularis, innovationibus dense minutissime ferrugineo-pilosis, petiolis foliis juvenilibus glabris, foliis subcoriaceis glabris lanceolatis vel oblongis utrinque attenuatis, venis laterali-bus utraque prominulis, petiolis gracilibus brevibus, paniculis axillaribus pau-cifloris, pedunculis communis fere glabris, pedicellis longis gracilibus, floribus 4 mm diametro, sepalis 4, petalis deest, fructus globosis pericarpio tenuibus.

*Typus*: Balasubramaniam s.n., fr. (L).

Tree up to 13 m tall and 40 cm dbh. Bark very smooth, glossy, orange yellow, hoop ringed, sometimes exfoliating in thin pieces. Branchlets slender, quadrangular, concave, glabrous. Terminal bud very densely, microscopically adpressed rusty pilose (hairs straight). Petioles of flush leaves glabrous or with microscopic straight hairs. Leaves sub-coriaceous, lanceolate to oblong,  $1\frac{1}{2} \times 3 - 3 \times 8 - 3 \times 10$  cm, tapered both ends, lateral nerves prominulous on both surfaces. Petiole slender, 8–10 mm, concave above.

Panicles axillary, few-flowered, glabrous, up to 2 cm long, the short main peduncle glabrous or with tiny straight hairs. Pedicels slender, up to 12 mm. Flowers c. 4–6 mm diam.; sepals 4, petaloid; petals none. Fruit globose, c. 1 cm diam. with thin, sweet-acid edible pericarp.

*Distribution*: Wet, evergreen forest in S.W. Ceylon.

*Note*: I have included this formely in *C. calaba* L. and Stevens did the same but gave it varietal rank. Since more material was collected and since I have been in the position to study the tree in the field, I believe that it merits specific rank, although it is very near to *C. calaba*.

In the field there can be no mistake between *C. calaba* and *C. acidus*, the former has a very rough, deeply diamond-like fissured bark, no hoop rings and defoliating in thick pieces or strips, whereas the latter has a very smooth, orange to yellow orange bark with narrow cracks, with conspicuous hoop rings and exfoliating in thin, tiny flakes. In dried specimens the distinction is not so evident, but the leaves are much narrower and never obovate-elliptic as in *C. calaba*. A distinguishing character is also the indumentum of the terminal bud and of the petioles of the flush leaves, in *C. calaba* the petioles are longer and wavily pilose and the terminal bud hairs are much longer. The flowers of *C. acidus* are smaller, like the more globose fruit.

The tree is not rare, but widely scattered and occurs only in the wet zone forest, whereas *C. calaba* is a Dry Zone tree.

Hiniduma Distr., Kanneliya forest, ster., Meyer 971 (PDA); Aug., fr., Balasubramaniam s.n. (L, PDA); Hinidumkande, ster., Kostermans 25370 (L, PDA); Mahana forest, above Moropitiya, 600 m, May, fr., Kostermans 24691 (K, L, PDA); Moropitiya, in rubber garden, Apr., fr., Kostermans 24688 (PDA); Nerugalkande, Udugama, 300 m, July, fr., Balakrishnan 529 (PDA); Matere Distr., Diyadakale, 170 m, July, fr., Waas 1368 (PDA); Weerakande near Elpitiya, ster., Kostermans

25604 (L, PDA); N. Enselwatte, ster., Sohmer & Waas 10406 & 10441, galled (PDA); Ratnapura Distr., Gongala, 1000 m, ster., Waas 1385 (PDA); Pettiagalle near Balangoda, 1200 m, ster., Huber 867 (PDA); Kurunegala Distr., slopes of Doluwe Kande, ster., Jayasuriya 538 (PDA); Mandagala forest, Hewesse, Mar., fl., anno 1887 (PDA).

***Calophyllum lankaensis* Kosterm. sp. nov.**

*Calophyllum zeylanicum* Kostermans in *Ceylon J. Sci., Biol. Sci.* 12(1): 70 (1976) and in DASSANAYAKE, *Rev. Handb. Fl. Ceylon* 1: 95 (1980), p.p. (quoad description of flowers and the specimens Kostermans 24074, 24414, 25152A, 26622, 25047, 25083).

*C. trapezifolium* Thw. sensu Stevens, *J. Arn. Arb.* 61: 244 (1980), pro parte quoad syn. *C. zeylanicum* Kosterm.

