Checklist of the genus Antidesma (Euphorbiaceae) in Thailand

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ABSTRACT. The genus Antidesma (Euphorbiaceae-Phyllanthoideae) is revised for the 'Flora of Thailand'. There are 18 species and five varieties of Antidesma in the area. Separate keys for staminate and pistillate material are provided.

ANTIDESMA


About 100 species in the Old World Tropics, with the highest number in South-East Asia. 18 species in Thailand. Classification: Subfamily Phyllanthoideae, subtribe Antidesminae (Webster, 1994).

KEY TO THE SPECIES

Notes: Specimens should either be in fruit or bear mature staminate flowers. Pistillate flowering or sterile material may be difficult and sometimes impossible to determine. Descriptive terms are illustrated. Many structures can only be seen in sufficient detail under a dissecting microscope; dried flowers may have to be softened. All measurements are given in the dry state; fruit length includes calyx and stigmata.
Species in parentheses key out in this place only as an exception.

KEY FOR STAMINATE MATERIAL

1. Leaf apex rounded or retuse, more rarely obtuse
2. Leaf base acute or obtuse, mostly cuneate. Stamens 2 (or 3). Sepals fused for \( \frac{2}{3} \) of their length, glabrous outside. Stipules 0.5–1 mm wide. Petiole 1–2 mm wide. Inflorescences simple to branched twice. Flowers 1–1.5 mm long pedicellate. Disc cushion-shaped. Pistillode absent 1. A. acidum
1. Leaf apex acute, acuminate or caudate
3. Midvein in sicco sharply raised adaxially, distinctly perceptible to the touch
4. Leaves 6–7.5 cm long, 2.5–3.5 times longer than wide, chartaceous to subcoriaceous. Indumentum of stipules, inflorescence axis and bracts whitish. Stipules 2–5 mm long 6b. A. japonicum var. robustius
4. Leaves 13–27 cm long, 4–5.5 times longer than wide, coriaceous. Indumentum of stipules, inflorescence axis and bracts ferrugineous. Stipules 4–10 mm long 7. A. laurifolium
3. Midvein in sicco impressed to gently raised adaxially, not distinctly perceptible to the touch

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5. Inflorescences at least partly cauline
6. Petiole (at least of some leaves) longer than 10 mm, 1–1.5 mm wide, basally and distally usually slightly swollen and sometimes geniculate 14. **A. puncticulatum**
6. Petiole shorter than 10 mm (if longer, then wider than 1.5 mm), basally and distally not swollen or geniculate
7. Tertiary veins close together, more than 10 between every two secondary veins. Petiole 1.5–4 mm wide. Inflorescences (4–)15–24 cm long. Leaves (7–)13–24–(50) by (2.5–)4–8–(15) cm
9. **A. leucopodum**
7. Tertiary veins widely spaced, less than 9 between every two secondary veins. Petiole up to 2 mm wide. Inflorescences 3–8 cm long. Leaves (5–)8–14–(19) by (2–)3–5–(7.5) cm
8. Stipules, petiole and lower leaf side glabrous. Indumentum whitish or absent. Inflorescences simple or branched once. Disc cushion-shaped, hairy. Pistillode glabrous 5. **A. helferi**
5. Inflorescences axillary (sometimes terminally condensed)
9. Stipules foliaceous, more than 4 mm wide
10. Disc pilose. Flowers 2–3 by 1.5–2 mm. Stamens 2–2.5 mm long, 1.5–2 mm long exserted from the calyx. Stipules, petiole and leaves glabrous 5. **A. helferi**
10. Disc glabrous, rarely pilose. Flowers 1–2.5 by 1–1.5 mm. Stamens 0.8–2 mm long, 0.5–1.5 mm long exserted from the disc. Stipules, petiole and major veins on lower leaf surface pilose
11. Leaves drying olive-green. Plant with whitish indumentum or glabrous, indumentum never ferrugineous. Inflorescence much-branched, consisting of 10 or more racemes. Flowers 1–2.5 mm long. Stamens 1–2 mm long. Sepals often glundulosly fimbriate
11d. **A. montanum** var. **wallichii**
11. Leaves drying reddish brown. Plant with ferrugineous indumentum, at least at the tip of the branchlets. Inflorescences simple or branched, consisting of up to 7 racemes. Flowers 1 mm long. Stamens 0.8–1 mm long. Sepals never glundulosly fimbriate 11. **A. neurocarpum**
9. Stipules not foliaceous, up to 4 mm wide
12. Bracts longer than 1.5 mm, conspicuous even in very young inflorescences. Sepals 5–7, free. Disc cushion-shaped, enclosing the bases of the filaments and pistillode, glabrous. Indumentum especially of young plant parts densely hirsute and never ferrugineous. Leaves abaxially hairy, drying olive-green 17. **A. velutinum**
12. Bracts up to 1.5 mm long. Leaves and flowers various
13. Stamens 2, rarely 3. Pistillode absent. Pedicels 1–1.5 mm long
13. Stamens 3–5. Pistillode present or absent. 0–1.5–(2) mm long
14. Disc glabrous (sometimes hairs at base of calyx)
15. Flowers 3–4 by 3 mm, sessile, smelling strongly of bat's droppings (unpleasant cheesy smell), attracting flies. Stamens 1.5–2 mm long exserted from the calyx. Anthers 0.5 by 0.7 mm. Pistillode present
16. Indumentum lacking or whitish. Abaxial leaf surface glabrous except sometimes along the midvein. Often cultivated 2a. **A. buniis** var. **buniis**
16. Indumentum ferrugineous. Abaxial leaf surface pubescent all over. Rare
2b. **A. buniis** var. **pubescens**
15. Flowers 1–2.5 by 1–2 mm, sessile or pedicellate, without unpleasant cheesy smell. Stamens 0.5–2 mm long exserted from the calyx. Anthers various. Pistillode present or absent
17. Disc extrastaminial-annular
18. Stipules 3–7 by 0.5–1 mm. Petiole 1.2–1.5 mm wide. Indumentum ferrugineous. Leaves abaxially pubescent all over, distinetly velvety to the touch, up to 18 cm long, always drying reddish brown. Inflorescences 4–7 cm long, axillary or more rarely cauline 18. **A. velutinum**
18. Stipules 1–3 by 0.2–0.5 mm. Petiole 0.7–1(–1.2) mm wide. Indumentum ochraceous. Leaves abaxially pubescent all over or only along the veins, up to 13 cm long, drying olive-green, greyish or reddish brown. Inflorescences 4–11 cm long, terminal or more rarely axillary 15. **A. sootepense**
17. Disc consisting of free lobes (which are short and may appear to be fused extrastaminally in *A. pendium*) or disc cushion-shaped, enclosing the bases of the filaments and, if present, pistillode (observe carefully, dried flowers may have to be softened)

