

- 3a. Petals free. Anthers J-shaped. — Solomon Islands **3. A. anomalum**
 b. Petals completely connate, splitting along a longitudinal line. Anthers linear. — Society Islands **51. A. saccatum**
- 4a. Indument mixed with capitate hairs **5**
 b. Indument not mixed with capitate hairs **7**
- 5a. Leaf blade margins irregularly serrulate **6**
 b. Leaf blade margins entire **11. A. confertiflorum**
- 6a. Leaf blades elliptic to oblong, base rounded to \pm cordate, midrib with a pair of nerves from 5–7 mm above the base, reticulate venation underneath prominently raised. Flowers 4-merous **23. A. kasiense**
 b. Leaf blades oblong to lanceolate, base acute, midrib with a pair of nerves from 1–2 mm above the base, reticulate venation underneath not prominently raised. Flowers 5-merous **42. A. pallidiflorum**
- 7a. Indument of various shades of brown, or absent, leaf blades beneath usually glabrous to sparsely lepidote or furfuraceous **8**
 b. Indument grey brown, dense, persistent, minutely, appressed lepidote. — Fiji **62. A. tomentosum**
- 8a. Midrib of leaf blade with a pair of nerves at base or from 1–2 mm above it; apex obtuse, broadly rounded to acute, or rostrate, rarely acuminate. — Apex obtuse and nerves 3–4 mm above base in *A. sudestense*; acute and 3–4 mm in *A. raphidifolium* **9**
 b. Midrib of leaf blade with a pair of nerves from usually more than 2 mm above the base, apex usually acute to acuminate **23**
- 9a. Indument not setose **10**
 b. Indument densely setose **58. A. storckii**
- 10a. Calyx c. 9 mm long by 9 mm diam. Capsules (where known) 11–12 mm long by 12–13 mm diam. **11**
 b. Calyx up to 7 mm long by 6.5 mm diam. Capsules up to 8 mm long by 9 mm diam. **12**
 (Note: Calyx unknown in *A. angulosum*, *A. basinervatum*, *A. biakense*; capsules unknown in *A. infundibulare*.)
- 11a. Petioles 1–2.2 cm. Leaf blades 6–12 by 3–5.5 cm. Calyx sparsely lepidote, margin irregularly lobed, lobes irregular, 1–2 mm long. — Fiji **29. A. macranthum**
 b. Petioles 2–4 cm. Leaf blades 10–16 by 4–8 cm. Calyx glabrous, margins irregularly undulate, lobes to 0.5 mm long. — Vanuatu . . **37. A. novae-ebudaense**
- 12a. Calyx not calyptrate **13**
 b. Calyx calyptrate in the upper two thirds. — Society Islands **19. A. glabrum**
- 13a. Branchlets and petioles glabrous to densely furfuraceous, not densely villous. Inflorescences or infructescences up to 14 cm long **14**
 b. Branchlets and petioles densely minutely brown villous lepidote. Inflorescences or infructescences more than 20 cm long. — Irian Jaya, Biak **6. A. biakense**
- 14a. Leaf blades chartaceous to coriaceous, 2.25–20 by 1–9 cm, margins not revolute. — Petioles 0.4–6.5 cm long **15**
 b. Leaf blades coriaceous, 1.3–3.3 by 0.7–1.7 cm, margins revolute. — Petioles 0.3–0.6 cm long **40. A. ovalifolium**

- 15a. Inflorescences 3–14 cm long. Calyx margin truncate or with distinct, 0.5–2 mm long lobes 16
- b. Inflorescences 1.5–2 cm long. Calyx margin truncate or with 0.1–0.2 mm high cusps. — Society Islands **51. A. saccatum**
- 16a. Calyx tube and capsules glabrous to sparsely lepidote. — Fiji, Samoa 17
- b. Calyx tube and capsules densely lepidote. — New Guinea, Japen I., New Britain 22
- 17a. Margins of calyx and capsule truncate, smooth or cracked. — Fiji 18
- b. Margins of calyx and capsule with regular or irregular, 0.5–2 mm long lobes 19
- 18a. Margins of calyx and capsule smooth **20. A. inflatum**
- b. Margins of calyx and capsule irregularly cracked **67. A. victoriae**
- 19a. Older branchlets and axes of the inflorescences or infructescences not acutely quadrangular, usually lepidote. — Leaf blades with a pair of nerves at the base of the midrib, or from 0.5–5 mm above it. Samoa 20
- b. Older branchlets and axes of the inflorescences or infructescences acutely quadrangular, glabrous. — Leaf blades with a pair of nerves at the base of the midrib. Fiji **2. A. angulosum**
- 20a. Margin of the calyx with 4–12 very irregular and unequal, rounded, up to 2 mm long lobes. Anthers hook- or J-shaped, locules smooth 21
- b. Margin of the calyx with 4 or 5 regular, broadly rounded and cuspidate, up to 0.5 mm long lobes. Anthers linear, locules tessellate **36. A. navigatorum**
- 21a. Leaf blades with a pair of nerves at the base of the midrib. Petals lanceolate. Spurs of the anthers subulate **45. A. pickeringii**
- b. Leaf blades with a pair of nerves from 1–5 mm above the base. Petals obovate. Spurs of the anthers hammer-like **53. A. samoense**
- 22a. Leaf blades 5.5–7.5 by 2–3 cm. — Midrib with a pair of nerves at the base. New Britain **5. A. basinervatum**
- b. Leaf blades 16.5–20 by 6–9 cm. — Midrib with a pair of nerves at 0–2 mm above the base. Japen I. **21. A. infundibulare**
- 23a. (8). Petioles adaxially with a conspicuous ligule or large auricles at or near the base 24
- b. Petioles without appendages at or near the base, or with inconspicuous small ones up to 3 mm long (see fig. 1b) 25
(Note: Such small ligules have been observed in e.g. *A. brassii*, *A. insulare*, *A. laeve*, *A. novoguineense*, *A. subvaginatum*.)
- 24a. Petiole at base adaxially with 1 supra-petiolar ligule, up to 1 by 0.5 cm. Calyx buds 7–7.5 by 5.5–7 mm, apex rounded, upper one third thinner, less furfuraceous, deciduous. — New Guinea **10. A. circumscissum**
- b. Petiole at base with a lateral pair of large auricles, c. 6 by 3 cm (see fig. 2b). Calyx buds c. 14 mm long by 10 mm diam., apex acute, uniformly thickened and furfuraceous, not deciduous. — Solomon Islands
32. A. miraculum-dei
- 25a. Branchlets and petioles glabrous to variously furfuraceous lepidote, but not villous. (Petioles white floccose in *A. muscosum* var. *decurrens*.) — Leaf blades usually less than 15.5 by 10.5 cm, underneath without villous main nerves 26

- b. Branchlets and petioles densely brown, spreading lepidote villous. Leaf blades 15.5–24.5 by 10.5–14 cm, underneath with villously lepidote main nerves. — Irian Jaya, Biak **6. A. biakense**
- 26a. Inflorescences or infructescences erect, usually less than 15 cm long. Pedicels less than 2 cm long 27
- b. Inflorescences or infructescences pendulous, 15–20 cm long. Pedicels up to 2 cm long, in fruit up to 3 cm long **46. A. ponapense**
- 27a. Nodes of the branchlets without annular crests. — Capsules, as far as known, with quadrangular or circular areoles 28
- b. Nodes of the branchlets with a pair of annular, prominently crenulate crests up to 5 mm wide. — Capsules with quadrangular areoles. Fiji . . **54. A. saulae** (Note: The fruits in many species are unknown, e.g. *A. cuneatum*, *A. fragilissimum*, *A. loloruense*, *A. mammiforme*, *A. morobiense*, *A. puberulum*, *A. raphidifolium*, *A. subvaginatum*, *A. sudestense*, *A. vaginato-villosum*, *A. vanikoroense*.)
- 28a. Anther locules tessellate 29
- b. Anther locules smooth 50
- 29a. Petals coherent in the lower one to two thirds 30
- b. Petals free 38
- 30a. Nodes of the branchlets, base of the petioles, and often the nodes of the axes of the inflorescences or infructescences floccose or setose 31
- b. Nodes of the branchlets, base of the petioles, and often the nodes of the axes of the inflorescences or infructescences not floccose or setose 33
- 31a. Leaf blades cuneate to rounded at base. Capsules up to 5 mm diam. — New Guinea, Solomon Islands 32
- b. Leaf blades cordate at base. Capsules 10–11 mm diam. — Samoa
59. A. subcordatum
- 32a. Leaf blades subcoriaceous. Calyx margin with 5 or 6 subequal, triangular, c. 1 mm long, acute lobes. — Leaf blades 13.5–30 by 6–17 cm. Solomon Islands
7. A. bracteatum
- b. Leaf blades chartaceous. Calyx margin irregularly truncate, cracked, or with 5 subequal, c. 0.5 mm long, truncate lobes. — Leaf blades 16–22 by 6–10 cm. New Guinea **8. A. brassii**
- 33a. Anthers straight, curved, or J-shaped, apex of spur obliquely flattened to hammer-like 34
- b. Anthers sinuate, apex of spur symmetric **57. A. sinuosum**
- 34a. Anthers straight to slightly curved, linear, locules extending around the distal apex on to the dorsal surface 35
- b. Anthers J-shaped, locules not reaching the dorsal surface
63. A. uncinato-tessellatum
- 35a. Branchlets, petioles, and inflorescences furfuraceous lepidote, scales indistinct (hand-lens 10 ×!), or papillose, or glabrous. Calyx tube campanulate, funnel-form, to cyathiform, 3–4 mm long 36
- b. Branchlets, petioles, inflorescences sparsely appressed lepidote, scales distinct. Calyx tube cyathiform, c. 5.5 mm long **28. A. loloruense**

- 36a. Branchlets terete. Calyx tube campanulate to \pm funnellform, khaki-coloured (i.s.). — Papuan Islands 37
- b. Branches quadrangular to flattened. Calyx tube campanulate to cyathiform, dark brownish (i.s.) — Petioles sometimes with minute ligules. Solomon Islands (Fig. 1) 22. *A. insulare*
- 37a. Branchlets, petioles, inflorescence or infructescence axes, and bracts with thin, spreading scales. Leaf blades beneath scattered papillose on the main nerves
66b. *A. variabile* var. *papillosum*
- b. Branchlets, petioles, inflorescence or infructescence axes, and bracts glabrous to sparsely furfuraceous. Leaf blades beneath at most with a few scales on the main nerves 66a. *A. variabile* var. *variabile*
- 38a. (29). Anther locules extending from the insertion of the filament on the ventral side to the base of the spur on the dorsal side 39
- b. Anther locules extending from or below the insertion of the filament on the ventral surface up to \pm half the length of the dorsal side 41
- 39a. Leaf blades subcoriaceous. Calyx tube before or at anthesis c. 4 mm long. . 40
- b. Leaf blades chartaceous. Calyx tube before or at anthesis up to 2.75 mm long
38. *A. novae-hannoverae*
- 40a. Calyx tube campanulate, margin with very irregular, 0.5–1 mm long, acute lobes. Capsules smooth (i.s.) 18. *A. glabratum*
- b. Calyx tube cyathiform, margin with \pm regular, broadly rounded, c. 0.5 mm long, often cuspidate lobes. Capsules with prominent longitudinal lines and grooves (i.s.) 26. *A. lepido-punctatum*
- 41a. Leaf blades obtuse to acuminate, not rostrate. Placentae basal. — Caroline Islands, Bismarck Arch., Louisiade Arch., Society Islands 42
- b. Leaf blades with a narrow rostrum up to 2 cm long. Placentae inserted near base of the central axis (best seen in capsules). — Vanuatu . . 4. *A. banksianum*
- 42a. Inflorescence axes and calyx \pm glabrous to appressed dark brown lepidote (and then sometimes densely so) 43
- b. Inflorescence axes and calyx densely, pale brown, puberulous lepidote
48. *A. puberulum*
- 43a. Calyx up to 5 mm long 44
- b. Calyx at least 7 mm long 61. *A. sudestense*
- 44a. Leaf blades 1.5–9 by 1–4 cm. — Society Islands 45
- b. Leaf blades 8–22 by 2–8 cm. — Caroline Islands, Admiralty Islands, New Britain 47
- 45a. Branchlets and axes of the inflorescences or infructescences glabrous to sparsely lepidote. Margin of calyx and capsule with broad, 1–2 mm long lobes . . 46
- b. Branchlets and axes of the inflorescences or infructescences densely lepidote. Margin of calyx and capsule truncate or with 0.1–0.2 mm long cusps
51. *A. saccatum*
- 46a. Leaf blades chartaceous, acuminate. Calyx lobes 1.5–2 mm long, rounded. Petioles 11–35 mm long 17. *A. fraternum*
- b. Leaf blades subcoriaceous, apex rounded to bluntly acute. Calyx lobes c. 1 mm high, truncate. — Petioles 10–15 mm long 27. *A. ligulatum*