Arbor mediocris, ramulis gracilibus glabris, innovationibus glabris vel minutissime sparse pilosis, foliis rigide coriaceis glabris anguste oblongis vel oblanceolatis parvis, obscure late acuminatis vel obtusis basin versus in petiolum gracillimum sensim attenuatis nervis lateralibus utrinque prominulis erecto-patentibus, paniculis paucifloris vel floribus solitariis axillaribus, pedicellis longis gracilibus, flos 1 cm diametro, fructus globosis saepe minute apiculatis.

*Typus*: Kostermans 27800, fr, Sept. (L).

Tree up to 10 m tall, up to 40 cm dbh. Bark rusty brown, very rough, deeply fissured, exfoliating in brittle thick pieces. Twigs slender, glabrous; terminal bud glabrous, but the very young reddish flush leaves with a sparse indumentum of microscopical gland like hairs. Leaves stiffly coriaceous, glabrous, narrowly oblong to oblanceolate,  $1 \times 4 - \frac{1}{2} \times 2$  cm, obtusely, very obscurely broadly acuminate or obtuse, base gradually tapered, lateral nerves erect-patent, very slender, slightly prominulous on both surfaces. Petiole slender, 3–4 mm long, concave above.

Panicles or racemes axillary, glabrous, very few flowered (up to 5 flowers in two opposite pairs and a terminal one), often solitary. Pedicel slender, angular, up to 1 cm long. Flowers c. 1 cm diam., white, with 4 thin petaloid sepals and 2 petals. Fruit globose, green when ripe, 5 mm diam. with 1 mm thick, juicy mesocarp, no endosperm, usually obscurely, minutely apiculate.

*Distribution*: Ceylon, only known from the windswept low forest, evergreen, along the Madugoda-Mahiyangane road in the Knuckles Massive, at an alt. from 800–1000m, usually in rocky stream gullies.

*Vernacular name*: Gal keena (galle = rock).

*Note*: Formerly I have erroneously mixed this with *C. trapezifolium* and have indicated a fruiting specimen of that species as the type of *C. zeylanicum*; the flowering specimens represent *C. lankaensis*.

Now that the small, globose fruits are known (those of *C. trapezifolium* are pointed), the species is well characterized also by its very small flowers, half the size of those of *C. trapezifolium* and the diminutive inflorescences.

The species is very rare and prone to become extinct soon.

Prof. Sultanbawa (cf. Chemistry of Guttiferae of Ceylon in *J. Nation. Sci. Council Sri Lanka* 1: 123–165 (1973) found differences in chemical compounds of the bark as compared to those of *C. trapezifolium* (unpublished).

Windswept low, evergreen forest along Madugoda-Mahiyangane Road, below Madugoda, often in rocky gullies, 800 m, Aug., fr., Waas 1430 (PDA); Sept., ripe fr., Kostermans 27800 (G, L, PDA); July, fl., Kostermans 24424 (G, K, L, PDA); June, ster., Kostermans 25152 (A, G, K, L, PDA, US); June, fl., Kostermans 26622 (G, L); Bopane, off Madugoda, 1000 m, ster., Waas 1087, sapling (leaves  $2\frac{1}{2} \times 8$  cm).

*C. trapezifolium* Thw.

*Calophyllum zeylanicum* Kostermans in *Ceylon J. Sci., Biol. Sci.* 12(1): 70 (1976) and in DASSANAYAKE, *Revised Handb. Fl. Ceylon* 1: 99 (1980), p.p., quoad specim. Balasubramaniam W.

The species is very common in the Knuckles Mts. at altitudes from 800–1000 m, and may even become gregarious in forests above Midcar cardamon estate on the road from Ratotta to Illukumbura, where it forms almost pure stands with *Syzygium fergusonii*. It is characterized by a distinctly yellow bark, which has deep wide fissures, but the intermediate strips are flat or slightly concave above (not ridged as in other species). It may be up to 20 m tall and 80 cm dbh.

*Additional material:* Above Lebanon estate, Knuckles Massive, Apr., fr., Kostermans 27751 (AAU, G, L, PDA); June, fl., Kostermans 25048 (id.); ster., Kostermans 27524 (id.); Dusingalle, above Pereira's cardamon estate, via Lebanon estate, Madulkelle area (W. Knuckles), 1700 m, June, y. fr., Kostermans 27752, 2776 (id.); N. E. Knuckles above Midcar cardamon estate, road Ratotta-Illukumbura, Nov., young fr., Kostermans 24177, 24138, 24518, 24929 (id.); Dotulagalle, Kandy Distr., 1600 m, Febr., fl., Waas 1041 (PDA); N. of Pinnawala, Adam's Peak, 1600 m, June, fr., Maxwell & al. 915 (PDA); Gongala, Ratnapura Distr., 1300 m, July, fr., Waas 1378 (id.).