19. Disc consisting of free lobes

20. Petiole 1.5–6 mm wide, glabrous. Leaves (13–)25–50 by (4–)7–14 cm, chartaceous to coriaceous, usually drying yellowish-brown. Inflorescences ca. 15 cm long, simple, solitary or fascicled in twos, axis glabrous. Pistillode glabrous. Stipules usually persistent, 0.5–3 mm wide. Midvein usually gently raised adaxially

**13. A. pendium**

20. Petiole 0.5–1.2 mm wide, hairy. Leaves 3–11(–16) by 1–4(–5.5) cm, chartaceous to membranaceous, drying olive-green, reddish or greyish brown. Inflorescences 2–11 cm long, simple or branched, axis hairy. Pistillode pubescent. Stipules early caducous, 0.2–0.5 mm wide. Midvein impressed adaxially

21. Inflorescences 2–4 cm long. Young twigs first dark brown with conspicuous lenticels, then light grey to whitish, glabrous to puberulent. Stamens 0.5 mm long exerted from the calyx. Petiole (4–)6–17 mm long. Leaves glabrous or slightly hairy only along the midvein, higher venation not conspicuously tesselated

**3. A. forbesii**

21. Inflorescences 4–11 cm long. Young twigs brown, (usually densely) ochraceo-tomentose. Stamens 1–2 mm long exerted from the calyx. Petiole 2–11 mm long. Leaves abaxially hairy at least along the veins, higher venation finely tesselated

**4. A. sooteopense**

19. Disc cushion-shaped, enclosing the bases of the filaments and pistillode

22. Indumentum especially of young plant parts and inflorescences ferrugineous to ochraceous

23. Petiole 2–5 mm wide. Leaves (8–)15–30(–55) by up to 25 cm, tertiary veins percurrent, close together. Inflorescences 6–14 cm long, always simple, mostly thick, with flowers so densely arranged that they touch each other. Bracts 0.7–1.5 by 0.5–1 mm. Disc glabrous or pubescent. Pistillode present, 0.2–0.4 mm long, pubescent

**16. A. tomentosum**

23. Petiole 1 mm wide. Leaves (6–)9–14(–20) by up to 7 cm, tertiary veins weakly percurrent to reticulate. Inflorescences 2–6 cm long, simple or branched, very slender, with flowers more widely spaced, not touching each other. Bracts 0.5 by 0.3 mm. Disc glabrous. Pistillode absent or tiny, up to 0.1 mm long, glabrous to sparsely pilose

**11. A. neurocarpum**

22. Indumentum whitish or absent

24. Plant rheophytic, leaves 4–10 times longer than wide or narrower than 2 cm

25. Average leaf size 5–11 by 1–2 cm. Leaf apex acuminate

**10c. A. montanum var. saicinum**

25. Average leaf size 3–6 by 0.4–1.2 cm. Leaf apex acute, sometimes rounded at the very tip

**10a. A. montanum var. microphyllum**

24. Plant not rheophytic, leaves (1.2–)2.5–3.5(–6.6) times longer than wide

26. Inflorescence, pedicels and flowers slender, usually very regular. Petiole 0.5–1 mm wide. Sepals free. Leaves chartaceous to suncoraceous, often conspicuously shiny, narrowly elliptic-oblong to ovate or obovate, average leaf size 6–10 by 2–3.5 cm

**6a. A. japonicum var. japonicum**

26. Inflorescence, pedicels and flowers not conspicuously slender. Petiole 0.7–2 mm wide. Sepals free to halfway fused. Leaves variable, not conspicuously shiny

**10b. A. montanum var. montanum**

14. Disc hairy all over or at least at the margin

27. Disc consisting of free lobes. Pedicel 0

28. Inflorescence ca. 15 cm long. Pistillode glabrous. Petiole 1.5–6 mm wide. Stipules 6–25 by 0.5–3 mm, usually persistent. Leaves (13–)25–50 by (4–)7–14 cm

**13. A. pendium**

28. Inflorescence 4–12 cm long. Pistillode hairy. Petiole 0.7–1.5 mm wide. Stipules 2–6 (–10) by 0.5–1 mm, usually caducous. Leaves 2–15(–20) by 2–4.5(–9) cm
29. Sepals free, pubescent outside. Young twigs brown. Leaves 1–2.25 times longer than wide, base rounded to cordate, rarely acute. Inflorescences 4–8 cm long, much-branched, consisting of 10–20 racemes

29. Sepals fused for 1/2 of their length or more, glabrous to sparsely pilose outside. Young twigs whitish. Leaves 2–4.7 times longer than wide, base acute to rounded. Inflorescences 6–12 cm long, simple or branched once

8. A. leucocladon

27. Disc cushion-shaped, enclosing the bases of the filaments and pistilode. Pedicel various

30. Indumentum especially of young plant parts, inflorescences and disc ferrugineous to ochraceous. Petiole 2–5 mm wide. Leaves 8–55 cm long, drying reddish brown. Flowers sessile. Stamens 0.5 mm long exerted from the calyx

16. A. tomentosum

30. Indumentum whitish or absent. Petiole 0.7–2 mm wide. Leaves 1.5–30 cm long, drying various colours. Flowers sessile or pedicellate. Stamens 0.5–2 mm long exerted from the calyx

31. Young twigs light grey, glabrous or nearly so. Leaves drying greyish green to reddish brown, chartaceous to coriaceous. Anthers 0.5–1 mm long and wide. Sepals never glandulously fimbriate. Flowers 2–3 mm long

5. A. helferi

31. Young twigs brown, densely hairy. Leaves usually drying olive-green, membranaceous to chartaceous, only larger leaves sometimes coriaceous. Anthers 0.2–0.5 mm long and wide. Sepals often glandulously fimbriate. Flowers 1.25 mm long

32. Lower leaf side patulously hisrate all over, especially along the veins

12. A. orthygine

32. Lower leaf side glabrous except along the major veins

33. Plant not rheophytic, leaves 1–3.5 (–6.6) times longer than wide

(10b. A. montanum var. montanum)

33. Plant rheophytic, leaves 4–10 times longer than wide or narrower than 2 cm

34. Average leaf size 5–11 by 1–2 cm. Leaf apex acuminate

(10c. A. montanum var. salicinum)