- 47a. Calyx tube 2–3.5 mm long. — Admiralty Islands, New Britain 48
- b. Calyx tube 3.5–5 mm long. — Caroline Islands 49
- 48a. Leaf blades narrowly oblong to lanceolate, 8–13 by 3–4.5 cm, upper surface with few obscure raphides (i.s.). Calyx tube c. 2 mm long. Anthers c. 1.5 mm long 31. **A. micranthum**
- b. Leaf blades narrowly elliptic to oblong, 9–18 by 4–7 cm, upper surface with numerous distinct raphides (i.s.). Calyx tube c. 3.5 mm long. Anthers c. 2.5 mm long 49. **A. raphidifolium**
- 49a. Leaf blades chartaceous, midrib with a pair of nerves from 1–3 mm above the base. Calyx cupular. Capsules subglobose, smooth 9. **A. carolinense**
- b. Leaf blades subcoriaceous, midrib with a pair of nerves from 5–10 mm above the base. Calyx campanulate. Capsules subglobose urceolate, longitudinally ridged and grooved 41. **A. palauense**
- 50a. (28). Petals connate in the lower one to two thirds. — Leaf blades with two pairs of lateral nerves above the base 51
- b. Petals free 52
- 51a. Petioles 1.5–2.5 cm long, white floccose in the lower 1–2 cm. Leaf blades subcoriaceous, base decurrent along the petiole, midrib with the lower pair of nerves from 8–20 mm above the base, the upper pair from 15–40 mm. Calyx tube and petals each c. 3 mm long . . . 35b. **A. muscosum** var. **decurrens**
- b. Petioles 4–7 cm long, tan-coloured floccose in the lower 1–2 cm. Leaf blades coriaceous, base rounded to acute, midrib with the lower pair of lateral nerves from up to 0.5 mm above the base, and another pair from up to 15 mm. Calyx tube and petals each c. 5 mm long . . . 35a. **A. muscosum** var. **muscosum**
- 52a. Leaves opposite 53
- b. Leaves in whorls of 3 1. **A. aneityense**
- 53a. Flowers (incl. locules of the ovary) 5–9-merous, when 5- or 6- merous calyx tube 8–15 mm long 54
- b. Flowers (incl. locules of the ovary) 4- or 5-merous, rarely 6-merous (*A. mamiforme*, *A. subvaginatum*), when 5- or 6- merous calyx tube up to 8 mm long 63
- 54a. Calyx tube usually glabrous, squamose in *A. sessile*. Anthers J-shaped . . . 55
- b. Calyx tube densely minutely lepidote. Anthers linear . . . 34. **A. morobiense**
- 55a. Anther locules extending along most or all of the ventral surface, i.e. from 0–1 mm below the insertion of the filament to the tip of the hooked part. — New Britain, Solomon Islands, Fiji 56
- b. Anther locules extending from the middle of the ventral surface to the tip of the hooked part. — Samoa 25. **A. lemafaense**
- 56a. Locules extending from c. 1 mm below the insertion of the filament 57
- b. Locules extending from the insertion of the filament 58
- 57a. Inflorescences or infructescences 10–12 cm long. Pedicels up to 1 mm long 14. **A. degeneri**
- b. Inflorescences or infructescences cymose, 6–8 cm long. Pedicels c. 4 mm long 29. **A. macranthum**
- 58a. Midrib of the leaf blades with the main set of lateral nerves from 0.1–2.5 cm above the base. Calyx tube glabrous to sparsely furfuraceous lepidote 59

- b. Midrib of the leaf blades with the main set of lateral nerves from 4.5–6.5 cm above the base. Calyx tube, at least in bud, squamose 55. *A. sessile*
- 59a. Branchlets quadrangular to flattened. Petioles dorsally grooved, not villous 60
- b. Branchlets obscurely quadrangular to terete. Petioles dorsally vaginate, groove villous 64. *A. vaginato-villosum*
- 60a. Inflorescences or infructescences with at least 20 flowers (or capsules). Calyx 6–10 mm long by 6–9 mm diam. Capsules 8–10 mm long by 7–9 mm diam. — New Britain, Solomon Islands, Vanuatu 61
- b. Inflorescences or infructescences with up to 15 flowers (or capsules). Calyx 13–14 mm long by 11–12 mm diam. Capsules c. 14 mm long by 13 mm diam. — Fiji 50. *A. robustum*
- 61a. Branchlets quadrangular, not greatly compressed 62
- b. Branchlets flattened, bisulcate 52. *A. salomonense*
- 62a. Branchlets 5–7 mm diam. Leaf blades subcoriaceous, suborbicular to elliptic, smooth (i.s.). Calyx ellipsoid in bud, margin later with 2 or 3 lobes, 1–3 mm long. — New Britain 24. *A. laeve*
- b. Branchlets 3–4 mm diam. Leaf blades chartaceous, oblong to lanceolate, papillose (i.s.). Calyx globose in bud, margin later irregularly truncate. — Solomon Islands 33. *A. montanum*
- 63a. (53). Petioles dorsally not villous, glabrous or lepidote. Leaf blades usually with distinct secondary venation, slightly less prominent than the three main nerves. Calyx buds either less than 6 mm long, or 7.5–10 mm long 64
- b. Petioles dorsally vaginate, villous. Leaf blades with obscure secondary venation, much thinner than the three main nerves. Calyx buds c. 6 mm long by 5 mm diam. 64. *A. vaginato-villosum*
- 64a. Anther locules extending from below the insertion of the filaments to the distal tip. — Fiji, Samoa 65
- b. Anther locules extending from the insertion of the filaments to the distal tip or beyond 68
- 65a. Calyx tube 2–3.5 mm long. — Fiji 66
- b. Calyx tube 5–7 mm long. — Samoa 53. *A. samoense*
- 66a. Calyx margin irregular. Petals 4. Stamens 8 67
- b. Calyx margin regular, with 5 broadly rounded, c. 1 mm long lobes. Petals 5. Stamens 10 15. *A. floribundum*
- 67a. Midrib of the leaf blade with a pair of nerves from 2–3 mm above the base. Calyx tube c. 2 mm long, lepidote 44. *A. parviflorum*
- b. Midrib of the leaf blade with a pair of nerves from 4–7 mm above the base. Calyx tube 3–3.5 mm long, glabrous 47. *A. pseudoparviflorum*
- 68a. Branchlets and lower surface of the leaf blades brown to blackish (i.s.). — New Guinea 69
- b. Branchlets straw-, tan-coloured, or brown (i.s.). Lower surface of the leaf blades dull pale yellowish green to pale brown. — Solomon Islands, Fiji . . 73
- 69a. Margin of the calyx with irregular lobes and cracks up to 6 mm long. Locules of the anthers only on the ventral surface 70
- b. Margin of the calyx \pm truncate, without prominent cracks or lobes. Locules of the anthers extending shortly along the dorsal surface 71

- 70a. Branchlets without callose patches at the base of the petiole. Petioles 1.5–2.5 cm long, without a ligule at base. Axes densely brown furfuraceous. Buds constricted about the middle, c. 4 mm long, margin with 4 or 5 irregular, rounded lobes and cracks up to 1 mm long 13. *A. cuneatum*
- b. Branchlets with callose patches on each side of the base of the petiole. Petioles 3–4.5 cm long, with a small ligule at base. Axes glabrous. Buds obovate, hardly constricted, glabrous, margin at anthesis splitting irregularly into 3 lobes of c. 6 mm long 60. *A. subvaginatum*
- 71a. Calyx tube constricted, base often swollen 72
- b. Calyx tube not constricted nor swollen 16. *A. fragilissimum*
- 72a. Calyx tube c. 3.5 mm long. Petals c. 3.5 by 2 mm. Capsules c. 5 mm long by 5 mm diam. 12. *A. constrictum*
- b. Calyx tube c. 5.5 mm long. Petals c. 4.5 by 3 mm. Capsules c. 6.5 mm long by 6.5 mm diam. — Petioles at base with small ligules
39. *A. novoguineense*
- 73a. Leaf blades not minutely papillose (i.s.) (handlens 10×!). Anthers linear, apex not hooked. — Solomon Islands 74
- b. Leaf blades minutely papillose (i.s.). Anthers J-shaped, apex with a distinct hook. — Fiji 67. *A. victoriae*
- 74a. Branchlets 4–5 mm diam. Petioles and leaf blades dull olive green above, pale greenish underneath (i.s.) 75
- b. Branchlets 8–9 mm diam. Petioles and leaf blades greenish brown above, pale brown underneath (i.s.) 65. *A. vanikoroense*
- 75a. Calyx buds ovate mammiform 30. *A. mammiforme*
- b. Calyx buds globose 43. *A. pallidum*

SURVEY OF THE TAXA

1. *Astronidium aneityense* (Guill.) A.C. Smith

Astronidium aneityense (Guill.) A.C. Smith, *Sargentia* 1 (1942) 88. — *Astronia aneityensis* Guill., *J. Arn. Arbor.* 12 (1931) 261. — **L e c t o t y p e**: *Wilson 975* (A, holo; US) (appointed here), Vanuatu, Aneityum, Anelgauhat Bay, 35–175 m, September 1929.

D i s t r i b u t i o n. Vanuatu (Aneityum).

H a b i t a t. Rain forests; 30–500 m.

2. *Astronidium angulosum* Maxw., *spec. nov.*

Arbor ad 10 m alta. Ramuli acute quadrangulares interdum fere alati demum ± tereti glabrique 3–4 mm diam. Petioli 12–30 mm longi glabri. Laminae subcoriaceae late ellipticae ad oblongae 5,5–10 cm longae 2,5–4,5 cm latae, basi cuneato, apice acuto, costa basin uno pare nervorum, pare inframarginali tenuiore, supra glabrae, infra sparse minuteque punctato-lepidotae. Inflorescentiae floresque non vidi. Infructescentiae paniculato-corymbosae capsulis multis 6–7 cm longae, axibus acute quadrangularibus ad applanatis glabris, pedicellis 3–4 mm longis. Capsulae 5- vel 6-loculares subgloboso-urceolatae c. 5 mm longae 6,5 mm diam. glabrae, margine lobis 4–6 irregularibus in-

flexis c. 1 mm longis, apice fructus c. 2 mm infra marginem. Semina cuneata 1–1.25 mm longa, apice oblique truncato. — T y p u s: *A.C. Smith 5186* (A, holo; US), Fiji, Viti Levu Island, Mba (Tholo North), summit of Mt Thomanivi (Mt Victoria), dense mossy forest, 1325 m alt.

Tree, up to 10 m high. Branchlets sharply quadrangular, sometimes almost winged, finally ± terete and glabrous, 3–4 mm diam. Petioles 1.2–3 cm long, glabrous. *Blades* subcoriaceous, broadly elliptic to oblong, 5.5–10 by 2.5–4.5 cm, base cuneate, apex acute, midrib with one pair of nerves at base, inframarginal pair much thinner, upper surface glabrous, lower surface sparsely minutely punctate lepidote. *Inflorescences* and *flowers* not seen. *Infructescences* paniculate-corymbose, with many capsules, 6–7 cm long, axes acutely quadrangular to compressed, glabrous, pedicels 3–4 mm long. Capsules 5- or 6-locular, subglobose-urceolate, c. 5 mm long by 6.5 mm diam., glabrous, margin with 4–6 irregular, inflexed c. 1 mm long lobes; top of fruit c. 2 mm below the margin. Seeds cuneate, 1–1.25 mm long, apex obliquely truncate.

Distribution. Fiji (Viti Levu I.).

Habitat. Dense mossy summit forest; 1325 m.

3. *Astronidium anomalum* Merr. & Perry

Astronidium anomalum Merr. & Perry, *J. Arn. Arbor.* 24 (1943) 438. — T y p e: *Kajewski 2623* (A, holo), Solomon Islands, Guadalcanal, Uulolo, Tutuve Mt, 1500 m, May 1931.

Distribution. Solomon Islands (Guadalcanal).

Habitat. Montane rain forests; 1330–1500 m.

4. *Astronidium banksianum* (Guill.) A.C. Smith

Astronidium banksianum (Guill.) A.C. Smith, *Sargentia* 1 (1942) 88. — *Astronia banksiana* Guill., *J. Arn. Arbor.* 12 (1931) 261. — T y p e: *Kajewski 473* (A, holo), Vanuatu, Vanua Lava, 200 m, 12 July 1928.

Distribution. Vanuatu (Vanua Lava).

Habitat. Rain forests; c. 200 m.

5. *Astronidium basinervatum* Maxw., *spec. nov.*

Arbor ad c. 8 m alta, caule c. 6 cm diam. Ramuli paulo quadrangulares prope nodos superiores demum cylindrici 3–4 mm diam. minute persistentiter appresse atrobrunnee dense lepidoti. Petioli 12–19 mm longi pubescentes ut in ramulis. Laminae coriaceae late oblongae 5.5–7.5 cm longae 2–3 cm latae, basi cuneato, margine non revoluto, apice rostrato marginibus revolutis, costa basi uno pare nervorum, pare inframarginali obscurissima, supra glabrae, infra sparse lepidoto-punctatae. Inflorescentiae floresque non vidi. Infructescenciae corymbosae c. 5 cm longae, axibus quadranguloribus pubescentibus ut in ramulis. Capsulae subglobosae c. 5 mm longae c. 4 mm diam. pubescentes ut in ramulis, margine lobis 4 vel 5 c. 1 mm longis rotundatis mucronatis, loculis 4. Semina cuneata 1–1.25 mm longa, apice truncato. — T y p u s: *NGF 26887 (Frodin)* (L, holo; BRI, CANB, LAE), Papua New Guinea, W New Britain Prov., Talasea I., Mt Tangis, ridge below rim of crater, in cloud forest dominated by *Podocarpus* and *Dacrydium elatum*, c. 1500 m alt., 30 May 1966.