*Mesua*

*M. sclerophylla* Thw.

THWAITES, *Enum.* 407 (1864); KOSTERMANS in DASSANAYAKE, *Revised Handb. Fl. Ceylon* 1: 109 (1980) (as *M. nagassarium*, var. *sclerophylla*).

*Mesua speciosa* Auct. (non Choisy) THWAITES, *Enum.*, l. c. 50 and 407. — C.P. 603 (PDA).

Since I have been able to collect flowers and fruit of this tree and could study it extensively in the field, I have come to the conclusion, that Thwaites (as usual) was correct and that it merits specific rank as it differs from *M. nagassarium* by its pendulous long branches, the rounded leaf base, the completely green leaves with acuminate apex, the obscure lateral veins and the much smaller flowers and fruit. This is the largest *Mesua* species with enormous buttresses; it can be 40 m tall and more than 100 cm dbh.

3. EBENACEAE

*Diospyros okkesii* Kosterm., spec. nov.

Arbor mediocris, ramulis gracilibus minute puberulis, foliis alternantibus in sicco nigris membranaceis, juvenilibus subtus sparse minutissime adpresso pilosis glabrescentibus, ellipticis, breve acuminatis, basi in petiolum contractis cuneatis, supra nervo mediano tenuibus prominulis in sulcis, subtus prominentibus tenuibus, costis 7–8 paribus sat patentibus marginem versus conspicue arcua-

tis, petiolis gracilibus, floribus foemineis axillaribus solitariis albis, pro genere sat magnis, pedicellis distinctis pilosis, tubo calycinis pilosis cupuliformibus magnis, lobis 3 carnosus patentibus magnis, extus pubescentibus, corolla pubescentis albis carnosus, lobis 3 longis ab dimidio reflexis.

*Typus*: Kostermans 28311 (L).

Tree, 10 m tall, dbh. 40 cm, hardly buttressed. Bark smooth, light brown, thin; live bark 3 mm thick, brown. Branchlets slender, minutely puberulous (hairs erect). Leaves alternate, in sicco membranaceous, in vivo chartaceous, drying black, elliptic, 3 × 5 – 5 × 10 cm, shortly acuminate, base contracted into the petiole, cuneate; above midrib very thin, prominulous in groove, lateral nerves very thin, prominulous; below midrib slender, prominent, the c. 7–8 pairs of lateral nerves rather patent, prominulous, towards the margin strongly arcuately ascendent. Petiole slender, 5–10 mm long.

Female flowers white, axillary, solitary, supported by 2 basal, rectangular, ½ mm long bracts. Pedicel 4–5 mm, pilose. Calyx tube large, cup-shaped, 3–5 mm high, pilose; lobes 3, fleshy, white, orbicular to oblong-orbicular to ovate-oblong, obtuse, patent, 5–7 mm long, imbricate at base, pilose outside; corolla fleshy with 3–4 mm long, 3 mm wide tube and 3 large, fleshy, 3–4 mm long broad lobes, sericeous outside, reflexed from the middle, inside glabrous; style 1–1½ mm long, either the upper 3 mm spreading (stigmas) or 3 free styles; top of ovary silvery pilose. Stamens none.

Male flower unknown.

*Distribution*: Sinharaja forest, entrance from Beverley Tea Estate, Deniaya, also in the W. part of Sinharaja forest.

*Ecology*: Wet, evergreen forest from lowland to 800 m alt.

*Notes*: The species is named in honour of Mrs. A. Okkes-Bastiaan of the Hague, Netherlands, who took me up in her house, during my stay in the Netherlands from 1974–78 and took care of me during a severe case of advanced amoebid dysentery.

Because of its trimerous flowers it belongs in section (subgenus) Maba, of which it is in Ceylon the largest flowered representative. The flowers are even large for the genus, like those of *D. peregrina*. It was found formerly also in the W. part of Sinharaja forest (sterile) but supposed to be *D. sylvatica*, which has the same leaves. Since more material of the new species is available now, it can be distinguished also in sterile condition by glabrous twigs in *D. sylvatica* (if some hairs are present, they are appressed). *D. okkesii* has erect hairs. The flowers of the two are entirely different and the species belong to different subgenera.

E. Sinharaja forest, entrance from Beverley Tea Estate, Deniaya, 800 m alt., March, fl., Kostermans 28311 (G, K. L. PDA).