34. Average leaf size 3–6 by 0.4–1.2 cm. Leaf apex acute, sometimes rounded at the very tip

(10a. A. montanum var. microphyllum)

KEY FOR PISTILLATE AND FRUITING MATERIAL

See notes under Key for Staminate Material

1. Leaf apex rounded or retuse, more rarely obtuse

2. Leaf base cordate to rounded, very rarely acute. Sepals free, pubescent outside. Ovary pubescent. Stipules 1–2 mm wide. Petiole 0.7–1 mm wide. Fruiting pedicel 0–1 mm long. Inflorescences consisting of (1–)10–20 racemes

4. A. ghaesembilla

2. Leaf base acute or obtuse, mostly cuneate. Sepals fused for 2/3rd of their length, glabrous outside. Ovary glabrous. Stipules 0.5–1 mm wide. Petiole 1–2 mm wide. Fruiting pedicel 1.5–3 mm long. Inflorescences simple to branched twice

1. A. acidum

1. Leaf apex acute, acuminate or caudate

3. Midvein in sicco sharply raised adaxially, distinctly perceptible to the touch. Inflorescences simple

4. Leaves 6–7.5 cm long, 2.5–3.5 times longer than wide, chartaceous to subcoriaceous. Indumentum of stipules, inflorescence axis and bracts whitish. Ovary glabrous. Fruit 5–6 (–8) by 4–5 (–6) mm, glabrous. Infructescence 4–8 cm long. Stipules 2–5 mm long

6b. A. japonicum var. robustus

4. Leaves 13–27 cm long, 4–5.5 times longer than wide, coriaceous. Indumentum of stipules, inflorescence axis and bracts ferrugineous. Ovary appressed-pubescent. Fruit 8–11 by 5–8 mm, pilose. Infructescence 7–15 cm long. Stipules 4–10 mm long

7. A. laurifolium

3. Midvein in sicco impressed to gently raised adaxially, not distinctly perceptible to the touch. Inflorescences various

5. Inflorescences at least partly ciliate

6. Petiole (at least of some leaves) longer than 10 mm, 1–1.5 mm wide, basally and distally usually slightly swollen and sometimes geniculate

14. A. puncticulatum

6. Petiole shorter than 10 mm (if longer, then wider than 1.5 mm), basally and distally not swollen or geniculate
7. Tertiary veins close together, more than 10 between every two secondary veins. Petiole 1.5–4 mm wide. Leaves (7–)13–24(–50) by (2.5–)4–8(–15) cm. Calyx 0.3–0.5 mm long. Infracrescence 10–25(–69) cm long. Fruiting pedicel 0.5–9 mm long

9. *A. leucopodum*

7. Tertiary veins widely spaced, less than 9 between every two secondary veins. Petiole up to 2 mm wide. Infracrescences 3–8 cm long. Leaves (5–)8–14(–19) by (2–)3–5(–7.5) cm. Calyx 0.7–1.2 mm long. Infracrescences 3–15 cm long. Fruiting pedicel 0.5–2.5 mm long

8. Stipules, petiole and lower leaf side hairy all over. Indumentum ferrugineous. Inflorescence 2–4 cm, infructescence 3–8 cm long. Sepals halfway fused. Disc glabrous (sometimes hairs at base of calyx). Fruit 4–5 by 3 mm, with a terminal to slightly subterminal style

18. *A. velutinum*

8. Stipules, petiole and lower leaf side glabrous. Indumentum absent to whitish. Inflorescence 4–10 cm, infructescence 4–15 cm long. Sepals free or nearly so. Disc hairy. Fruit 6–8 by 4–6 mm, with a lateral to subterminal (rarely terminal) style

5. *A. helferi* (sometimes terminally condensed)

9. Stipules foliaceous, more than 4 mm wide

10. Disc pilose. Calyx 0.7–1.2 by 1.2–1.5 mm. Stipules, petiole and leaves glabrous

5. *A. helferi*

10. Disc glabrous, rarely pilose. Calyx 0.3–0.8 by 0.5–0.8 mm. Stipules, petiole and major veins on lower leaf surface pilose

11. Leaves drying olive-green. Plant with whitish indumentum or glabrous, indumentum never ferrugineous. Inflorescence simple to much-branched, consisting of 1–13 racemes, 4–10 cm long. Sepals often glandulously fimbriate. Fruiting pedicel 1–4 mm long. Fruit 2–3(–6) by 2.5–4(–6) mm

10d. *A. montanum* var. *wallichii*

11. Leaves drying reddish brown. Plant with ferrugineous indumentum, at least at the tip of the branchlets. Inflorescence simple, rarely branched once or in fascicles of two. 1.5–6 cm long. Sepals never glandulously fimbriate. Fruiting pedicel 1–20 mm long. Fruit 6–10 by 4–7 mm

11. *A. neurocarpum*

9. Stipules not foliaceous, up to 4 mm wide

12. Bracts longer than 1.5 mm, conspicuous even in very young inflorescences, less so in old infructescences. Fruit lens-shaped, obliquely ellipsoid or bean-shaped, 4–7 by 4–6 mm, with a distinctly asymmetrical base and lateral styles, laterally compressed. Sepals 5–8, free. Disc glabrous. Indumentum especially of young plant parts densely hirsute and never ferrugineous. Leaves abaxially hairy, drying olive-green

17. *A. velutinosum*

12. Bracts up to 1.5 mm long. Leaves, flower and fruit various

13. Sepals fused for more than 1/2 of their length

14. Fruit roughly bean-shaped, with a lateral style and an asymmetrical base, 5–8 by 4–6 mm. Leaves chartaceous to submembranaceous

3. *A. forbesii*

14. Fruit mostly ellipsoid, with a terminal to subterminal (sometimes lateral in *A. leucocladon*) style and a symmetrical base, size various. Leaves chartaceous to coriaceous

15. Fruit (3–) 4–6(–8) by 3–4(–6) mm, laterally compressed or terete. Midvein impressed to flat adaxially. Leaves with or without domatia, pilose at least along the major veins

16. Inflorescence 2–3 cm, infructescence 2.5(–8) cm long. Leaves with domatia between midvein and secondary veins abaxially. Calyx pitcher-shaped, lobed for up to 1/3rd of its length, margin never glandulously fimbriate

1. *A. acutum*

16. Inflorescence 3–10 cm, infructescence 6–20 cm long. Leaf domatia present or absent. Calyx various

17. Calyx pitcher-shaped, lobed for 1/4th–1/2 of its length, margin never glandulously fimbriate. Leaves often with domatia, ochraceous–pilose at least along the veins abaxially, higher venation finely tessellated. Fruit without or with inconspicuous white pustules when dry

15. *A. sootepeense*

17. Calyx cup-shaped, lobed for 1/2 of its length, margin often glandulously fimbriate. Leaves without domatia, usually glabrous except along the major veins, higher venation not conspicuously tessellated. Fruits usually with conspicuous white pustules when dry

18. Plant rheophytic, leaves 4–10 times longer than wide

(10c. *A. montanum* var. *salicinum*)

18. Plant not rheophytic, leaves 2–3.5(–6.6) times longer than wide

(10b. *A. montanum* var. *montanum*)
15. Fruit 5–13 by 4–9 mm, laterally compressed. Midvein gently raised to flat adaxially. Leaves without domatia, completely glabrous or pubescent.