Tree, up to c. 8 m high, bole c. 6 cm diam. Branchlets slightly quadrangular near the upper nodes, later cylindrical, 3–4 mm diam., densely, minutely, persistently, ap-

pressedly, dark brown lepidote. Petioles 12–19 mm long, pubescent as the branchlets. *Blades* coriaceous, broadly oblong, 5.5–7.5 by 2–3 cm, base cuneate, apex rostrate, margins revolute, midrib with one pair of nerves at base, inframarginal pair very obscure, upper surface glabrous, lower surface sparsely lepidote punctate. *Inflorescences* and *flowers* not seen. *Infructescences* corymbose, c. 5 cm long, axes quadrangular, pubescent as the branchlets. Capsules subglobose, c. 5 mm long by 4 mm diam., pubescent as the branchlets, margin with 4 or 5 c. 1 mm long, rounded, mucronate lobes, locules 4. Seeds cuneate, 1–1.25 mm long, apex truncate.

Distribution. Papua New Guinea, W New Britain Prov.

Habitat. *Podocarpus* and *Dacrydium elatum* dominated cloud forest; c. 1500 m.

6. *Astronidium biakense* Maxw., *spec. nov.*

Arbor ad 14 m alta, caule 6–9 m longo 35–58 cm diam. Ramuli paulo complanati ad tereti 7–9 mm diam. dense brunnee patentiter tenuiter minute villose furfuraceae lepidoti glabrescentes. Petioli tereti 4,5–6,5 cm longi 2,5–3,5 mm diam. pubescentes ut in ramulis glabrescentes. Laminae subcoriaceae ellipticae 15,5–24,5 cm longae 10,5–14 cm latae, basi cuneato saepe minute cordato, apice acuto, costa uno pare nervorum ad 5 mm supra basin orienti, pare inframarginali tenuiore, supra demum plerumque glabrae, infra nervis principalibus pubescentibus ut in ramuli. Inflorescentiae floresque non vidi. Infructescenciae capsulis multis paniculatae 22–24 cm longae, axibus compressis dense minuteve furfuraceis, inferioribus minus, pedicellis 4–5 mm longis. Capsulae subgloboosae urceolatae c. 5 mm longae c. 6 mm diam. sparse pubescentes ut in pedicellis, collo c. 1,5 mm lato, margine truncato callis inconspicuis 5, apice fructus c. 2 mm infra marginem, loculis 4. Semina cuneata 0,75–1 mm longa, apice oblique truncato. — *T y p u s*: *BW 9587* (Moll) (L, holo; LAE, MAN), Irian Jaya, Geelvink Bay Prov., Biak I., near Mansforbo, primary forest, rocky soil, c. 35 m alt., 16 November 1959.

Tree, up to 14 m high, bole 6–9 m long, 35–58 cm diam. Branchlets slightly flattened to terete, 7–9 mm diam., densely brown, spreading, thin, minutely, villosly furfuraceous lepidote, glabrescent. Petioles terete, 4.5–6.5 cm long by 2.5–3.5 mm diam., pubescent as the branchlets, glabrescent. *Blades* subcoriaceous, elliptic, 15.5–24.5 by 10.5–14 cm, base cuneate, often slightly cordate, apex acute, midrib with one pair of nerves up to 5 mm above the base, inframarginal pair thinner, upper surface finally usually glabrous, main nerves of the lower surface pubescent as the branchlets. *Inflorescences* and *flowers* not seen. *Infructescences* with many capsules, paniculate, 22–24 cm long, axes compressed, densely minutely furfuraceous, less so on the lower axes, pedicels 4–5 mm long. Capsules subglobose, urceolate, c. 5 mm long by 6 mm diam., sparsely pubescent as the pedicels, neck c. 1.5 mm high, margin truncate with 5 inconspicuous thickenings, top of fruit c. 2 mm below the margin; locules 4. Seeds cuneate, 0.75–1 mm long, apex obliquely truncate.

Distribution. New Guinea, Irian Jaya: Geelvink Bay Prov.

Habitat. Primary forest, rocky or clay soil; c. 35 m.

7. *Astronidium bracteatum* Maxw., *spec. nov.*

Arbor 4–14 m alta, caule ad 60 cm diam. Ramuli obscure quadrangulares ad tereti 6–10 mm diam. sparse minute furfuraceae lepidoti. Nodi cristis prominentibus plerumque dense floccosi setosi

setis ad 2,5 mm longis. Petioli 2–7 cm longi parte inferiore 1–2 cm longa pubescenti ut in ramulis cetera sparse lepidoti. Laminae subcoriaceae ellipticae ad ob-longae 13,5–30 cm longae 6–17 cm latae, basi acuto ad rotundato, apice acuto ad acuminato, costa 1 vel 2 paribus nervorum usque ad 10 mm supra basin orientibus, pare inframarginali tenuiore, supra disperse lepidotae glabrescentes, infra persistentioriter pubescentes praecipue in nervis principalibus. Inflorescentiae cymose paniculatae 6–12 cm longae, axibus quadrangularibus ad complanatis pubescentes ut in ramulis, nodis inferioribus saepe setosis. Bracteae tenues ante anthesis caducae concavae curvatae galeataeque suborbiculares ad ellipticae 5–7 mm longae 3–8 mm latae tenues minute lepidotae. Pedicelli 1–1,5 mm longi. Flores 4–6-meri, alabastra tantum. Calyx sparse lepidotus, tubo cyathiformi c. 4 mm longo, margine irregulari lobis 5 vel 6 subaequalibus triangularibus c. 1 mm longis acutis. Petala in parte inferiore 2/3 coherentia 2,5–3 mm longa. Stamina 8–12, antheribus curvatis c. 3 mm longis, loculis tessellatis pagina ventrali et dorsali per c. 1 mm tectis. Ovarium 3–5-loculare. Capsulae urceolatae c. 5 mm longae c. 5 mm diam. sparse furfuraceae, collo distincto lobis prominentibus inaequalibusque, areola circulari. Semina lineare cuneata 0,75–1 mm longa apice \pm truncato. — **T y p u s:** *BSIP 2121 (Whitmore)* (SING, holo; HON, L), Solomon Islands, Kolombangara I., W coast, inland from Iri Iri (Merusu Cove), forested ridges, c. 790 m alt., 28 September 1963.

Tree, 4–14 m high, bole up to 60 cm diam. Branchlets obscurely quadrangular to terete, 6–10 mm diam., sparsely, minutely furfuraceous lepidote. Nodes with prominent ridges, usually densely floccose-setose with bristles up to 2.5 mm long. Petioles 2–7 cm long, lower 1–2 cm usually pubescent as the branchlets, otherwise sparsely lepidote. *Blades* subcoriaceous, elliptic to oblong, 13.5–30 by 6–17 cm, base acute to rounded, apex acute to acuminate, midrib with 1 or 2 pairs of nerves from up to 10 mm above the base, inframarginal pair thinner, upper surface scattered lepidote, glabrescent, lower surface more persistently pubescent, especially on the main nerves. *Inflorescences* cymosely paniculate, 6–12 cm long, axes quadrangular to flattened, pubescent as the branchlets, lower nodes often setose. Bracts thin, caducous before anthesis, concave, curved and galeate, suborbicular to elliptic, 5–7 by 3–8 mm, thin, minutely lepidote. Pedicels 1–1.5 mm long. *Flowers* 4–6-merous. Calyx sparsely lepidote, tube cyathiform, c. 4 mm long, margin irregular, with 5 or 6 subequal, triangular, c. 1 mm long, acute lobes. Petals coherent in the lower 2/3, 2.5–3 mm long. *Stamens* 8–12, anthers curved, c. 3 mm long, locules tessellate, covering the ventral surface and c. 1 mm along the dorsal one. *Ovary* 3–5-locular. Capsules urceolate, c. 5 mm long by 5 mm diam., sparsely furfuraceous, neck distinct with prominent and unequal lobes, areole circular. Seeds linear-cuneate, 0.75–1 mm long, apex \pm truncate.

Distribution. Solomon Islands (Guadalcanal, Kolombangara, Santa Isabel).

Habitat. Stream areas, forested ridges, and in well-drained primary and secondary forest; 50–870 m.

8. *Astronidium brassii* Markgraf

Astronidium brassii Markgraf, Brittonia 2 (1936) 143. — **T y p e:** *Brass 3889* (NY, holo), Papua New Guinea, Central Prov., Dieni, Ononge Road, 500 m, April–May 1933.

Distribution. Papua New Guinea: Central Prov.

Habitat. Stream bed in rain forest; c. 500 m.

9. *Astronidium carolinense* (Kaneh.) Markgraf

Astronidium carolinense (Kaneh.) Markgraf, Not. Bot. Gart. Mus. Berlin-Dahlem 12 (1934) 49. — *Astronia carolinensis* Kaneh., Bot. Mag., Tokyo 46 (1932) 488. — L e c t o t y p e: *Kanehira 1287* (FU, holo, n.v.; A, US) (here appointed), Caroline Islands, Truk, Mt Tol, 450 m, June 1931.

Astronidium kusaianum Hosokawa, J. Jap. Bot. 13 (1937) 614. — T y p e: *Hosokawa 6294* (FU, holo, n.v.), Caroline Islands, Kusaie, near summit of Mt Buache, 29 July 1933.

Distribution. Caroline Islands (Kusaie, Truk).

Habitat. Mountain forest; c. 450 m.

Note. *Kanehira 1380* (seen in US) is a syntype of *Astronidium carolinense* and a paratype of *A. kusaianum*.

10. *Astronidium circumscissum* Maxw., *spec. nov.*

Arbor 5–7 m alta. Ramuli tereti 5–6 mm diam. leprose lepidoti parte inferiore internodorum adpresse setosa. Petioli 1.5–4.5 mm longi sparse lepidoti ad glabri adaxialiter setosi, adaxialiter ligula auriculiformi ad 1 cm longa 0.5 cm lata. Laminae subcoriaceae ellipticae 12–20 cm longae 8–10 cm latae, basi acuto ad rotundato, apice obtuse acuto saepe mucronato, costa 1 vel 2 paribus nervorum superioribus 4–15 mm inferioribus (ubi adsunt) ad 5 mm supra basin orientibus, pare inframarginali tenuiore, supra glabrae, infra nervis principalibus sparse lepidotis ceterum glabrae. Inflorescentiae corymbosae pauciflorae 9–15 cm longae, axibus obtuse quadrangularibus ad teretis dense lepidotis, inferioribus evanescentiter setose floccosis. Flores 6- vel 7-meri, alabastra matura tantum vidi. Alabastra mammiformibus 7–7.5 mm longa 5.5–7 mm diam. parte inferiore 2/3 incrassata dense furfuracea ad setosa, parte superiore 1/3 angustiore minus pubescenti, apice rotundato irregulariter rumpenti deciduo, tubo calycis tum 4.5–5 mm longo. Petala 6 vel 7 libera obovata c. 6 mm longa c. 4 mm lata. Stamina subaequalia 12 vel 14, antheribus linearibus c. 3.5 mm longis, loculis laevibus a insertione filamentum ad circum apicem et breviter secus paginam dorsalem extensis, oppositipetalibus paulo extensioribus, calcari c. 0.75 mm longo. Ovarium 6- vel 7-loculare. Capsulae seminaeque non vidi. — T y p u s: *Hoogland & Craven 10835* (US, holo; A, BO, BRI, CANB (also flowers in FAA), K, L, LAE, NSW, US), Papua New Guinea, E Sepik Prov., Eastern ridge of Mt Sumset (Hunstein), lower montane rain forest, c. 1190 m alt., 8 August 1966.

Tree, 5–7 m high. Branchlets terete, 5–6 mm diam., leprose lepidote, lower part of internodes appressedly setose. Petioles 1.5–4.5 cm long, sparsely lepidote to glabrous, adaxially setose, adaxially with an auricular ligule up to 1 by 0.5 cm. *Blades* subcoriaceous, elliptic, 12–20 by 8–10 cm, base acute to rounded, apex bluntly acute, often mucronate, midrib with one or two pairs of nerves, the upper pair from 4–15 mm above the base, the lower pair (when present) from up to 5 mm above it, inframarginal pair thinner, upper surface glabrous, lower surface sparsely lepidote on the main nerves, otherwise glabrous. *Inflorescences* corymbose, few-flowered, 9–15 cm long, axes bluntly quadrangular to terete, densely lepidote, lower ones evanescently setose floccose. *Flowers* 6- or 7-merous, mature buds seen only. Buds mammiform, 7–7.5 mm long by 5.5–7 mm diam., lower 2/3 thickened, densely furfuraceous to setose, upper 1/3 thinner, less pubescent, apex rounded, bursting irregularly, deciduous, calyx tube then 4.5–5 mm long. Petals 6 or 7, free, obovate, c. 6 by 4 mm. *Stamens* subequal, 12 or 14, anthers linear, c. 3.5 mm long, locules smooth, extending from the insertion of the filament to around the tip and

shortly along the dorsal surface, the oppositipetalous ones slightly more extensive, spur c. 0.75 mm long. *Ovary* 6- or 7-locular. Capsules and seeds not seen.