#### 4. ICACINACEAE

*Nothapodytes gardneriana* (Miers) Kosterm., comb. nov. and *Nothapodytes nimmoniana* (Grah.) Mabblerley (*N. foetida* (Wight) Sleumer).

SLEUMER (*Blumea* 17: 232, 1969) included *Mappia gardneriana* Miers (*Map-*

*pia foetida* var. *gardneriana* (Miers) Thw.) in *Nothapodytes foetida* (Wight) Sleumer (which is a synonym of *N. nimmoniana* (Grah.) Mabberley in MANILAL, *Bot. & Hist. Hort. Malab.* 88, 1980) as *N. foetida* var. *gardneriana* (Miers) Thw.

However, the fruit of *Mappia gardneriana* is distinctly different from that of *Nothapodytes foetida*. The latter has slender, ellipsoid fruit, slightly ribbed and with numerous smooth small tubercles, that of *Mappia gardneriana* is shortly broadly subovoid-ellipsoid and entirely smooth. There is, moreover, some difference in the leaves, those of *Mappia gardneriana* being much thicker with steeper lateral nerves, which on the upper surface are prominulous in a groove.

The type of *Mappia gardneriana* Miers (Gardner 98, Nuwara Eliya, Ceylon) is in flower, 2 isotype sheets are in PDA.

The type of *Mappia ovata* Miers (represented in PDA), is a flowering specimen collected in the Peradeniya Botanic Garden (Gardner 99) and although the leaves are thinner, this might also be *Mappia gardneriana*.

*Mappia championiana* Miers of which the type specimen is from Hantane ridge, Galapane, Ceylon (PDA) has flowers and fruit similar to those of *Nothapodytes foetida*.

I consider *Mappia gardneriana* a proper species, distinct from *Nothapodytes nimmoniana* and hence rename it: *Nothapodytes gardneriana* (Miers) Kosterm., comb. nov. (basonym *Mappia gardneriana* Miers in *Ann. Mag. Nat. Hist.* 2(9): 396 (1852), repr. in *Contr. Bot.* 1: 66, 1852).

Material in PDA: Peradeniya Garden, buds, Gardner 99 in Herb. Wight propr., typus *Mappia ovata* Miers; Nuwara Eliya, fl., Gardner 98, typus; Kaminakula, 1800 m, Apr., fl., sine coll. anno 1907; Nuwara Eliya, lower road side near Hakgalle, Mar., fl., A.W.S. s.n.; Kandy, Apr., fl., Alston 102; sine local., fl. Apr. 1854, C.P. 492 (2 sheets, one in fl., one with juven. leaves and fr.).

### ***Nothapodytes zeylanica* Kosterm., sp. nov.**

Arbor mediocris, ramulis gracilibus apicem versus minutissime adpresse pilosis, foliis alternantibus coriaceis glabris obovato-oblongis vel ellipticis breve acutis basi longe acutis subdecurrentibus, petiolis gracilibus canaliculatis, paniculis axillaribus multifloris minutissime sparse adpresse pilosis, floribus sessilibus albis glabris, gemmis elongatis, calyx brevibus breve 5-dentatis, petalis tenuibus lineare-lanceolatis, filamentis longis antheris magnis, stylo longis, fructus ignotus.

*Typus*: Huber 712 (L).

Tree, 4–12 m tall, dbh. 6 cm; twigs rather slender, stiff, apically with sparse microscopical adpressed hairs. Leaves alternate, coriaceous, glabrous, obovate-oblong to elliptic,  $1\frac{1}{2} \times 3 - 3 \times 8 - 5\frac{1}{2} \times 13$  cm, shortly acute, base long-acute, sub-decurrent, both sides smooth, dull; above midrib and the slender lateral nerves (sometimes also the secondary ones) impressed; below midrib strongly prominent, lateral nerves c. 4 pairs, erect-patent, prominulous or hardly so, secondary nerves forming a lax reticulation. Petiole slender, 5–25 mm long, slightly channelled above.

Panicles axillary near the apex of the twigs, rather many flowered, lax, microscopically, rather sparsely adpressed pilose, up to 4 cm long, the branches

very slender, up to 2 cm. Flowers white, sessile on very short branchlets, subtended by a minute, acute bract. Calyx very shallow, c.  $1\frac{1}{2}$  mm diam., with 5 short, broad teeth. Flower bud elongate, glabrous. Petals white, thin, linear-lanceolate, 2– $2\frac{1}{2}$  mm long; filaments 3 mm long; anthers 2 mm long; style 2 mm. Fruit unknown.