19. Sepals fused for up to 1/2 of their length; calyx in flower and fruit cup-shaped to shallowly cup-shaped. Fruit 10–13 by 7–11 mm. Inflorescence 25–75 cm long. Flowers sessile, fruiting pedicle 0–1(–3) mm long. Stipules usually persistent, 6–25 mm long. Leaves (13–)25–30(–50) cm long. Petiole 1.5–5 mm wide

A. pendulum

19. Sepals fused for 2/3rd–3/4th of their length; calyx in flower and fruit cup-shaped, pitched-shaped or cylindrical. Fruit 5–11 by 4–7 mm. Inflorescence 7–17 cm long. Flower shortly pedicellate, fruiting pedicle 1–9 mm long. Stipules early caducous, 2–6(–10) mm long. Leaves (5–)10–18(–32) cm long. Petiole 0.7–2 mm wide

20. Young twigs whitish. Inflorescence 7–10 cm long. Fruit pedicel 1–2.5 cm long. Disc hairy. Fruit with subterminal to lateral style. Calyx 0.5–0.8 mm long, inside at the base without or with whitish hairs. Petiole 0.7–1.5 mm wide. Stipules 0.5–1 mm wide. Leaves membranaceous to chartaceous

A. leucocladon

20. Young twigs brown. Inflorescence 10–17 cm long. Fruit pedicel 2–9 cm long. Disc glabrous. Fruit with terminal to slightly subterminal style. Calyx 1–1.5 mm long, inside at the base with long furruginose hairs. Petiole 1.5–2 mm wide. Stipules 1.5–2 mm wide. Leaves coriaceous

21. Indumentum laking or whitish. Abaxial leaf surface glabrous except sometimes along the midvein. Ovary glabrous. Often cultivated

A. bunius var. bunius

21. Indumentum furruginose. Abaxial leaf surface pubescent all over. Ovary sparsely pilose. Rare

A. bunius var. pubescent

13. Sepals free to fused for up to 1/2 of their length

22. Indumentum especially of young plant parts and inflorescences furruginose to ochraceous

23. Fruit 4–5 by 3 mm. Fruiting pedicel 0–1 mm long. Inflorescence 3–8 cm long. Leaves up to 18 cm long. Stipules 3–7 by 0.5–1 mm

24. Sepals free. Petiole 0.7–1 mm wide. Disc glabrous to pubescent. Ovary ovoid to globose. Leaves drying olive-green, 1–2.25 times longer than wide, abaxially pubescent to nearly glabrous

A. ghaesembilla

24. Sepals fused for 1/2 of their length. Petiole 1.2–1.5 mm wide. Disc glabrous. Ovary almost cylindrical. Leaves drying reddish brown, 2–4 times longer than wide, abaxially furruginose-pubescent all over, distinctly veiny to the touch

A. veutilium

23. Fruit 6–20 by 4–9 mm. Fruiting pedicel 1–23 mm long. Inflorescence 4–65 cm long. Leaves up to 50 cm long. Stipules 3–35 by 1–18 mm

25. Petiole 2–5 mm wide. Leaves (8–)15–30(–55) by up to 25 cm, tertiary veins recurved, close together. Fruit obliquely ovate (mango-shaped) to falcate, always laterally compressed, hairy (old fruits sometimes almost glabrous). Disc glabrous to pubescent. Ovary ovoid to falcate, densely appressed-pubescent. Inflorescence (5–)10–30 cm, inflorescence 10–65 cm long

A. tomentosum

25. Petiole 1 mm wide. Leaves (6–)9–14(–20) by up to 7 cm, tertiary veins weakly recurved to reticulate. Fruit ellipsoid, globose, ovate or obovate, compressed or terete, glabrous, rarely thinly puberulent. Disc glabrous. Ovary globose, glabrous, rarely pilose. Inflorescence 1.5–6 cm long, inflorescence 4–16 cm long

A. neurocarpum

22. Indumentum whitish or absent

26. Fruit 10–13 by 7–9 mm, reticulate, laterally compressed. Sepals never glandously limbricate. Inflorescences simple, 8–35 cm, inflorescences 25–75 cm long. Stipules 6–25 mm long. Leaves (13–)25–30(–50) cm long, midvein flat to gently raised, rarely slightly compressed adaxially. Stipules, petiole and inflorescence axis usually glabrous. Fruiting pedicel 0–1(–3) mm long

A. penicium

26. Fruit 3–8 by 2.5–6 mm, areoioae, compressed or terete. Sepals often glandously limbricate. Inflorescences simple or branched, 2–10 cm long, inflorescences 2.5–20 cm long. Stipules 1.5–7(–13) mm long. Leaves (1.5–)3–15(–30) cm long, midvein impressed adaxially. Stipules, petiole and inflorescence axis usually hairy. Fruiting pedicel 1–6 mm long

A. orthogyne

27. Fruit ventrally and dorsally compressed, 7–8 by 4–5 mm, pilose. Disc, ovary and abaxial leaf side (at least along the veins) densely hirsute
27. Fruit laterally compressed or terete. Fruit size and indumentum various
28. Plant rheophytic. Leaves 4–10 times longer than wide or narrower than 2 cm. Fruit terete
29. Average leaf size 5–11 by 1–2 cm. Leaf apex acuminate

10c. A. montanum var. salicinum

29. Average leaf size 3–6 by 0.4–1.2 cm. Leaf apex acute, sometimes rounded at the very tip
10a. A. montanum var. microphyllum

28. Plant not rheophytic. Leaves 1–3.5 (–6.6) times longer than wide. Fruit compressed or terete
30. Fruit laterally compressed
31. Disc glabrous. Fruiting pedicle (2–)3–6 mm long. Fruit glabrous