Distribution. Papua New Guinea: E Sepik, Western Highlands Prov.

Habitat. Primary rain forests; 125–1200 m.

Note. The species is conspicuous for the presence of a ligule at the base of the petiole.

11. *Astronidium confertiflorum* (A. Gray) Markgraf

Astronidium confertiflorum (A. Gray) Markgraf, Not. Bot. Gart. Mus. Berlin-Dahlem 12 (1934) 49.
— *Astronia confertiflora* A. Gray in Wilkes, U.S. Expl. Exped., Bot. Phan. (1854) 579. —
Pharmacum confertiflorum O. Ktze, Rev. Gen. Pl. 3 (1898) 954. — *Type*: *Pickering s.n.*
(US, holo; GH), Fiji, Vanua Levu, Sandalwood Dist., Mbua Bay region.

Distribution. Fiji (Ngau, Savaii, Tavunui, Vanua Levu).

Habitat. Primary rain forests; 125–1200 m.

12. *Astronidium constrictum* Maxw., *spec. nov.*

Arbuscula aut arbor 5–33 m alta. Ramuli acre quadrangulares demum saepe tereti 3–6 mm diam. dense brunnee furfuracei squamulis evanescentibus. Petioli 1,5–2,5 cm longi pubescentia ut in ramulis. Laminae subcoriaceae ellipticae vel oblongae obovatae 7,5–16 cm longae 4,25–8 cm latae, basi cuneato decurrenti, apice acuminato saepe acute marginibus involutis, costa uno pare nervorum 5–10 mm supra basin orienti, pare inframarginali tenuiore 2–4 mm supra basin orienti venatione distincta, supra glabrae, infra sparse furfuraceae. Inflorescentiae paniculate corymbosae 4–7 cm longae, axibus acre quadrangularibus ad complanatis moderate ad dense furfuraceis. Flores 5-meri. Calycis tubus cyathiformis supra medio constrictus c. 3,5 mm longus appresse brunnee furfuracee lepidotus, margine truncato ut videtur lobis obscurissimis latis. Petala 5 libera elliptica c. 3,5 mm longa c. 2 mm lata. Stamina 10 subaequalia, antheribus linearis 2,25–2,5 mm longis, loculis laevibus pagina ventrali tote pagina dorsali breviter tecta, calcaris c. 0,5 mm longo, apice oblique complanato. Stylus c. 4 mm longus. Ovarium 4- vel 5-loculare. Capsulae subglobose urceolatae c. 5 mm diam., collo c. 2 mm longo, areola circulari. Semina lineare cuneata 1–1,25 mm longa. — *Type*: Carr 14195 (SING, holo; A), Papua New Guinea, Central Prov., Owen Stanley Range, Alola, forest, c. 2000 m alt.

Treelet or tree, 5–33 m high. Branchlets sharply quadrangular, often becoming terete, 3–6 mm diam., densely brown furfuraceous with small evanescent scales. Petioles 1.5–2.5 cm long, pubescence as of the branchlets. *Blades* subcoriaceous, elliptic, oblong, or obovate, 7.5–16 by 4.25–8 cm, base cuneate, slightly decurrent, apex acuminate, often sharply so, with involute margins, midrib with one pair of nerves from 5–10 mm above the base, inframarginal pair thinner, from 2–4 mm above the base, venation distinct, upper surface glabrous, lower surface sparsely furfuraceous. *Inflorescences* paniculately corymbose, 4–7 cm long, axes sharply quadrangular to flattened, moderately to densely furfuraceous. *Flowers* 5-merous. Calyx tube in anthesis cyathiform, constricted above the middle, c. 3.5 mm long, appressed brown furfuraceous lepidote, margin apparently truncate, with very obscure, broad lobes. Petals 5, free, elliptic, c. 3.5 by 2 mm. *Stamens* 10, subequal; anthers linear, 2.25–2.5 mm long, locules smooth, all along the ventral surface and shortly

along the dorsal side, spur c. 0.5 mm long, apex obliquely flattened. Style c. 4 mm long. *Ovary* 4- or 5-locular. Capsules subglobose urceolate, c. 5 by 5 mm, neck c. 2 mm long, areole circular. Seeds linear-cuneate, 1–1.25 mm long.

Distribution. New Guinea, Irian Jaya: Jayapura Prov.; Papua New Guinea: Central, Milne Bay Prov.

Habitat. Rain forests, often mossy areas; 1220–2000 m.

13. *Astronidium cuneatum* Maxw., *spec. nov.*

Frutex aut arbor 4–7 m alta. Ramuli obscure ad distincte quadrangulares demum tereti c. 4,5 mm diam. dense brunnee furfuracei glabrescentes. Petioli 15–25 mm longi sparse lepidoti. Laminae subcoriaceae ellipticae ad late oblongae 11,5–17 cm longae 6–8,5 cm latae, basi cuneato paulo decurrenti, apice acuminato, costa uno pare nervorum 15–25 mm supra basin orienti, pare inframarginali tenuiore 4–7 mm supra basin orienti, supra glabrae, infra moderate ad sparse brunnee furfuraceae. Inflorescentiae corymbose paniculatae 9–10 cm longae, axibus quadrangularibus ad complanatis dense brunnee furfuraceis. Flores 5-meri. Alabastra clavata circa medio constricta c. 4 mm longa dense lepidota tumida in parte inferiore tertia, sub anthesi margine lobis 4 vel 5 irregularissimis rotundatis rimisque ad c. 1 mm longis. Petala 5 libera elliptica c. 4 mm longa c. 2,5 mm lata. Stamina aequalia 10; antheribus immaturis linearibus maturis C-formibus c. 2,5 mm longis, loculis laevibus latus ventrale tote tectis, calcari c. 0,75 mm longo. Stylus c. 4 mm longus. Ovarium 5-loculare. Capsulae seminaque non vidi. — *T y p u s:* *Fisher 75* (L, holo; A, CANB, LAE), Papua New Guinea, Milne Bay Prov., between Agaun and Bonenau, primary montane rain forest, 1500 m alt., 7 August 1969.

Shrub or tree, 4–7 m high. Branchlets obscurely to distinctly quadrangular becoming terete, c. 4.5 mm diam., densely brown furfuraceous, glabrescent. Petioles 15–25 mm long, sparsely lepidote. *Blades* subcoriaceous, elliptic to broadly oblong, 11.5–17 by 6–8.5 cm, base cuneate, slightly decurrent, apex acuminate, midrib with one pair of nerves 15–25 mm above the base, inframarginal pair thinner, 4–7 mm above the base, upper surface glabrous, lower surface moderately to sparsely brown furfuraceous. *Inflorescences* corymbosely paniculate, 9–10 cm long; axes quadrangular to flattened, densely brown furfuraceous. *Flowers* 5-merous. Buds clavate, constricted about the middle, c. 4 mm long, densely lepidote, swollen in the lower third, at anthesis the margin with 4 or 5 very irregular rounded lobes and cracks up to c. 1 mm long. Petals 5, free, elliptic, c. 4 by 2.5 mm. *Stamens* equal, 10; immature anthers linear, at maturity C-shaped, c. 2.5 mm long; locules smooth, covering the entire ventral surface; spur c. 0.75 mm long. Style c. 4 mm long. *Ovary* 5-locular. Capsules and seeds not seen.

Distribution. Papua New Guinea: Morobe, Milne Bay Prov.

Habitat. Primary montane rain forest; 1500 m alt.

14. *Astronidium degeneri* A.C. Smith

Astronidium degeneri A.C. Smith, *Sargentia* 1 (1942) 93. — *T y p e:* *Degener 15279* (A, holo), Fiji, Viti Levu, Tholo West, Yawe, vicinity of Mbalo, near Vatukarasa, 300 m alt., 15 May 1941.

Distribution. Fiji (Viti Levu).

Habitat. Primary rain forest; 300–600 m.

15. *Astronidium floribundum* (Gillespie) A.C. Smith

Astronidium floribundum (Gillespie) A.C. Smith, *Sargentia* 1 (1942) 90. — *Astronia floribunda* Gillespie, *Bish. Mus. Bull.* 83 (1931) 24, t. 30. — T y p e: *Gillespie 2246* (BISH, holo; GH, UC), Fiji, Viti Levu, Naitasiri, SE slopes of Korombamba Mt, 400 m, 15 August 1927.

D i s t r i b u t i o n. Fiji (Viti Levu).

H a b i t a t. Mountain forest, volcanic soil; c. 400 m.

16. *Astronidium fragilissimum* Maxw., *spec. nov.*

Arbor ad 20 m alta. Ramuli acute quadrangulares demum tereti 4–5 mm diam. sparse minuteque lepidoti glabrescentes ad glabri nigri (i.s.). Petioli 9–17 mm longi demum glabri. Laminae subcoriaceae oblongae 5.5–13 cm longae 2–6 cm latae glabrae atrobrunneae fragilissimaeque (i.s.), basi cuneato paulo decurrenti, apice acuto, costa uno pare nervorum 8–12 mm supra basin orienti, pare inframarginali tenuiore 1–2 mm supra basin orienti. Inflorescentiae corymbose paniculatae pauciflorae 4–5 cm longae, axibus acute quadrangularibus ad complanatis demum glabris. Flores 5-meri. Calyx sparse lepidotus, tubo cyathiformi c. 5 mm longo c. 5 mm diam. incrassato, margine irregulariter truncato. Petala 5 libera c. 5 mm longa c. 4 mm lata (immatura), alba. Stamina subaequalia 10, antheribus J-formibus c. 4 mm longis, loculis laevibus latus ventrale tote tectis, calcari c. 1.25 mm longo. Ovarium 5-loculare. Capsulae seminaeque non vidi. — T y p u s: *Carr 15186* (SING, holo; A, BM, L, SING), Papua New Guinea, Central Prov., Owen Stanley Range, Uniri River, forest, c. 2200 m alt., 18 January 1936.

Tree, up to 20 m high. Branchlets sharply quadrangular, becoming terete, 4–5 mm diam., sparsely, minutely lepidote, glabrescent to glabrous, black (i.s.). Petioles 9–17 mm long, finally glabrous. *Blades* subcoriaceous, oblong, 5.5–13 by 2–6 cm, glabrous, blackish brown and very brittle (i.s.), base cuneate, slightly decurrent, apex acute, midrib with one pair of nerves from 8–12 mm above the base, inframarginal pair thinner, from 1–2 mm above the base. *Inflorescences* corymbosely paniculate, few-flowered, 4–5 cm long; axes sharply quadrangular to flattened, finally glabrous. *Flowers* 5-merous. Calyx sparsely lepidote, tube cyathiform, c. 5 mm long by 5 mm diam., thickened; margin irregularly truncate. Petals 5, free, c. 5 by 4 mm (immature), white. *Stamens* 10, subequal; anthers J-shaped, c. 4 mm long; locules smooth, along the entire ventral surface; spur c. 1.25 mm long. *Ovary* 5-locular. Capsules and seeds not seen.

D i s t r i b u t i o n. Papua New Guinea: Central Prov.

H a b i t a t. Montane forest; c. 2200 m.

17. *Astronidium fraternum* (A. Gray) Maxw.

Astronidium fraternum (A. Gray) Maxw., *comb. nov.* — *Astronia fraterna* A. Gray in Wilkes, U.S. Expl. Exped., *Bot. Phan.* (1854) 576, t. 72A. — *Naudiniella fraterna* Krasser in E. & P., *Nat. Pfl. Fam.* III, 7 (1893) 195. — *Pharmacum fraternum* O. Ktze, *Rev. Gen. Pl.* 3 (1898) 954. — **L e c t o t y p e:** *U.S. Explor. Exp. s.n.* (Pickering) (US, holo; A) (here appointed), Tahiti. *Astronia pileolata* Triana, *Trans. Linn. Soc., London* 28 (1871) 152. — *Pharmacum pileolatum* O. Ktze, *Rev. Gen. Pl.* 3 (1898) 954. — **L e c t o t y p e:** *Vesco s.n.* (P, holo; L), Tahiti, 1847.

D i s t r i b u t i o n. Society Islands (Moorea, Raiatea, Tahiti).

H a b i t a t. Mountain ridges; 300–800 m.