*Distribution:* Ceylon, Nuwara Eliya Distr., Matale Distr., Illukumbura, at c. 1600–2100 m.

*Notes:* The species can be easily distinguished from *N. nimmoniana* and *N. gardneriana* by the indumentum of the inflorescence, which is very short, the glabrous very slender flower buds (in *N. nimmoniana* rounded, very densely adpressed pilose), the much shorter calyx and the thinner shorter petals which are pure white (in *N. nimmoniana* bright yellow).

I have enumerated a specimen from Ratnapura with much larger leaves, but with identical flowers, which I assume is the same.

Mandegale Oya forest, trail to Maskeliya from Maliboda, Ratnapura Distr., June, buds, Waas 1691 (PDA); Nuwara Eliya Distr., Pattipola, approach to Horton Plains, 2100 m, Dec., buds, Tirvanganadum & Cramer 97 (PDA); Nuwara Eliya road, culvert 56/8, 1660 m, June, buds, Cramer 4247 (PDA); Matale Distr., Ratotta-Illukumbura Rd., mile 37, 950 m, Aug., fl., Huber 712 (L, PDA); July, buds, Kostermans 27992, 27993, 28083 (AAU, G. L).

## 5. MELIACEAE

*Dysoxylum* is published in Reinwardtia 1981.

### *Aglaiia*

*A. apiocarpa* (Thw.) Hiern

HIERN in HOOKER f., *Fl. Brit. Ind.* 1: 555 (1875), p.p.; TRIMEN, *Handb. Fl. Ceylon* 1: 245 (1893), p.p. — *Milnea apiocarpa* THWAITES, *Enum. Pl. Zeyl.* 60 1858, p.p. (quoad sheet C.P. 405, unmarked, fl.; excluding sheets: C.P. 405, Gardner, Adam's Peak, fl. = *A. congylos* Kosterm. and C.P. 405, Ambagamuwa, fl., plus one attached fr. = *A. roxburghiana* and C.P. 405, the fruiting twig); Hiern, l.c.; Trimen, l.c. — Lectotypus propositum: C. P. 405 (PDA), without locality, flowering.

Tree or shrublike tree, 1–5 m tall, 2–6 cm dbh., already flowering and fruiting when 1 m tall. Twigs apically with a dense layer of tiny red-coppery coloured fimbriate scales, glabrescent. Leaves spirally arranged, once-pinnate. Flush leaves and rachis densely, minutely coppery scaly; adult leaves with glabrous or very sparsely lepidote, 6–20 cm long rachis; leaflets 3 pairs and a terminal one, chartaceous to sub-coriaceous, glabrous (except a few scattered, tiny dark rusty scales on the lower surface, denser on and along the midrib), opposite and sub-opposite (lower ones), elliptic to oblong,  $3 \times 10 - 4\frac{1}{2} \times 9 - 8 \times 15 - 10 \times 20$  cm (apical ones largest), broadly shortly acuminate, base cuneate; both sides smooth, dull; above midrib thin, prominulous, basal part impressed; below midrib prominent, the 6–10 pairs of lateral nerves rather patent running out arcuately towards the margin, thin, prominulous (often much shorter intermediate ones), secondary nerves, if present, few, obscure, often impressed.

Base of rachis swollen. Petiolules rather slender, 5–20 mm, concave above, or only the basal part concave.

Panicles axillary, rather few flowered, peduncle long (up to 16 cm), densely minutely dark rusty scaly, bearing few, widely spaced, patent, up to 3 cm long raceme-like branches with few flowers, the apical flowers directly on the peduncle. Pedicel stout, grooved, obconical, densely scaly,  $1\frac{1}{2}$ –2 mm long. Calyx lobes 5, thick, triangular, acute, up to  $1\frac{1}{2}$  mm long, densely scaly. Petals 5, thick, oblong, acute, up to  $2\frac{1}{2}$  mm long, scaly.

Infrutescence up to 12 cm long (usually much shorter), densely, minutely rusty lepidote, hardly or not branched. fruit globose to ellipsoid-globose,  $2\frac{1}{2} \times 2$ — $2\frac{1}{2} \times 3$ — $4 \times 4$  cm, densely rusty lepidote, glabrescent, yellow (ripe) with thin, transparent aril.

*Distribution:* Common in Ceylon, but very scattered from the wet lowlands up to 1700 m in wet and intermediate zones of rainfall.

*Notes:* *Milnea apiocarpa* was based on two C.P. numbers (405 and 2448) of which the former was available for examination. In PDA are 4 sheets of C.P. 405, which represent a mixture of three species.