6a. A. japonicum var. japonicum

31. Disc hairy (if glabrous, fruiting pedicle 0–1 mm long and fruit hairy). Fruiting pedicle 0–2.5 mm long. Fruit pilose or glabrous
32. Fruit 6–8 by 4–6 mm, with a lateral to subterminal, rarely terminal style. Leaf base acute. Leaves drying greyish green to reddish brown, glabrous. Inflorescence 4–10 cm, infructescence 4–24 cm long, simple or branched once or twice. Sepals rounded to acuminate. Stipules, petiole and leaves glabrous. Young twigs light grey
5. A. helleri

32. Fruit 3–5 by 2.5–3 (–3.5) mm, with a terminal to slightly subterminal style. Leaf base rounded to cordate, rarely acute. Leaves drying olive-green, pubescent at least along the major veins abaxially. Inflorescence 2–3 cm, infructescence 3–7 cm long, usually much-branched. Consisting of (1–)10–20 racemes. Sepals acute. Stipules, petiole and leaves usually pubescent. Young twigs brown
(4 A. ghesemhalla)

30. Fruit terete or hardly laterally compressed
33. Calyx pitcher-shaped, lobed for ½h–1/2 of its length, margin never glandulously fimbriate. Leaves often with domatia, ochraceous-pilose at least along the veins abaxially, higher venation finely tessellated. 3–12.5 by 1–4.2 cm. Petiole 0.7–1 (–1.2) mm wide. Fruit without or with inconspicuous white pubescent when dry
15. A. soostepense

33. Calyx cup-shaped, lobed for ca. ½ of its length, margin often glandulously fimbriate. Leaves without domatia, usually glabrous except along the major veins. Higher venation not conspicuously tessellated. 6–30 by 2–12 cm. Petiole 1–2 mm wide. Fruits usually with conspicuous white pubescent when dry

10b. A. montanum var. montanum


Thailand.—Northern: Mae Hong Son, Chiang Mai, Chiang Rai, Nan, Lamphun, Lampang, Phrae, Tak, Phitsanulok, Kamphang Phet; Northern-Eastern: Phetchabun, Loei, Nakorn Panom; Eastern: Buri Ram, Surin, Si Sa Ket, Ubon Ratchathani; South-Western: Uthai Thani, Kanchanaburi, Ratchaburi; Central: Saraburi; Southern-Eastern: Chon Buri, Chanthaburi; Peninsular: Ranong, Phangnga, Krabi, Satun.

Ecology.—In dry deciduous, deciduous and evergreen forest, forest edges, open spaces, bamboo thickets; open or half-shady habitats; secondary, often disturbed, much degraded or frequently burnt vegetation. On sandy gravel, red volcanic soil, sand, silt or red lateritic soil, over limestone, granite and shale-granite; 0–1600 m.

Uses.—Fruits eaten. Young leaves used in curry and as vegetable (India and Thailand).

Vernacular.—Haw cha (Karen); kho cho la, mau (Northern); mao soi (ม้าสกุล) (North-eastern); mak mau (แม่ม้า), nong sa (Karen South-western).


Distribution.—India (type) incl. Andaman & Nicobar Islands, Sri Lanka, S. China, Myanmar, Laos, Vietnam, Thailand, Singapore, Borneo, Java, Philippines, Sulawesi, Lesser Sunda Islands, Moluccas, New Guinea, Christmas Islands (Indian Ocean), Tahiti, Hawaiian Islands. As A. bunius is widely cultivated as a fruit tree, it is impossible to distinguish truly wild occurrences.

Ecology.—In wet evergreen forests, open forests, deciduous dipterocarp forest, thickets, bamboo thickets, teak forest, river banks, forest edges, by roadsides, semi-cultivated and cultivated areas, gardens, shady or open habitats, usually in secondary but also in primary vegetation. On sand, loam or clay over (coral) limestone or granite bedrock. 0–2100 m.

Uses.—Widely cultivated as a fruit tree. Wood subject to termite attacks and therefore unsuitable for work in contact with the soil (Vietnam, Poilane 10901). Leaf eaten as vegetable (Java).

Vernacular.—Mamao dong (แม้วอม) (Laos); mamo khwai (แม้ว่หวาน), mau, sa phou pho-maou san (Northern).


Thailand.—NORTHERN: Lamphun (type: Mae Li, Winit 295, holotype K!); NORTH-EASTERN: Phetchabun (Lom Kao).
Distribution.—Endemic to Thailand.

Ecology.—In evergreen forest by stream; 700–1020 m.

Note.—These specimens have been referred to by Airy Shaw (1971: 359) as Antidesma cf. nienkui Merr. & Chun. Apart from the considerable disjunction, A. bunius var. pubescens differs from the type and only specimen of A. nienkui from Hainan in the shorter petioles and fused calyx lobes. Both taxa, however, have a similar dense ferrugineous indumentum in most parts, which distinguishes them from the nearly glabrous A. bunius var. bunius.


Thailand.—PENINSULAR: Phangnga.

Distribution.—Thailand (one collection), Peninsular Malaysia (Pahang, Cameron Highlands only), Sumatra (type).

Ecology.—In montane rain and mossy forest; 1000–1900 m.


Distribution.—India incl. Nicobar Islands, Sri Lanka, S. China, Bangladesh, Myanmar, Laos, Vietnam, Cambodia, Thailand, Peninsular Malaysia, Sumatra, Borneo (Kalimantan, Sabah), Java, Philippines, Sulawesi, Lesser Sunda Islands, Moluccas, New Guinea, N. Australia. Type without locality.

Ecology.—In savannah, grassland (often regularly burnt, said to be fire resistant. NGF 9809), open forest, dense scrubby forest, vine thickets, fresh-water swamps, edge of mangrove, coastal fringes, secondary vegetation around towns and villages (Malay: 'belukar'); on roadsides and river banks, on dry to swampy ground; usually in secondary vegetation. On clay, sand, lateritic soil, black peat, limestone, sometime on ultrabasic, over shale and granite bedrock; 0–1250 m.

Uses.—Fruits eaten locally.
Vernacular.— Mamao soi (มาหม้อ), mao (มา) (Northern); mamao (มาหม้อ), mak mao (มาหม้อ) (North-eastern); mamao (มาหม้อ), mak mao (มาหม้อ) (South-western); mak mao (มาหม้อ) (Central); mamao (มาหม้อ) (South-eastern); mamao khao bao (มาหม้อเข่า บ้า), mao khai pla (มาไห่เป่า), mao (มา) (Peninsular).


Thailand.— Peninsular: Ranong, Phangnga, Krabi, Nakhon Si Thammarat, Trang.