18. *Astronidium glabratum* Maxw., *spec. nov.*

Frutex ad 4 m altus vel arbor 8–13 m alta, caule ad 18 cm diam. Ramuli obscure quadrangulares demum tereti 4–6 mm diam. plerumque glabrescentesque. Petioli 1.5–2 cm longi glabri. Laminae subcoriaceae 10–17 cm longae 4.5–6.5 cm latae, basi rotundato et paulo decurrenti ad angustato cuneatoque, apice breve acuminato, costa uno pare nervorum 4–10 mm supra basin orienti, pare infra-marginali multo tenuiore, supra glabri, infra glabri vel squamulis dispersis. Inflorescentiae corymbosae c. 9 cm longae, axibus obscure quadrangularibus ad complanatis plerumque glabris. Flores 5-meri. Alabastra matura tantum vidi sparse lepidota glabrescentia, tubo campanulato c. 4 mm longo, margine lobis irregularibus 0.5–1 mm longis acutis. Petala libera. Stamina aequalia, antheribus c. 3.25 mm longis, loculis tessellatis ventraliter a insertione filamenti dorsaliter ad basin calcaris extensis. Ovarium 5-loculare. Capsulae subglobosae c. 4 mm longae c. 6 mm diam. laeves, areola circulari. Semina cuneata 1–1.25 mm longa truncata. — T y p u s: *NGF 10079 (White)* (SING, holo; L, LAE), Papua New Guinea, W New Britain Prov., Southern part of New Britain, Pulie River, c. 15 m alt., 13 May 1958.

Shrub up to 4 m high, or a tree, 8–13 m tall, bole up to 18 cm diam. Branchlets obscurely quadrangular, becoming terete, 4–6 mm diam., usually glabrescent. Petioles 1.5–2 cm long, glabrous. *Blades* subcoriaceous, 10–17 by 4.5–6.5 cm, base rounded and slightly decurrent to narrowed and cuneate, apex shortly acuminate, midrib with one pair of nerves from 4–10 mm above the base, inframarginal pair much thinner, upper surface glabrous, lower surface glabrous or with scattered scales. *Inflorescences* corymbose, c. 9 cm long, axes obscurely quadrangular to flattened, usually glabrous. *Flowers* 5-merous. Mature buds seen only, sparsely lepidote, glabrescent, tube campanulate, c. 4 mm long, margin with 5 irregular, 0.5–1 mm long, acute lobes. Petals free. *Stamens* equal, anthers c. 3.25 mm long, locules tessellate, ventrally extending from the insertion of the filament to dorsally to the base of the spur. *Ovary* 5-locular. Capsules subglobose, c. 4 mm long by 6 mm diam., smooth, areole circular. Seeds cuneate, 1–1.25 mm long, truncate.

Distribution. Papua New Guinea: Manus, W New Britain, New Ireland Prov.

Habitat. Primary rain forests; 0–165 m.

19. *Astronidium glabrum* (G. Forst.) Markgraf

Astronidium glabrum (G. Forst.) Markgraf, Not. Bot. Gart. Mus. Berlin-Dahlem 12 (1934) 50. — *Melastoma glabra* G. Forst., Prodr. (1786) 34. — *Conostegia glabra* D. Don [Mem. Wern. Soc. 4 (1823) 31, comb. not made!] ex DC., Prodr. 3 (1828) 176. — *Lomanodia glabra* Raf., Sylv. Tel. (1838) 97. — *Astronia forsteri* Naud., Ann. Sc. Nat. III, 18 (1852) 258 ('forsterii'), nom. superfl. — *Naudinia glabra* Decne. ex Seem., Fl. Vit. (1866) 86. — *Astronia glabra* Triana, Trans. Linn. Soc., London 28 (1871) 152. — *Pharmacum glabrum* O. Ktze, Rev. Gen. Pl. 1 (1891) 248. — *Naudiniella glabra* Krasser in E. & P., Nat. Pfl. Fam. III, 7 (1893) 195. — T y p e: *Forster s.n.* (P, iso), Tahiti. (According to Seemann, 1866, the 6 sheets in BM and the 2 unpublished plates are *Astronia fraterna*.)

Distribution. Society Islands (Raiatea, Tahiti).

Habitat. Montane scrub forest; 250–1000 m.

Note. There is some confusion with the Forster material. Two species appear to have been mixed up under his *Melastoma glabra*. One is the present one, the other is *Astronia fraterna* (e.g. the 6 sheets and 2 unpublished plates in BM, fide

Seemann, 1866; Triana, 1871), hence in some literature reference is made to a β form of *Astronia glabra*. As can be gleaned from Seemann's remarks and the references Triana gave under *A. glabra* and *A. pileolata* the latter was well aware of the situation. The citation of *Naudinia glabra* (the Forsterian taxon) as a synonym of *Astronia pileolata* may therefore be regarded as a bibliographic error by Triana and omitted. If one does not agree with this, *A. pileolata* is to be considered as based on *Melastoma glabra* and then a homotypic and superfluous synonym of that combination. — JFV.

20. *Astronidium inflatum* (A. C. Smith) A. C. Smith

Astronidium inflatum (A. C. Smith) A. C. Smith, *Sargentia* 1 (1942) 92. — *Astronia inflata* A. C. Smith, *Bish. Mus. Bull.* 141 (1936) 114, t. 60. — *T y p e*: A. C. Smith 1875 (BISH, holo; GH, NY, UC, US), Fiji, Vanua Levu, Thakaundrove, E buttress of Mt Ndikeva, 800 m, 5 June 1934.

D i s t r i b u t i o n. Fiji (Vanua Levu).

H a b i t a t. Dense primary forest or dense thickets and scrub on mountain summits; 700–1030 m.

21. *Astronidium infundibulare* Maxw., *spec. nov.*

Arbor (probabiliter) partibus omnibus fuscis ad nigris (i. s.). Ramuli obscure quadrangulares demum tereti c. 4 mm diam. initio dense furfuraceo squamulis minutis brunneis plerumque glabrescentes. Petioli 3–4,5 cm longi indumento ut in ramulis. Laminae chartaceae oblongae 16,5–20 cm longae 6–9 cm latae, basi acuto, margine non revoluta, apice rostrato, costa uno pare nervorum 0–2 mm supra basin orienti, pare inframarginali tenuiore, supra glabrae, infra furfuraceae in nervis principalibus glabrescentes cetera glabrae. Inflorescentiae cymosae c. 14 cm longae distaliter ramosae, axibus quadrangularibus leviter complanatis. Flores 5-meri. Calyx dense ad moderate lepidotus c. 3 mm longus, tubo infundibuliformi parte inferiore tumido, margine lobis 3 vel 4 inaequalibus cuspidatis latis c. 1,5 mm longis. Petala 5 libera elliptica c. 6 mm longa c. 3 mm lata. Stamina partialiter aderant probabiliter \pm inaequalia 10, antheribus paulo curvatis c. 4,5 mm longis (apices n.v.), loculis laevibus ventralibus, calcari subulato 1,25–1,5 mm longo. Stylus c. 9 mm longus. Ovarium ad partem tumidum tubi calycis limitatum 4–6-loculare. Capsulae seminaeque non vidi. — *T y p u s*: Aet & Idjan 309 (A, holo; BO, L), Irian Jaya, Geelvink Bay Prov., Japan Island, Sememi near Serui, 2 August 1938.

Woody plant, probably a tree, all parts dark brown to blackish (i. s.). Branchlets obscurely quadrangular, becoming terete, c. 4 mm diam., at first densely furfuraceous with small brown scales, usually glabrescent. Petioles 3–4.5 cm long, with a pubescence like the branchlets. *Blades* chartaceous, oblong, 16.5–20 by 6–9 cm, base acute, margin not revolute, apex rostrate, midrib with one pair of nerves at 0–2 mm above the base, inframarginal pair thinner, upper surface glabrous, lower surface furfuraceous on the main nerves, glabrescent, otherwise glabrous. *Inflorescences* cymose, c. 14 cm long, distally branching, axes quadrangular, slightly flattened. *Flowers* 5-merous Calyx densely to moderately lepidote, tube funnelliform with a swollen lower portion, c. 3 mm long, margin with 3 or 4 unequal, cuspidate, broad, c. 1.5 mm long lobes. Petals 5, free, elliptic, c. 6 by 3 mm. *Stamens* only partially present, probably slightly unequal, 10, anthers slightly curved, c. 4.5 mm long,

apices not seen, locules smooth, ventral, spur subulate, 1.25–1.5 mm long. Style c. 9 mm long. *Ovary* confined to the swollen part of the calyx tube, 4–6-locular. Capsules and seeds not seen.

Distribution. New Guinea, Irian Jaya: Geelvink Bay Prov. (Japen I.).

Habitat. Not noted, probably lowland forests.

Note. In some herbaria labeled *Astronidium ustulatum* Ohwi, ined.



Fig. 1. *Astronidium insulare* Merr. & Perry. a. Habit, $\times 0.6$; b. node with ligules, $\times 3.6$; c. flower bud, $\times 5.4$; d. idem, longitudinal section, $\times 7.2$; e. stamen, $\times 10$ (BSIP 629).

22. *Astronidium insulare* Merr. & Perry – Fig. 1.

Astronidium insulare Merr. & Perry, J. Am. Arbor. 24 (1943) 436. — Type: Kajewski 1999 (A, holo), Papua New Guinea, Bougainville Prov., Bougainville, Koniguru, Buin, 800 m, August 1930.

Distribution. Papua New Guinea: Bougainville Prov.; Solomon Islands (Guadalcanal, Malaita, Santa Isabel).

Habitat. Well-drained primary and disturbed forests; up to 800 m.

23. *Astronidium kasiense* A. C. Smith

Astronidium kasiense A.C. Smith, *Sargentia* 1 (1942) 95. — Type: A. C. Smith 1799 (NY, holo; BISH, GH, UC, US), Fiji, Vanua Levu, Thakaundrove, Yanawai River region, Mt Kasi, 300–430 m, 10 May 1934.

Distribution. Fiji (Vanua Levu).

Habitat. Dense forest; 300–430 m.

24. *Astronidium laeve* Maxw., *spec. nov.*

Arbor 7–18 m alta, caule ad c. 10 cm diam. Ramuli acute quadrangulares parumque compressi 5–7 mm diam. demum laeves glabri. Petioli 5–10 cm longi sparse lepidoti glabrescentes, basi auricula aut absenti aut minuta valvoidea exserta crassa ad 2,5 mm longa. Laminae subcoriaceae suborbiculatae ad ellipticae 18–28 cm longae 13,5–18 cm latae, basi rotundato ad parum acuto, apice breviter acuto, costa duobus paribus nervorum 8–12 supra basin orienti, pare inframarginali tenuiore, lateribus duobus plerumque glabris. Inflorescentiae corymbosae c. 12 cm longae, axibus compressis saepe bisulcatis laevis glabris. Flores 5–8-meri. Alabastra ellipsoidea 8–9 mm longa glabra incrassata, apice irregulariter findenti in lobis 2 vel 3, 1–3 mm longis, tubo cyathiformi. Petala 5–8 libera. Stamina 10–16 dissimilia (in alabastro tantum vidi), antheribus J-formibus, oppositipetalibus scapo c. 3,5 mm longo unco c. 2,5 mm longo, alternipetalibus scapo c. 4,5 mm unco c. 1,25 mm longo, loculis laevibus a insertione filamentum secus paginam ventralem ad apicem distalem extensis. Ovarium (4–)5–8-loculare. Capsulae subglobosae ad 8 mm longae et 9 mm diam., apice vadose (4–)6-lobato (i.s.) lobis rotundatis ad 4 mm longis, areolis circularibus. Semina cuneata c. 1 mm longa truncata. — Type: NGF 26286 (Frodin) (SING, holo; A, BO, BRI, CANB, K, L, LAE), Papua New Guinea, W New Britain Prov., New Britain, Northeast slope of Mt Tengis (= Mt Talawe), SW of Airagilpua, montane forest, c. 1200 m alt., 17 November 1965.

Tree, 7–18 m tall, bole up to c. 10 cm diam. Branchlets sharply quadrangular and slightly compressed, 5–7 mm diam., finally smooth, glabrous. Petioles 5–10 cm long, sparsely lepidote, glabrescent, at base with or without a small, valve-like, protruding, thick, up to 2.5 mm long ligule. *Blades* subcoriaceous, suborbicular to elliptic, 18–28 by 13.5–18 cm, base rounded to slightly acute, apex shortly acute, midrib with two pairs of nerves from 8–12 mm above the base, inframarginal pair thinner, both surfaces usually glabrous. *Inflorescences* corymbose, c. 12 cm long, axes compressed, often 2-grooved, smooth, glabrous. *Flowers* 5–8-merous. Buds ellipsoid, 8–9 mm long, glabrous, thickened, apex irregularly splitting into 2 or 3 lobes, 1–3 mm long, tube cyathiform. Petals 5–8, free. *Stamens* 10–16, dissimilar (only seen in bud), anthers J-shaped, the oppositipetalous ones with a c. 3.5 mm long shaft and a c. 2.5 mm long hook, the alternipetalous ones with a c. 4.5 mm long shaft and a c. 1.25 mm long hook, locules smooth, extending from the insertion of the filament along the ventral surface to the distal tip. *Ovary* (4–)5–8-locular. Capsules subglobose, up to 8 mm long by 7 mm diam., apex shallowly (4–)6-lobed (i.s.), lobes rounded, up to 4 mm long, areoles circular. Seeds cuneate, c. 1 mm long, truncate.

Distribution. Papua New Guinea: W New Britain Prov.

Habitat. Lowland and montane rain forest; 0–1200 m.

Note. This species is conspicuous for the usual presence of a small ligule at the base of the petiole. A similar structure, but larger, is found in *Astronidium circumscissum*.