Sheet (1) is marked in pencil Gardner, Adam's Peak; it is a flowering specimen of *A. congylos* Kosterm.

Sheet (2) is marked: Rambodde, Gardner and Maturate, Nov. 1857; this is a mixture of the large-foliolated *A. apiocarpa* with large fruit and large flowers and a fruiting branch of the narrow- and smaller-leaved *A. congylos*.

Sheet (3) is unmarked and is a flowering specimen of *A. apiocarpa*.

Sheet (4) with 2 flowering branches (of which one has a fruit attached) is marked Ambagamuwa and represents *A. roxburghiana*.

Thwaites' description does not cover any of these specimens solely and the meagre information (3000–6000 ft.) is not of much help to choose a lectotype. I suggest to accept the unmarked C.P. 405 sheet with flowering twigs as the lectotype.

*A. apiocarpa* differs from *A. congylos* by being a small tree (at most 5 m, but usually much smaller) with elliptic, large chartaceous leaflets with only a few scales on their lower surface, the twice as large flowers in narrow, few and shortly branched panicles and the large fruit.

Hiern did not unravel the mixture and Trimen says "a variety with narrow leaflets, very coppery beneath, was met with in the Rangale Distr. on the way to Nitre Cave"; he overlooked the fact that this "form" is present on sheet C.P. 405, collected 40 years earlier. Trimen also expressed doubts, whether *A. apiocarpa* was really distinct from *A. roxburghiana*. He apparently examined the material rather superficially, as he says that the principal difference is the greater amount of scales. This, however, is a minor difference, the main one is in the fruit and the much smaller, minute non lepidote petals of *A. roxburghiana*.

*A. apiocarpa* is found in the Wet Zone at low altitudes and up to 1700 m in the wet and intermediate zones of rainfall (Hantane ridge near Kandy and the Knuckles). *A. congylos*, a large buttressed tree has so far been found only between 700 and 1000 m alt., and is in some areas very common.

Maskeliya Distr., Moray Estate near Fishing Hut, 1500 m, Nov., y. fr., Sumithraarachchi 568 (PDA); trail to Adam's Peak, 1700 m, fr., Kostermans s.n. (L); Adam's Peak, fr., A. M. Silva s.n. (PDA); Pettiyagala near Balangoda, 1250 m, Aug., fr., Huber 861 (PDA); Balangoda, Bogawantalawa Road, 1400 m, July, buds, Meyer 941 (PDA); Dotulagala forest, 2 miles from Rassagalle, Balangoda, Nov., y. fr., Sohmer & al. 10516 (PDA); 1000 m, Aug., buds, Waas 1835 (PDA); above Galaha estate, between Kandy and Nuwara Eliya, 1700 m, ster., Kostermans s.n. (L); Ratnapura Distr., Kiribathgalle near Pelmadulla, March, y. fr., Waas 1226 (PDA); Pituwala, S.E. of Elpitiya 140 m, Sept., y. fr., Huber 311 (PDA); Palbadalla, Sept., y. fr., Sumithraarachchi 1025 (PDA); Mukuwatte forest, 1200 m, Aug., fr., Waas 1823 (PDA); S. side of Ratnapura forest between Op-anayake and Wewelwatte, Oct., y. fr., Nooteboom 3307 (L, PDA); Deniyaya, N. Enselwatte, Matara Distr., 600 m, Nov., fr., Sohmer & al. 10471 (PDA); above Beverley estate, 800 m, May, y. fr., Kostermans 28454 (L); Kalutara Distr., Weligala, 150 m, June, fr., Waas 1306 (PDA); Hiniduma Distr., Kanneliya forest, ster., Meyer 1022 (PDA); alt. 100 m, April, fr., Balakrishnan 279 (PDA); Aug., buds, Waas 1835 (PDA); Aug., fr., Waas 1848 (PDA); 200 m, Sept., fr., Huber 366 (PDA); Nov., fr., Sohmer & al. 8937 (PDA); 175 m, Aug., fr., Cramer 4538 (PDA); Hinidumkande, sine coll., March 1891, fl. & y. fr. (PDA); Bulutota Pass, Deniyaya, March, y. fr., Alston 716 (PDA); sine coll., sine local., fl., C.P. 405 (PDA) (except the small leaved fr. branch).

*Aglaia congylos* Kosterm., sp. nov.