Distribution.— Peninsular Myanmar (type), Thailand, Peninsular Malaysia, Sumatra (Aceh and East coast).

Ecology.— In primary evergreen or mossy forest, often near water or on marshy ground. On alluvial and greyish clay-mud soil, 100–1300 m.

Notes.— The specimens from Peninsular Malaysia and from Sumatra have bigger, more elliptic, thinner and dull leaves than those from Myanmar and Thailand, whereas the generative characters are uniform throughout the distribution area.

The fruiting specimens Kerr 18703 from Krabi, and Larsen et al. 45988 from Khao Luang, Nakhon Si Thammarat, differ by their glabrous discs from the remainder of the collections. In this and all vegetative characters the latter specimen much resembles the unmatched collection van Beusekom & Phengkhla 967 from the same locality and altitude.


Thailand.— Northern: Chiang Mai, Phitsanulok; Eastern: Nakhon Ratchasima; South-western: Ratchaburi, Phetchaburi, Prachuap Khiri Khan; South-eastern: Chon Buri, Chanthaburi; Peninsular: Nakhon Si Thammarat, Phatthalung, Songkhla, Pattani, Yala, Narathiwat.

Distribution.— Japan: Kyushu and Ryukyu Islands (type). Taiwan. S. China, Myanmar, Vietnam, Thailand, Peninsular Malaysia, Philippines (Luzon, Mindanao).

Ecology.— In (evergreen) forest, often damp and thick, in virgin forest, dipterocarp forests, dry thickets, on limestone cliffs, along roadsides, in primary or secondary vegetation, on wet or dry ground. On sandy soil, clay, limestone, over granite bedrock; 0–1700 m.

Uses.— Fire wood.

**Thailand.**—EASTERN: Nakhon Ratchasima (Pak Thong Chai/Sakaerat area (type: Pak Thong Chai ('TREND Camp'), E part of Khao Yai National Park, *Larsen, Sanitsuk & Warnecke* 3137 (holotype K!; isotypes AAU, L!)).

**Distribution.**—Endemic to Thailand.

**Ecology.**—In dry evergreen forest; 350–500 m.


**Thailand.**—SOUTH-EASTERN: Chanthaburi (type: Kao Sabap, *Kerr* 18012 (holotype K!; isotype L!)), Trat.

**Distribution.**—Cambodia (Kampot province), Thailand.

**Ecology.**—In (dry) evergreen forest and secondary growth; 0–600 m.

**Note.**—Erroneously published as 'sp. nov.' again (Airy Shaw 1972: 458). The specimens cited there include two collections from Johore, Peninsular Malaysia (NW Gunung Blumut, 15 and 17 May 1968, *Whitmore 8786 and 8853*), which could not be located. The occurrence of *Antidesma laurifolium* in Johore, which would make the distribution strangely disjunct, is therefore doubtful.


**Thailand.**—SOUTH-EASTERN: Chanthaburi (only one collection); PENINSULAR: Chumphon, Ranong, Surat Thani, Nakhon Si Thammarat, Trang.

**Distribution.**—Thailand, Peninsular Malaysia (type), E. Sumatra.

**Ecology.**—In primary evergreen forest, sometimes along streams or in fresh water swamps; 0–800 m.

**Vernacular.**—Phak wan lang khao (พัฒนาน้ำล้างขาว) (Peninsular).


**Thailand.**—SOUTH-WESTERN: Kanchanaburi (see note); PENINSULAR: Yala, Narathiwat.

**Distribution.**—Thailand, Peninsular Malaysia, Sumatra (type), Borneo, Philippines (Basilan, Mindanao).

**Ecology.**—In lowland to lower montane (mixed) dipterocarp forest up to 50 m tall, mossy forest, riverine forest, usually in damp understorey, also on roadsides, primary or secondary vegetation. On loam and clay over sandstone and shale, alluvial soil and limestone rocks; 0–2200 m.
Vernacular.—Mao polo (ยิลญา) (Peninsular).

Uses.—Firewood.

Note.—The specimen van Beusekom & Phengklai 245 from Kanchanaburi, is the only collection made north of the Isthmus of Kra. The staminate inflorescences are terminal and rather short (3–5 cm long), but the flowers and leaves are typical of Antidesma leucopodium. The distribution map in Baker et al. (1998: 252, fig. 6B) does not take this specimen into account.

10. Antidesma montanum Blume, Bijdr.: 1124. 1826–27 (non Thwaites)

Note.—This is the most common and one of the most variable species of the genus. It is treated here in a broad sense. Antidesma japonicum Sieb. & Zucc. is accepted here as separate species although there are several transitional specimens.


Thailand.—NORTH-EASTERN: Loei (Wang Saphung); EASTERN: Chaiyaphum (Ban Nam Phrom, Nam Phrom, Phu Khiao E. of Chaiyaphum).

Distribution.—India (Assam), S. China (type), Myanmar (Southern Shan States), Laos, Vietnam, Thailand.

Ecology.—In (evergreen) forest along rivers. On sandstone: 300–1000 m.

Note.—var. microphyllum is a very small-leaved rheophyte. It differs only slightly from var. salicinum, mainly in leaf size and shape, and may have to be subsumed under this name when the genus has been revised for India, China, Myanmar, Laos and Vietnam.


Thailand.—NORTHERN: Mae Hong Son, Chiang Mai, Nan, Lamphun, Lampang, Phrae, Tak, Phitsanulok, Kamphaeng Phet, Nakhon Sawan; NORTH-EASTERN: Loei, Nakhon Phanom; EASTERN: Nakhon Ratchasima; SOUTH-WESTERN: Kanchanaburi; CENTRAL: Saraburi, Bangkok; SOUTH-EASTERN: Prachin Buri, Chachoengsao, Chon Buri, Chanthaburi, Trat; PENINSULAR: Chumphon, Ranong, Surat Thani, Phangnga, Phuket, Krabi, Nakhon Si Thammarat, Phatthalung, Trang, Satun, Songkhla, Pattani, Yala, Narathiwat.
Distribution.— India incl. Andaman & Nicobar Islands, Bhutan, Bangladesh, S. China, Japan (Ryukyu Islands), Taiwan, Laos, Vietnam, Cambodia, Thailand, Peninsular Malaysia, Sumatra, Borneo, Java (type). Sulawesi, Lesser Sunda Islands, Moluccas, New Guinea (Irian Jaya), Australia (Prince of Wales Island, N Queensland).