25. *Astronidium lemafaense* Maxw., *spec. nov.*

Arbor 5–8 m alta. Ramuli obscure quadrangulares demum tereti 5–6 mm diam. sparse furfuracei. Petioli 2,5–8,5 mm longi glabri. Laminae subcoriaceae oblongae 12–22,5 cm longae 5–10,5 cm latae, basi rotundato ad acutum parum decurrenti, apice obtuse acuto, costa uno pare nervorum 4–8 mm supra basin orienti, pare inframarginali multo tenuiore, lateribus ambobus demum glabris. Inflorescentiae corymbosae paniculatae multiflorae 7–8 cm longae. Flores 5- vel 6-meri. Alabastra si paulo aperta globosa 7–8 mm diam. glabra aspera (i. s.). Petala 6 libera. Stamina 12 subaequalia, antheribus J-formibus, loculis laevibus a medio paginae ventralis ad apicem distalem, calcari subulato. Ovarium 5- vel 6-loculare. Capsulae subglobosae 12–13 mm longae 11–13 mm diam., margine irregulariter undulato rimoso, areola circulari 6–7 mm lata, apice fructus c. 5 mm infra marginem. Semina cuneata c. 1 mm longa truncata. — T y p u s: *McKee* 2895 (E, holo; BISH, L), Samoa, Upolo Island, S of Le Mafa Pass, 300 m, 31 July 1955.

Tree, 5–8 m tall. Branchlets obscurely quadrangular, becoming terete, 5–6 mm diam., sparsely furfuraceous. Petioles 2.5–8.5 mm long, glabrous. *Blades* subcoriaceous, oblong, 12–22.5 by 5–10.5 cm, base rounded to acute and slightly decurrent, apex bluntly acute, midrib with one pair of nerves from 4–8 mm above the base, inframarginal pair much thinner, finally glabrous on both sides. *Inflorescences* corymbosely paniculate, many-flowered, 7–8 cm long. *Flowers* 5- or 6-merous. Buds when slightly opened globose, 7–8 mm diam., glabrous, rough (i. s.). Petals 6, free. *Stamens* 12, subequal, anthers J-shaped, locules smooth, from midway along the ventral side to the distal tip, spur subulate. *Ovary* 5- or 6-locular. Capsules subglobose, 12–13 mm long by 11–13 mm diam., margin irregularly undulate, cracked, areole 6–7 mm wide, circular, summit of fruit c. 5 mm below the margin. Seeds cuneate, c. 1 mm long, truncate.

Distribution. Samoa (Upolo).

Habitat. Forests, swampy area; c. 300 m.

Note. The type specimen has flower buds. Other specimens seen from the same area were *Bristol* 2437 (BISH), 2442 (A, BISH), *Whistler* 1560 (BISH, US), also in bud or with capsules.

26. *Astronidium lepidopunctatum* Maxw., *spec. nov.*

Arbor 4–30 m alta, caule ad 8 m longo 15 cm diam. Ramuli obtuse quadrangulares ad tereti 4–6 mm diam. squamulis minutis adpressis brunneis dense tecti glabrescentes. Petioli 8–43 mm longi sparse furfuracei. Laminae subcoriaceae ellipticae ad oblongae 7,5–15 cm longae 3,5–7,5 cm latae, basi acuto ad cuneato, apice acuminato, costa uno pare nervorum 3–4 mm supra basin orienti, pare inframarginali tenuiore, lateribus ambobus raphidibus obsitis, supra glabrae, infra sparse lepidotae. Inflorescentiae corymbosae c. 12 cm longae, axibus quadrangularibus complanatis indumento ut in ramulis. Pedicelli c. 4 mm longi. Flores 5-meri. Alabastra immaturissima obovoidea rosea dense lepidota tubo demum cyathiformi c. 4 mm longo sparse furfuraceo, margine lobis 4 vel 5 ± regularibus c. 0,5 mm longis late rotundatis saepe cuspidatis. Petala 5 libera c. 5 mm longa c. 3,5 mm lata. Stamina 10 aequalia, antheribus linearibus c. 3 mm longis, loculis tessellatis secus totum latum ventrali dorsalique, calcari c. 0,75 mm longo. Ovarium 4–6-loculare. Capsulae subglobosae c. 5 mm longae c. 4,5 mm diam. sulcis cristisque longitudinalibus, areola circulari. Semina cuneata c. 1,75 mm longa truncata. — T y p u s: *NGBF* (?) 1095 *Argent* (L, holo; E, LAE), Papua New Guinea, Manus Prov., Manus I., Sabon, lowland forest, c. 170 m alt., 16 June 1971.

Tree, 4–30 m tall, bole up to 8 m by 15 cm diam. Branchlets obtusely quadrangular to terete, 4–6 mm diam., densely covered by minute, appressed, brown

scales, glabrescent. Petioles 8–43 mm long, sparsely furfuraceous. *Blades* subcoriaceous, elliptic to oblong, 7.5–15 by 3.5–7.5 cm, base acute to cuneate, apex acuminate, midrib with one pair of nerves from 3–4 mm above the base, inframarginal pair thinner, both sides with raphids, upper surface glabrous, lower surface sparsely lepidote. *Inflorescences* corymbose, c. 12 cm long, axes quadrangular, flattened, pubescence like the branchlets. Pedicels c. 4 mm long. *Flowers* 5-merous. Buds when very immature obovoid, pinkish, densely lepidote, tube later cyathiform, c. 4 mm long, sparsely furfuraceous, margin with 4 or 5 \pm regular, c. 0.5 mm long, broadly rounded, often cuspidate lobes. Petals 5, free, c. 5 by 3.5 mm. *Stamens* 10, equal, anthers linear, c. 3 mm long, locules tessellate, along the entire ventral and dorsal surfaces, spur c. 0.75 mm long. *Ovary* 4–6-locular. Capsules subglobose, c. 5 mm long by 4.5 mm diam., with longitudinal grooves and ridges, areole circular. Seeds cuneate, c. 1.75 mm long, truncate.

Distribution. Papua New Guinea: Madang, Manus, New Ireland, E New Britain Prov.

Habitat. Lowland and montane forest, then dominated by *Nothofagus*; alt. 150–1065 m.

27. *Astronidium ligulatum* (J.W. Moore) Maxw.

Astronidium ligulatum (J.W. Moore) Maxw., *comb. nov.* — *Astronia ligulata* J.W. Moore, Bish. Mus. Bull. 102 (1933) 33. — **T y p e:** J.W. Moore 479 (BISH, holo), Tahiti, Raiatea, Mt Tem-ehani, 460 m, 1 January 1927.

Distribution. Society Islands (Raiatea).

Habitat. Mountain forest, wet clay soil; c. 460 m.

28. *Astronidium loloruense* Maxw., *spec. nov.*

Arbor ad 10 m alta. Ramuli tereti 4–5 mm diam. sparse adpresse lepidoti. Petioli 2,5–3,5 cm longi sparse lepidoti. Laminae subcoriaceae ellipticae 14–15 cm longae 7–7,5 cm latae, basi acuto at decurrentiter cuneato, apice abrupte acuminato, costa uno pare nervorum ad 10 mm supra basin orienti, pare inframarginali basali tenui, supra glabrae, infra sparse lepidotae glabrescentes, brunneae (i. s.). Inflorescentiae corymbosae c. 7,5 cm longae, axibus obscure quadrangularibus compressis ad teretis indumento ut in ramulis. Flores 5-meri alabastra matura tantum. Calycis tubus cyathiformis c. 5,5 mm longus adpresse lepidotus, margine irregularissime findenti in lobis pluribus inaequalibus. Petala coherentia in dimidio inferiore. Stamina 10, antheribus linearibus, loculis tessellatis a insertione filamentum circum apicem distalem breviter secus latere dorsali, calcari prominenti. Ovarium 5-loculare. Capsulae seminaeque non vidi. — **T y p e:** NGF 31302 (*Lavarack & Ridsdale*) (SING, holo; A, BO, BRI, CANB, K, L, LAE), Papua New Guinea, Bougainville Prov., Bougainville, Lake Loloru, rain forest, 1660 m alt., 7 February 1962.

Tree, up to 10 m tall. Branchlets terete, 4–5 mm diam., sparsely appressed lepidote. Petioles 2.5–3.5 cm long, sparsely lepidote. *Blades* subcoriaceous, elliptic, 14–15 by 7–7.5 cm, base acute to decurrently cuneate, apex abruptly acuminate, midrib with one pair of nerves from up to 10 mm above the base, inframarginal pair basal, thin, upper surface glabrous, lower surface sparsely lepidote, glabrescent, brown (i. s.). *Inflorescences* corymbose, c. 7.5 cm long, axes obscurely quadrangular, flattened to terete, pubescent as the branchlets. *Flowers* 5-merous, mature

buds seen only. Calyx tube cyathiform, c. 5.5 mm long, appressed lepidote, margin splitting very irregularly into several unequal lobes. Petals coherent in the lower half. *Stamens* 10, anthers linear, locules tessellate, extending from the insertion of the filament around the distal tip shortly along the dorsal side, spur prominent. *Ovary* 5-locular. Capsules and seeds not seen.

Distribution. Papua New Guinea: Bougainville Prov., Bougainville.

Habitat. Rain forest; c. 1660 m.

29. *Astronidium macranthum* (A.C. Smith) A.C. Smith

Astronidium macranthum (A.C. Smith) A.C. Smith, *Sargentia* 1 (1942) 93. — *Astronia macrantha* A.C. Smith, *Bish. Mus. Bull.* 141 (1936) 113, t. 59. — *Type:* A.C. Smith 1706 (BISH, holo; GH, NY, UC, US), Fiji, Vanua Levu, Mbua, Southern portion of Seatovo Range, 100–350 m, 2 May 1934.

Distribution. Fiji (Vanua Levu).

Habitat. Primary forests; 100–900 m.

30. *Astronidium mammiforme* Maxw., *spec. nov.*

Arbor ad 7 m alta, caule ad 21 cm diam. Ramuli obscure quadrangulares ad tereti 4–5 mm diam. sparse minute furfuracei, laeves. Petioli 2,5–3,5 cm longi glabri. Laminae subcoriaceae oblongae ad lanceolatae 12–18 cm longae 4–6 cm latae, basi cuneato, apice acuminato, costa uno pare nervorum 3–8 mm supra basin orienti, pare inframarginali basali tenuiore, supra glabri triste olivaceo-virides (i.s.), infra squamulis sparsis minutis punctiformes glabrescentes dilute virides (i.s.). Inflorescentiae corymbosae 6,5–7,5 cm longae, axibus quadrangularibus ad compressis sparse furfuraceis. Bractae lineares ad 5 mm longae 1,5 mm latae glabrae. Flores 5- vel 6-meri. Alabastra clausa ovoidea mammiformia c. 4 mm longa 3,5 mm diam. sparse furfuracea. Petala libera 5 vel 6. Stamina 10 vel 12 subaequalia, antheribus linearibus, loculis laevibus omnino secus paginam ventralem circum apicem ad paginam dorsalem, oppositipetalibus paulo longioribus, calcari prominenti. Ovarium 5- vel 6-loculare. Capsulae seminaeque non vidi. — *Type:* BSIP 5211 (*Whitmore*) (SING, holo; HON, L), Solomon Islands, SE Choiseul I., near Ruruvai, ridge top in a well-drained primary forest, 35 m alt., 28 February 1964.

Tree, up to 7 m, bole up to 21 cm diam. Branchlets obscurely quadrangular to terete, 4–5 mm diam., sparsely, minutely furfuraceous smooth. Petioles 2.5–3.5 cm long, glabrous. *Blades* subcoriaceous, oblong to lanceolate, 12–18 by 4–6 cm, base cuneate, apex acuminate, midrib with one pair of nerves from 3–8 mm above the base, inframarginal pair basal, thinner, upper surface glabrous, dull olive green (i.s.), lower surface with scattered minute, punctate scales, glabrescent, pale greenish (i.s.). *Inflorescences* corymbose, 6.5–7.5 cm long, axes quadrangular to flattened, sparsely furfuraceous. Bracts linear, up to 5 by 1.5 mm, glabrous. *Flowers* 5- or 6-merous. Closed buds ovoid, mammiform, c. 4 mm long by 3.5 mm diam., sparsely furfuraceous. Petals free, 5 or 6. *Stamens* 10 or 12, subequal, anthers linear, locules smooth, covering the entire ventral surface and shortly around the distal tip on to the dorsal surface, the oppositipetalous ones slightly longer, spur prominent. *Ovary* 5- or 6-locular. Capsules and seeds not seen.

Distribution. Solomon Islands (Choiseul Island).

Habitat. Well-drained primary forest; c. 35 m.