*Milnea apiocarpa* Auct. (non Thwaites), THWAITES, *Enum.* 60 (1858) (exclud. C.P. 405, fl., no locality and Rambodde, Gardner and Maturate, Nov. 1857, C.P. 405 (PDA) except the small leaved fruiting twig and Ambagamuwa, fl. anno 1855, C.P. 405, which is *A. roxburghiana*). — *Aglaia apiocarpa* (Thw.) HIERN in HOOKER f., *Fl. Brit. Ind.* 1: 555 (1875), p.p.; TRIMEN, *Handb. Fl. Ceylon* 1: 245 (1893), p.p. — Typus: C.P. 405, Adam's Peak, Gardner s.n. (PDA).

Arbor ramulis dense minutissime rufo-lepidotis, foliis alternantibus pinnatis, foliolis anguste oblongis vel oblanceolatis, obscure acuminatis, basi longe cuneatis, utrinque laevibus, supra glabris nervo mediano subimpressis, subtus dense minuteque rufolepidotis rarissime subglabrescentibus, nervo mediano prominentibus, lateralibus sat obscuris sat patentibus marginem versus evanescentibus, petiolulis distinctis paniculis multifloris axillaribus latis et longis, floribus longe pedicellatis minutis, fructus subglobosis sat laevibus.

*Typus*: C.P. 405 (PDA), Adam's Peak, Gardner, fl.

Tree up to 15 m tall, dbh. 40 cm. Buttresses up to 60 cm high, out 50 cm, thin. Bark partly peeling off, pinkish dark rusty brown, 1–2 mm thick; live bark 10 mm, red, inside white, Wood hard. Twigs and underside of leaves and panicles densely, minutely coppery-lepidote. Leaves spirally arranged, once-pinnate with or without terminal leaflet; rachis 4–15 cm long, sulcate and flattened, densely lepidote, base swollen. Folioles 2–4 pairs, sub-coriaceous to coriaceous, narrowly oblong to oblanceolate,  $1\frac{1}{2} \times 8 - 2 \times 9 - 3\frac{1}{2} \times 10$  (upper ones),  $1 \times 4 - 2 \times 3$  (lower ones) cm, obscurely acuminate to acutish, base long-cuneate; both sides smooth and dull; above midrib flat or slightly impressed, lateral nerves invisible or slightly impressed; below densely, minutely, dark coppery lepidote, very rarely partly glabrescent, midrib prominent, lateral nerves 8–10 pairs, very obscure to prominulous, rather patent, running out towards the margin. Petiolules 4–10 mm long, rather slender, concave above.

Panicles multi-flowered, axillary, dark red-brown rusty lepidote with stout, sulcate or flattened main peduncle and remote, 3–9 cm long, patent, stout

branchlets which ramify twice. Pedicels cylindrical, smooth, 2–2½ mm long. Flowers very densely rusty lepidote (also petals) sepals 5, broadly ovate, acute, ½ mm long. Petals 5, oblong-subovate, obtuse, thickish, 1½ mm long.

Fruit initially pear shaped, at maturity sub-globose, smooth, but with tiny red-brown scales, up to 2 × 2 cm.

*Distribution:* Sometimes dominant tree of mountain forests from the Knuckles to Haputale, scattered from 500–1000 m alt.

*Ecology:* Sometimes common. In the very wet mountain forests, but also in those with intermediate rainfall (Hantane ridge near Kandy, Knuckles Massi-ve). Occurs in the same areas as *A. apiocarpa*, but not in the wet lowlands.

A tree recommended for reafforestation of cardamon estates.

*Notes:* Although a specimen of this was already collected in 1855 by Gardner on Adam's Peak, Trimen remarked that it recently (anno 1890) came to his attention from the Knuckles Mts. As he did not disentangle the three species under C.P. 405, he even suspected that all three species of Ceylon were conspecific with *A. roxburghiana*, a common tree of the Dry zone, also in India. He was also misled by the large flowers of *A. apiocarpa*, which he suspected to be the female ones.

The species is easily separable from *A. apiocarpa* by its large size, its buttresses, the constant dense layer of scales of the lower leaf surface, the smaller, narrow and thicker leaves, the multiflowered large, broad panicle, the cylindrical pedicel and the flower parts which are only half as long as those of *A. apiocarpa*.

The flush leaves are first rusty brown, in a later stage yellowish underneath (fresh).

The specific name is a translation of Knuckles.