Ecology.— In primary and secondary evergreen to deciduous vegetation, mixed dipterocarp forest, riparian and littoral forest, coastal forest, beaches, monsoon forest, teak-forest. Agathis forest, bamboo groves, peat swamp forest, heath forest, thickets, grasslands, roadsides, around towns and villages (Malay: 'belukar'), also mossy montane forest, usually in understorey, from deep shade to total exposure, on dry to wet or seasonally flooded ground. Common in most places, with extremely high ecological amplitude. On sand, clay, loam, peat, volcanic and ultrabasic soil, over limestone, sandstone or granite; 0–2000 m.

Uses.— Often cultivated for its edible fruits. Wood used in house construction, for rice pestles and fire wood. Leaves applied to ulcers and lumber pains, roots applied for stomachache, the fruits or tea from the leaves 'as tonic after childbirth' (Philippines, labels of PNH 37987, 38059, 38372, Zwickey 699).

Vernacular.— Mau, se da kli (Karen Northern); ding da ti (South-western); korhier (South-eastern); mao (ui), na dao, som mao pru (Peninsular).


Thailand.— SOUTH-EASTERN: Chachoengsao (Khao Tak Groep); PENINSULAR: Pattani (Ban Kia, Tomo), Narathiwat (Waeng).

Distribution.— Bangladesh, N. Vietnam, Thailand, Peninsular Malaysia (type). Sumatra, Borneo.

Ecology.— Rheophyte. In riverine rain forest along rivers, often on swampy or seasonally flooded ground, among boulders or in the river bed, sometimes partly submerged in river. On sandstone; 0–700 m.


Thailand.— PENINSULAR: Ranong (Ranong hot springs), Phuket (Katu, Ton Sai waterfall), Nakhon Si Thammarat (Khao Luang, Lansaka, Wat Khiriwong), Trang (Khao Chong).

Distribution.— Peninsular Myanmar (Tenasserim; type) and Peninsular Thailand.

Ecology.— In evergreen forest, scrub or along forest edges, usually damp places e.g. along waterfalls, open or shaded, primary or secondary vegetation; 50–600 m.

Note.— Specimens without stipules are almost indistinguishable from the type variety.


Thailand.— PENINSULAR, Ranong, Surat Thani, Phangnga, Krabi, Nakhon Si Thammarat, Trang, Satun, Narathiwat.

Distribution.— Thailand, Peninsular Malaysia, Singapore, Sumatra (type), Borneo.

Ecology.— In lowland to montane forest up to 45 m tall, dipterocarp forest, freshwater swamps, along logging roads and rivers, open bamboo forest, submontane mossy forest, in thickets and heath forest, often dense, humid, shaded habitats, primary or secondary vegetation. On sand, clay, loam, lateritic or volcanic soil, over sandstone, limestone, shales, basalt or granite; 0–1800 m.

Uses.— Firewood.

Note.— A very variable species.


Thailand.— PENINSULAR, Satun (Khao Keo Range), Songkhla (Khao Keo), Naratiwat (Sungai Kolok, Nikom Waeng).

Distribution.— Thailand and Peninsular Malaysia (type).

Ecology.— In primary, sometimes disturbed, dipterocarp forest, 10–700 m.

Uses.— Wood used for planks. Juice from fruits used as an antiseptic (Cookburn FRI 7467).

Note.— This species has been confused with the similar Antidesma velutinosum Blume in the past. Hooker (in the protologue) as well as Airy Shaw (1972: 460) recognized it as a separate taxon because of the different fruits, but thought that staminate specimens are indistinguishable from A. velutinosum. Airy Shaw even suggested fruit dimorphism in A. velutinosum. The truth is that the type of A. orthogyne is a mixed gathering, consisting of twigs of A. orthogyne with very young fruits and one staminate flowering twig of A. velutinosum. No staminate specimen of A. orthogyne has hitherto been recognized and described as what it is, even though there are several staminate collections in different herbaria (usually filed under A. velutinosum). They can be distinguished from the latter species without great difficulty by their more widely spaced secondary veins, shorter bracts, fewer, more rounded sepals and, most importantly, by their hairy disc.

Thailand.— PENINSULAR: Narathiwat (Waeng).

Distribution.— Thailand, Peninsular Malaysia (type), Sumatra, Borneo (Kalimantan, Sarawak).

Ecology.— In primary or secondary forest, mixed dipterocarp forest, primary marshy forest, primary riverine forest, swamp forest, by waterfalls. On clay-loam soil over limestone, sandstone or granite; 15–600 (–1300) m.


Thailand.— NORTHERN: Lampang, Phitsanulok; EASTERN: Nakhon Ratchasima; CENTRAL: Ang Thong; SOUTH-EASTERN: Chon Buri, Chanthaburi, Trat; PENINSULAR: Ranong, Phangnga, Phuket, Krabi, Nakhon Si Thammarat, Trang.

Distribution.— India (only Nicobar and Andaman Islands), Sri Lanka, Vietnam, Cambodia, Thailand, Peninsular Malaysia, Sumatra (type), Borneo (E. Kalimantan, Sabah), S.W. Philippines (Balabac, Bancalan, Palawan). Distribution map in Baker et al. (1998: 252, fig. 6C).

Ecology.— In primary, more rarely secondary vegetation, evergreen primary, sometimes disturbed, forest, swamp forest, along river banks, at inner edge of the mangrove, secondary vegetation with *Dillenia* and *Melastoma*. On brown to black soil, sandy loam or peat, over sandstone; 0–500 m.

Vernacular.— Mao luang (ม้าหลวง), mao sian (ม้าสีน้ำ) (Northern); mat se (มาที่) (Peninsular).


Thailand.— NORTHERN: Mae Hong Son, Chiang Mai (type: Doi Suthep, Kerr 676 [lectotype K!; isolecotypes K!, TCD!]), Chiang Rai, Nan, Lamphun, Lampang, Phrae, Phitsanulok, Tak; NORTH-EASTERN: Pheichaban, Loei; EASTERN: Chaiyaphum; SOUTH-WESTERN: Kanchanaburi, Ratchaburi; CENTRAL: Saraburi; SOUTH-EASTERN: Chon Buri, Chanthaburi.

Distribution.— Myanmar (Northern Shan States), Laos, Thailand.

Ecology.— In primary or secondary vegetation, evergreen or deciduous (or mixed evergreen/deciduous) mixed or dipterocarp forest, gallery forest, often along streams, also in gardens; open to shady, sometimes dry, fire-prone habitats. On clay or lateritic soil, over shale, limestone, granite or sandstone bedrock; 120–1150 m.