31. *Astronidium micranthum* Maxw., *spec. nov.*

Arbor 3–8 m alta. Ramuli obscure quadrangulares demum tereti c. 3 mm diam. dense minute adpresse atro-brunnee lepidoti. Petioli 1,5–3 cm longi sparse lepidoti. Laminae subcoriaceae anguste oblongae ad lanceolatae 8–13 cm longae 2–4,5 cm latae, basi cuneato, apice acuminato, costa uno pare nervorum 5–6 mm supra basin orienti, pare inframarginali tenuissimo, supra glabrae, infra sparse minute lepidotae. Inflorescentiae corymbosae 4–5 cm longae, axibus obscure quadrangularibus ad complanatis indumento ut in ramulis. Flores 5-meri. Tubus calycis campanulatus c. 2 mm longus, margine lobis 5 subaequalibus c. 0,3 mm longis late rotundatis cuspidatis. Petala 5 libera. Stamina 10 aequalia, loculis parum e infra insertionem filamentum ad c. 0,67 longitudinis paginae dorsalis tessellatis. Ovarium 4- vel 5-loculare. Capsulae subglobosae c. 4,5 mm longae c. 5 mm diam. Semina cuneata c. 1,25 mm longa truncata. — T y p u s: *NGF 15541 (Croft & Katik)* (L, holo; A, BISH, BRI, CANB, E, K, LAE, M, NSW), Papua New Guinea, New Britain, Kandrian Subdist., Mt Klanggal, 25 miles NNE of Gasmata, *Castanopsis* summit forest, 800 m, 15 May 1973.

Tree, 3–8 m tall. Branchlets obscurely quadrangular, later terete, c. 3 mm diam., densely, minutely, appressedly, dark brown lepidote. Petioles 1.5–3 cm long, sparsely lepidote. *Blades* subcoriaceous, narrowly oblong to lanceolate, 8–13 by 2–4.5 cm, base cuneate, apex acuminate, midrib with one pair of nerves from 5–6 mm above the base, inframarginal pair very thin, upper surface glabrous, lower surface sparsely minutely lepidote. *Inflorescences* corymbose, 4–5 cm long, axes obscurely quadrangular to flattened, with a pubescence like the branchlets. *Flowers* 5-merous. Calyx tube campanulate, c. 2 mm long, margin with 5 subequal, c. 0.3 mm long, broadly rounded, cusped lobes. Petals 5, free. *Stamens* 10, equal; locules from slightly below the insertion of the filament to c. 0.67 of the length of the dorsal surface, tessellate. *Ovary* 4- or 5-locular. Capsules subglobose, c. 4.5 mm long by 5 mm diam. Seeds cuneate, c. 1.25 mm long, truncate.

Distribution. Papua New Guinea: W & E New Britain.

Habitat. *Castanopsis*, *Nothofagus* forests; 800–1500 m.

32. *Astronidium miraculum-dei* Veldk. & Maxw., *spec. nov.* — Fig. 2b.

Arbor 6–19 m alta, caule 10–18 cm diam. Ramuli tereti, 7–12 mm diam. initio squamulis minutis brunneis furfuraceis dense tecti glabrescentes nigri (i.s.). Petioli 3–6,5 cm longi 2–5 mm diam. pubescentes ut in ramulis, pseudo-stipulis parte inferiore petioli adnatis, auriculiformibus ellipticis 2–6 cm longis 1,5–4,5 cm latis, apice rotundato, tenuibus nervis parallelibus basalibus incrassatis. Laminae subcoriaceae oblongis ad obovato-oblongis 19–45 cm longis 8,5–24 cm latis, basi acuto ± decurrenti ad rotundato, apice acuto ad abrupte acuminato, acumine 5–6 mm longo, costa duobus paribus raro uno pare nervorum 6–27 mm supra basin orientibus, pare inframarginali tenuiore, supra glabrae atro-nigro-brunneae (i.s.), infra costis sparse lepidotis rare villosis cetera scaberulae nigrescentes (i.s.). Inflorescentiae thyrsoidae, 8–15-floribus, 8–15 cm longae, axibus obtuse quadrangularibus ad applanatis pubescentia siccitateque ut in ramulis, pedicellis 15–37 mm longis, bracteis mox caduceis. Alabastra ovoidea c. 14 mm longa c. 9 mm diam., apice acuto irregulariter fisso sparse lepidoto glabrescenti. Tubus calycis incrassatus urceolatus in medio constricto margine irregularissime lobato rimosoque in lobis triangularibus 2 vel 3 vel margine irregulariter undulato 9–15 mm longus 9–10 mm diam. niger (i.s.). Petala 8 libera tenuia linearo-lanceolata c. 30 mm longa c. 5 mm lata. Stamina 16 subaequalia antheribus linearibus (in alabastro), loculis pagina ventrali dorsalique et pro parte calcaribus sinuatis 1,8–2,25 mm longis tectis, calcaria epipetalia parum longiora. Capsulae tubo calycis similes 15–16 mm longae 14–16 mm diam. glabrae nigrae (i.s.). Semina linearia 2–2,5 mm longa. — T y p u s: *BSIP 7310 (Beer's*

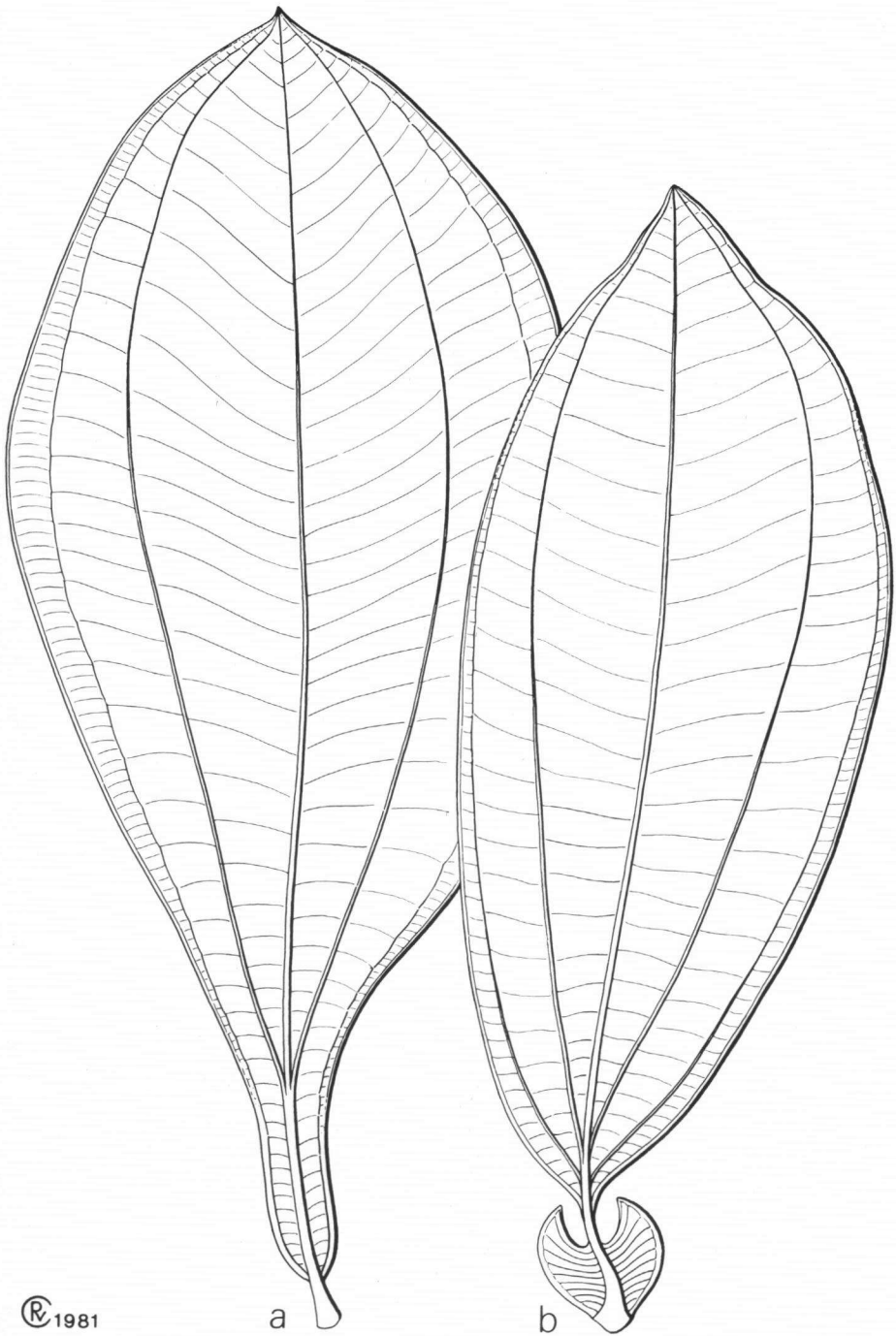


Fig. 2. — a. *Astronidium sessilifolium* Merr. & Perry. Leaf blade, $\times 1$ (BSIP 16303). — b. *Astronidium miraculum-dei* Veldk. & Maxw. Leaf blade, $\times 1$ (BSIP 1492).

Collectors) (SING, holo; HON, L), Solomon Islands, Santa Isabel (Ysabel), Nahao Bay, primary forest, c. 70 m alt., 14 June 1966.

Tree, 6–19 m high, bole 10–18 cm diam. Branchlets terete, 7–12 mm diam., at first densely covered with minute, brown, furfureaceous scales, sometimes villous, glabrescent, black (i.s.). Petioles 3–6.5 cm long by 2–5 mm diam., pubescent as the branchlets, pseudo-stipules adnate to the lower part of the petiole, sessile, blade-like, auricular, elliptic, 1–6 by 1.5–4.5 cm, apex rounded, thin, parallel-nerved, at base with thickened nerves. *Blades* subcoriaceous, oblong to obovate-oblong, 19–45 by 8.5–24 cm, base acute and slightly decurrent to rounded, apex acute to abruptly acuminate, acumen 5–6 mm long, midrib with two, rarely one pair of nerves from 6–27 mm above the base, inframarginal pair thinner, upper surface glabrous, blackish brown (i.s.), lower surface with sparsely lepidote furfureaceous, rarely villous main nerves, otherwise glabrous, scaberulous, nigrescent (i.s.). *In-florescences* thyrsoid, 8–15-flowered, 8–15 cm long, axes bluntly quadrangular to compressed, pubescent and drying as the branchlets, pedicels 15–37 mm long, bracts soon caducous. Buds ovoid, c. 14 mm long by 9 mm diam., apex acute and irregularly splitting, sparsely furfureaceous lepidote, glabrescent. Calyx tube thickened, urceolate, constricted about the middle, 9–15 mm long by 9–10 mm diam., margin very irregularly lobed and cracked into 2 or 3 triangular lobes, or margin becoming irregularly undulate, black (i.s.). Petals 8, free, thin, linear-lanceolate, c. 30 by 5 mm. *Stamens* 16, subequal, anthers in bud linear, c. 7 mm long, locules extending along the ventral and dorsal surfaces and partly along the \pm sinuate, 1.8–2.25 mm long spurs, the epipetalous spur slightly longer with more extensive locules. Style up to 42 mm long. *Ovary* 8- or 9-locular. Capsules similar to the calyx tube, 15–16 mm long by 14–16 mm diam., glabrous, black (i.s.). Seeds linear, 2–2.5 mm long.

Distribution. Solomons (Choiseul, Kolombangara, New Georgia, Sta Isabel).

Habitat. Well-drained primary forests; 75–670 m.

Notes. The epithet is derived from the exclamation, “A God’s wonder!”, by Dr. C.G.G.J. van Steenis when he first observed the amazing pseudostipules. These appendages cannot be regarded as true stipules, as their insertion and innervation is from the petiole, or midrib, of the leaf, and not from the areas lateral to the insertion of the leaf on the twig. They should not be regarded as stipules adnate to the petiole, as in e.g. *Rosa*.

When comparing this species to *Astronidium sessilifolium* Merr. & Perry, the origin of the pseudostipules becomes understandable, although not explained (see fig. 2): the base of the blade there shows the same parallel nervation as is seen here in the pseudostipules, and, somehow, the blade has become constricted all the way to the midrib separating the upper part of the blade from the lower.

Pseudostipules are very rare in this estipular family. It is therefore most remarkable that in SE New Guinea there are at least 21 species of *Medinilla* which have these as well. Only two of these seem to have been described, in both cases without their authors noticing their presence. This seems another instance of Went’s theory of parallel evolution by lateral gene transfer (Taxon 20, 1971: 197–226) (See also Veldkamp & Van Scheidelen, Blumea 34, 1989: 61–76, for a reminiscent case in grasses.) — JFV.

33. *Astronidium montanum* Merr. & Perry

Astronidium montanum Merr. & Perry, J. Arn. Arbor. 24 (1943) 436. — T y p e: *Kajewski 2515* (A, holo; L), Solomon Is., Uulolo, Tutuve Mt, 1200 m, 15 January 1931.

Distribution. Solomon Islands (Bougainville, Choiseul, Guadalcanal, Kolombangara, Maisua, Rob Roy, San Jorge, Santa Isabel, Shorthand, Uulolo, Vangunu, Vella Lavella).

Habitat. Well-drained primary and secondary forests, along mangrove and tidal rivers; 0–1200 m.