Knuckles Mts., Rangale to Corbet's Gap, 1000 m, May, open fl., Kostermans 23499 (PDA); Corbet's Gap, 1500 m, Oct., fl., Waas 206 (PDA); N. of Hunasgiriya near mile 23, cardamon estate, 1200 m, Nov. fr., Davidse 8439 (PDA); Kalupahana forest, 1250 m, dominant, July, buds, y. fr., Jayasuriya & al. 1215 (PDA); Kandy Distr., Hantane ridge, 700 m, ster., Kostermans s.n. (L); Merisketiya, 1200 m, Febr., fr., Waas 1053 (PDA); Rangale, Sept. 1888, fr. (PDA); Adam's Peak, fl., Gardner, C.P. 405 (PDA, holo); road Laxapana-Maskeliya, 600 m, July, buds, y. fr., Kostermans 27678 (PDA); Doublecutting, road to Maskeliya, 900 m, Nov., buds, Kostermans 27085 (PDA); above Haputale, Dothulagalle estate, 1600 m, May, buds, Kostermans 23369 (PDA); Kiribathgalle near Pelmadula, Ratnapura Distr., 900 m, ster., Kostermans s.n. (L).

### *Pseudocarapa*

*P. championii* (Hook. f & Th.) Hemsley

From additional material, enumerated below, the following should be added to or changed in Trimen's description.

Tree, up to 30 m tall, up to 100 cm dbh. Buttresses 1 m high, out 1 m. Bark rough, cracked and fissured, dark brown with violet tinge, strips 1–2 cm wide, 2–4 mm thick, brittle. Live bark up to 5 mm thick, white, outside dark red with yellow streaks.

Leaflets 2–4 pairs, opposite with one or two terminal leaflets.

Inflorescences either pseudo-racemes or panicles of a few pseudo-racemes;

the latter with up to 3 cm long, thin branches, continued by an up to 6 mm long part similar to the very short pedicel, which has pilose microscopical bracts at its base.

Petals 4, sometimes 5; anther tips protruding from the fleshy staminal tube, 8, rarely 9–10. Flowers white, after anthesis yellowish-white.

Knuckles Mts., Madulkelle area, cardamon estate of Dr. Pereira, via Lebanon estate, 900 m, rather common, June, fl., Kostermans 25036 & 25022 (PDA, L); Rangale to Corbet's Gap, 1000 m, May, fl., Kostermans 23491 (L, PDA); Badulla Distr., Madawelagama, mile 6, Pine nursery, June, fl., Kostermans 24440 (L, PDA); Ratnapura Distr., low, Gilimale forest, Nov., young fr., Jayasuriya 1872 (PDA); Sinharaja forest, ster., Gunatilleke B 1165 (PDA).

### *Amoora*

#### *A. rohituka* W. & A.

TRIMEN, *Handb. Fl. Ceylon* 1: 249 (1893).

I disagree with PENNINGTON & STYLES (*Blumea* 22: 481, 1975) who included *Amoora* in *Aglaiia*. The genus is so entirely different from *Aglaiia* in its inflorescence and flower characters, that it seems better to keep it. For a discussion of this point cf. KOSTERMANS in *Reinwardtia* (in the press).

The sepals are only in a very young stage sparsely, minutely pubescent. In some flowers 4 petals were present. The number of the narrowly ovate, pointed anthers can be 6 or 7. The staminal tube has a very narrow orifice. The ripe capsule can be either greenish yellow or greenish orange, red ones were not observed; the ariloid (testa) is dark red, not yellow. A specimen (Kostermans 28066) from Nugegoda near Colombo had numerous, large, very fleshy, pendulous, cock's comb like fasciations of the female inflorescences. The tree can reach 100 cm dbh.

## 6. RUBIACEAE

### *Dichilanthe ceylanica* Thw.

Recently I saw trees of this so-called rare species in the Sinharaja forest (Weddegala entrance) at an alt. of 200 m, where it was discovered by the Gunatillekes of the Peradeniya University. Contrarily to the trees, which I have seen on Hinidumkande, these were very big, medium sized trees, up to 15 m tall and up to 70 cm dbh., not buttressed. The bark, contrarily to Trimen's description, is very rough, darkbrown and somewhat defoliating. There were two colour varieties; one has bright yellow flowers, like the ones from Hinidumkande, the other, which is as common, has pretty pink flowers; no other differences were observed.

The most remarkable are the fruit (unknown according to Trimen). The compact globose apical inflorescences (actually an umbel, glued together by a hyaline, rather hard resin, which covers also the terminal bud, like in *Fagraea*) detaches with the two upper leaves and a small part of the branchlet below these leaves, the leaves and globose "fruit" simulating a dipterocarp fruit with two wings. From each "fruit" only one fruit develops.