Uses.— Fruits eaten.

Vernacular.— Mak mao (แม่ม้า) (Northern?); mamao duk (มาม้าดุ), mao (มา), sa pho mae (Northern).

var. tomentosum.—Antidesma cunningii Müll.Arg., in DC., Prodr. 15(2): 249. 1866.—
A. longipes Hook.f., Fl. Br. Ind. 5: 355. 1887 (non Pax).—A. membranifolium Elmer,

Thailand.—SOUTH-WESTERN: Prachuap Khiri Khan; PENINSULAR: Ranong,
Surat Thani, Phangnga, Krabi, Nakhon Si Thammarat, Phattalung, Trang, Narathiwat.

Distribution.—Thailand, Peninsular Malaysia, Sumatra, Borneo, W Java
(type), Philippines, Northern and Central Sulawesi.

Ecology.—In primary and secondary evergreen vegetation; mixed lowland to
hill dipterocarp forest; mossy forest, montane rainforest, dry shrubby heath forest on
sandstone (‘kerangas’), swamp forest, riverine forest, sometimes subject to flooding;
plantations, road sides, forest edges, thickets, wet to dry habitats. On clay, sand and
ultrabasic soil, over limestone, granite or sandstone: 0–1800 m.

Uses.—The hard wood is used in ploughs; firewood. Roots are chewed and
applied for internal pain (Philippines, PNH38075). Bark is burned and the ash is rubbed
on the teeth to colour them (Philippines, PNH13524).

17. Antidesma velutinosum Blume, Bijdr.: 1125. 1826–27.—A. attenuatum Tul.,
1865–66.—A. velutinosum Blume var. lancifolium Hook.f., Fl. Br. Ind. 5: 357. 1887,
‘lancifolia’, syn. nov.

Thailand.—NORTHERN: Chiang Mai, Nan, Tak; SOUTH-WESTERN: Kanchanaburi;
PENINSULAR: Ranong, Surat Thani, Phangnga, Phuket, Nakhon Si Thammarat,
Phatthalung, Trang, Satun, Songkhla, Pattani, Narathiwat.

Distribution.—Myanmar, Thailand, Peninsular Malaysia, Singapore,
Sumatra, Anambas & Natuna Islands, Java (type).

Ecology.—In primary and secondary evergreen (more rarely semi-evergreen)
vegetation; wet mixed and dipterocarp forest, gallery forest; usually humid, shady
habitat, often close to streams or waterfalls. On volcanic loam, limestone, granitic sand
and shale; 20–1200 m.

Uses.—Fruits eaten locally. Bark sold to the Chinese (Java, Winckel 311).

Vernacular.—Mao (ไห่), mao po lo (ไห่หล่อ), mao khao (ไห่หวาน) (Peninsular).

Pax & K.Hoffm. in Engl., Pflanzenr. 81: 135. 1922.—A. spaniothrix Airy Shaw, Kew
Bull. 33: 15. 1978, syn. nov.
Thailand. — Northern: Tak, Phitsanulok; Southwestern: Kanchanaburi; South-eastern: Chanthaburi, Trat; Peninsular: Chumphon, Ranong, Surat Thani, Phangnga, Phuket, Krabi, Nakhon Si Thammarat, Phatthalung, Songkhla.

Distribution. — India? (type), Myanmar, Cambodia, Thailand, Peninsular Malaysia (Perlis, Kedah).

Ecology. — In primary and secondary vegetation; dry, more rarely wet, evergreen, deciduous or mixed evergreen/deciduous forest, bamboo forest, often shady habitats near streams. On limestone, sandstone and granite; 0–600 m.

Vernacular. — Po mai cho (Karen South-Western); mao kuan, mau, mung mau (Peninsular).

Unmatched Specimen

van Beusekom & Phengkhlai 967 (aff. A. helferi)

Peninsular Thailand, Nakhon Si Thammarat province, Khao Luang, 23 May 1968 (K!. L!).

Shrub. Young twigs ferrugineous-pubescent, soon becoming glabrous, light to medium brown. Stipules caducous, linear, 1–1.5 by 0.3–0.5 mm, ferrugineous-pilose. Petiole 2–4 by 1.5 mm, pilose. Leaf blade elliptic to ovate, 4.5–10.5 by 1.7–3.6 cm, 2.7–3.4 times longer than wide, subcoriaceous, basally acute to obtuse, apically acute or acuminate, glabrous, midvein impressed adaxially, tertiary veins reticulate, widely spaced, drying greyish green adaxially, olive-green abaxially, domatia absent. Staminate inflorescences 3.5–6.5 cm long, axillary, simple or branched once at the base, axis pilose. Bracts deltoid, 0.7 by 0.5 mm, pilose. Staminate flowers 2 by 2 mm, sessile; calyx 0.8–1 by 1.5–2 mm, sepals 4 or 5, free, 0.5–1 mm wide, deltoid, apically acute to rounded, pilose outside, glabrous inside; disc consisting of 4 or 5 free lobes, lobes ± obconical, well-separated from each other, 0.5 by 0.5 mm, glabrous; stamens 4 or 5, 1.5–2 mm long, 1 mm long exerted from the calyx, anthers 0.3 by 0.7 mm; pistillode globose, 0.5 by 0.5 mm, pilose.

Ecology. — In mossy wet evergreen forest; 1500 m.

Note. — A staminate collection which combines vegetative characters of Antidesma helferi with a glabrous disc that consists of free lobes. It resembles very much the fruiting specimen Larsen et al. 45988 from the same locality and altitude (see A. helferi). This collection could not be satisfactorily matched but does not show sufficient differential characters to be described as new. It may be found to deserve taxonomic recognition when more material, especially pistillate, is gathered in the future.
ACKNOWLEDGEMENTS

Funding for this study from the European Community in the network 'Botanical Diversity of the Indo-Pacific Region', and a grant from the Netherlands Science Foundation (NWO) is gratefully acknowledged, with special thanks to P. Baas, M. Roos and P. van Welzen (all L). I am indebted to the directors and curators of the following herbaria for making their collections available for study: A, AAU, B, BM, BO, CANB, CGE, E, FHO, G, GH, K, KEP, L, LD, MEL, NY, OXF, P, PRC, SAR, SING, TCD, U, US and WRSL. The plates were drawn by H. Nixon (TCD). My work experience students R. Marchant (University of Reading) and M. Schmidt (Göttingen, Germany) greatly helped with data input. I also wish to thank Somran Suddee (BKF) for his kind help with the Thai localities and P. van Welzen for carefully reading the manuscript.

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