34. *Astronidium morobiense* Maxw., *spec. nov.*

Arbor 6–14 m alta, caule 3–6 m longo 5–17 cm diam. Ramuli initio quadrangulares ad tereti demum tereti 4–5 mm diam. sparse furfuracei. Petioli 1,5–3,5 cm longi sparse furfuracei. Laminae subcoriaceae ellipticae ad oblongae 10–14 cm longae 4,5–8 cm latae fusce brunneo-nigrae niitidaeque (i. s.), basi acuto, apice acuto, costa uno pare nervorum 4–10 mm supra basin orienti, pare inframarginali obscuro sparse furfuraceo. Inflorescentiae cymosae 5–8 cm longae 9–12-floribus, axibus quadrangularibus ad compressis moderate pubescentibus squamulis minutis furfuraceis. Flores 6-meri. Calyces dense minute furfuraceis, tubo campanulato c. 9 mm longo, incrassato, margine irregulariter rimoso fidentique. Petala 6 elliptica 11 mm longa c. 6,5 mm lata alba. Stamina 12 subaequalia, filamentis 11–12 mm longis, antheribus linearibus 6,5–7 mm longis, loculis omnino secus paginam ventralem circum apicem et breviter, c. 1 mm, secus paginam dorsalem, calcari c. 2 mm longo, apice complanato obliquo. Stylus c. 8 mm longus. Ovarium 5- vel 6-loculare. Capsulae immaturae urceolato-infundibulares ad dimidio constrictae c. 10 mm longae c. 8 mm diam. Semina immatura cuneato-lineares c. 1 mm longa truncata. — T y p u s: *NGF 21568* (Sayers) (SING, holo; A, BISH, BO, BRI, CANB, K, L, LAE, NSW, PNH, US), Papua New Guinea, Morobe Prov., Wagau, forest, c. 1660 m alt., 11 January 1965.

Tree, 6–14 m tall, bole 3–6 m long, 5–17 cm diam. Branchlets at first obscurely quadrangular to terete, terete with age, 4–5 mm diam., sparsely furfuraceous. Petioles 1.5–3.5 cm long, sparsely furfuraceous. *Blades* subcoriaceous, elliptic to oblong, 10–14 by 4.5–8 cm, dark brown blackish and smooth, base acute, apex acute, midrib with one pair of nerves from 4–10 mm above the base, inframarginal pair obscure, sparsely furfuraceous. *Inflorescences* cymose, 5–8 cm long, with 9–12 flowers, axes quadrangular to flattened, moderately furfuraceous. Flowers 6-merous. Calyx densely minutely furfuraceous, tube campanulate, c. 9 mm long, thickened, margin irregularly cracked and split. Petals 6, elliptic, c. 11 by 6.5 mm, white. *Stamens* 12, subequal; filaments 11–12 mm long, anthers linear, 6.5–7 mm long, locules all along the ventral surface, around the tip and shortly, c. 1 mm, along the dorsal surface, smooth, spur c. 2 mm long, apex flattened, oblique. Style c. 8 mm long. *Ovary* 5- or 6-locular. Immature capsules urceolate-funnelform, constricted about the middle, c. 10 mm long by 8 mm diam. Immature seeds cuneate, linear, c. 1 mm long, truncate.

Distribution. Papua New Guinea: Morobe Prov.

Habitat. Primary forests, mossy fagaceous forest; 1350–1800 m.

35. *Astronidium muscosum* Merr. & Perry

Astronidium muscosum Merr. & Perry, J. Arn. Arbor. 24 (1943) 436. — T y p e: *Brass 3035* (A, holo), Solomon Is., San Cristobal, Hinuahaoro, 900 m, September 1932.

a. var. *muscosum*.

D i s t r i b u t i o n. Solomon Is. (Guadalcanal, San Cristoval).

H a b i t a t. Rain forests; 700–900 m.

b. var. *decurrens* Maxw., var. nov.

A var. *muscoso* in his characteribus differt. Petioli 1,5–2,5 cm longi albe floccosi in ima 1–2 cm, dorsaliter invaginati per longitudinem totam sulco indumento albo floccoso replenti. Laminae subcoriaceae, basi prominenter decurrenti, costa pare nervorum inferiore 8–20 mm superioreque 15–40 mm supra basin orienti, infra sparse lepidotae ad glabrae. Flores minores. Tubus calycis c. 3 mm longus. Petala coherentia c. 3 mm longa apice acutiore. Antherae c. 2,5 mm longae, calcari c. 0,5 mm longo. Stylus c. 3 mm longus. — T y p u s: *Brass 28400* (US, holo; A, L), Papua New Guinea, Milne Bay Prov., Rossel Is., S slopes of Mt Rossel, undergrowth forest, 700 m, 14 Nov. 1956.

Differs from var. *muscosum* in: petioles 1.5–2.5 cm long, white floccose in the lower 1–2 cm, dorsally invaginated along the entire length, the groove filled with a white, floccose indument. *Blades* subcoriaceous, base prominently decurrent, midrib with the lower pair of nerves 8–20 mm, the upper one 15–40 mm above the base, lower surface sparsely lepidote to glabrous. *Flowers* smaller. Calyx tube c. 3 mm long. Petals coherent, c. 3 mm long, apex acute. Anthers c. 2.5 mm long, spur c. 0.5 mm long. Style c. 3 mm long.

D i s t r i b u t i o n. Papua New Guinea: Milne Bay Prov., Rossel I.

H a b i t a t. Undergrowth forest; c. 700 m alt.

36. *Astronidium navigatorum* Christophersen

Astronidium navigatorum Christophersen, Bish. Mus. Bull. 154 (1938) 31, t. 9. — T y p e: *Christophersen & Hume 1987* (BISH, holo; A, BO, US), Samoa, Savaii, Matavanu crater, 900 m, 14 July 1931.

D i s t r i b u t i o n. Samoa (Savaii, Tutuila, Upolo).

H a b i t a t. Primary forests, often wet; 500–900 m.

37. *Astronidium novae-ebudaense* Maxw., spec. nov.

Arbor 4–7 m alta. Ramuli tereti 4–5 mm diam squamulis dispersis demum glabri. Petioli 2–4 cm longi glabri. Laminae subcoriaceae ellipticae ad oblongae 10–16 cm longae 4–8 cm latae, basi acuto ad cuneato, apice acuminato, costa uno pare nervorum orienti imum ad 2 mm supra basin, pare inframarginali tenuissimo, supra glabrae, infra sparse lepidotae ad glabrescentes. Inflorescentiae cymosae 7–8 cm longae, axibus compressae quadrangularibus plerumque glabris. Flores 5- vel 6-meri. Alabastra calycium ante anthesin ellipsoidea c. 8 mm longa c. 6 mm diam. apice irregulariter fidentia glabra, tubo incrassato campanulato c. 9 mm longo c. 9 mm diam. atrobrunneo rugoso

(i.s.), margine irregulariter undulato, lobis ad 0,5 mm longis. Petala elliptica ubi fere adulta c. 16 mm longa c. 8 mm lata isabellina. Stamina 10 vel 12 subaequalia, filamentis c. 12 mm longis in alabastris adultis, antheris J-formibus c. 9 mm longis, loculis laevibus circa a medio paginae ventralis ad apicem unci, unco in oppositipetalibus c. 3 mm longis, in alternipetalibus c. 1 mm longis, calcari c. 3 mm longo, apice oblique complanato. Ovarium 5- vel 6-loculare. Capsulae seminae non vidi. — **T y p u s:** *Bernardi 13321* (Z, holo; L), Vanuatu, Eromanga I., Nompoun-Oumpan Mts, Happy Land, primary forest, 400–450 m alt., 7 June 1968.

Tree, 4–7 m tall. Branchlets terete, 4–5 mm diam., with minute, scattered scales, glabrous with age. Petioles 2–4 cm long, glabrous. *Blades* subcoriaceous, elliptic to oblong, 10–16 by 4–8 cm, base acute to cuneate, apex acuminate, midrib with one pair of nerves from the very base or up to 2 mm above it, inframarginal pair very thin, upper surface glabrous, lower surface sparsely lepidote to glabrescent. *Inflorescences* cymose, 7–8 cm long, axes quadrangular, flattened, usually glabrous. *Flowers* 5- or 6-merous. Calyx buds before anthesis ellipsoid, c. 8 mm long by 6 mm diam., splitting irregularly at the apex, glabrous, tube thickened, campanulate, c. 9 mm long by 9 mm diam., dark brown, rugose (i.s.), margin irregularly undulate, lobes up to 0.5 mm long. Petals elliptic when nearly full-grown, c. 16 by 8 mm, yellow-white. *Stamens* 10 or 12, subequal, filaments c. 12 mm long in full-grown buds, anthers J-shaped, c. 9 mm long, locules smooth, from about the middle of the ventral surface to the tip of the hook, hook c. 3 mm long in the oppositipetalous ones and c. 1 mm long in the alternipetalous ones, spur c. 3 mm long, apex obliquely flattened. *Ovary* 5- or 6-locular. Fruits and seeds not seen.

D i s t r i b u t i o n. Vanuatu (Eromanga, Tana).

H a b i t a t. Primary forests, near river; 150–450 m.

38. *Astronidium novae-hannoverae* (Engl.) Merr. & Perry

Astronidium novae-hannoverae (Engl.) Merr. & Perry, J. Arn. Arbor. 24 (1943) 436. — *Astronia novae-hannoverae* Engl., Bot. Jb. 7 (1886) 468. — **T y p e:** *Naumann s.n.* (B, holo, not extant), Papua New Guinea, New Ireland Prov., New Hanover, 200 m, 24 July 1875.

D i s t r i b u t i o n. Papua New Guinea: New Ireland Prov., New Hanover.

H a b i t a t. Not noted.

39. *Astronidium novoguineense* Merr. & Perry

Astronidium novoguineense Merr. & Perry, J. Arn. Arbor. 24 (1943) 435. — **T y p e:** *Brass 12695* (A, holo, n.v.; BO, L; US, n.v.), Irian Jaya, Jayapura Prov., 18 km SW of Bernhard Camp, Iden-burg River, 2150 m, February 1939.

D i s t r i b u t i o n. New Guinea, Irian Jaya: Jayapura Prov.

H a b i t a t. *Agathis* and mossy forests, 900–2150 m.

N o t e. The isotype in L has small ligules, c. 3.5 mm long, margins decurrent along the petiole, apex rounded, glabrous inside, sometimes leaving a faint patch on the adjacent bark. The paratype, *Brass 13312*, which unfortunately is in fruit, seems to belong to a different species because of the absence of a ligule, and the leaf blades which are obovate, sub-3-plinerved with the main nerves branching off 13–21 mm above the narrowly attenuate-cuneate, decurrent base of the blade. — JFV.

40. *Astronidium ovalifolium* (Decne.) Maxw., *comb. nov.*

Astronia ovalifolia Naud. ex Decne., *Voy. Venus* (1864) 27; Triana, *Trans. Linn. Soc., London* 1871) 152, pro spec. nov. — *Pharmacum ovalifolium* O. Ktze, *Rev. Gen. Pl.* 3 (1898) 954. — *Type: Vesco s.n.* (P, holo), Tahiti.

Distribution. Society Islands (Raiatea, Tahiti).

Habitat. Open plains, elfin forest, moist clay soil; 400–700 m.

41. *Astronidium palauense* (Kaneh.) Markgraf

Astronidium palauense (Kaneh.) Markgraf, *Not. Bot. Gart. Mus. Berlin-Dahlem* 12 (1934) 49. — *Astronia palauensis* Kaneh., *Bot. Mag. Tokyo* 45 (1931) 377. — *Lectotype: Kanehira 503* (FU, holo, n.v.; A) (here appointed), Caroline Is., Palau, Aimiyon, July 1929.

Distribution. Caroline Islands (Malakal, Palau).

Habitat. Primary forest, along river on volcanic-clay soil; close to sea level.

42. *Astronidium pallidiflorum* A.C. Smith

Astronidium pallidiflorum A.C. Smith, *Contrib. U.S. Nat. Hb.* 37 (1967) 80. — *Type: A. C. Smith 9313* (US, holo; BISH, L), Fiji, Viti Levu, Serua, W of Waivunu Creek, between Ngaloa and Korovou, 50–150 m, 26 November 1953.

Distribution. Fiji (Viti Levu).

Habitat. Dense forest; 50–150 m.

43. *Astronidium pallidum* Maxw., *spec. nov.*

Arbor ad 16 m alta, caule ad 20 cm diam. Ramuli obscure quadrangulares ad tereti 4–5 mm diam. sparse furfuracee lepidoti ad glabrescentes nitidi, nodis paulo incrassatis. Petioli dorsaliter sulcati 2–4 cm longi nitidi glabri. Laminae subcoriaceae ellipticae ad oblongae 10–20 cm longae 4–7 cm latae, basi acuti ad cuneato saepe decurrenti, apice acuminato ad paulo rostrato, costa uno pare nervorum 5–20 mm supra basin orienti infrequenter in imum, pare inframarginali basali tenuiore, demum ambabus paginis glabris nitidis supra raphidibus distinctis triste olivaceae virides (i.s.), infra dilute virides (i.s.). Inflorescentiae corymbosae 6–9 cm longae, axibus quadrangulibus ad complanatis sparse furfuracee lepidoti ad glabri. Flores 5-meri, alabastra clausa tantum vidi, qua globosa c. 5 mm diam. sparse furfuracea ad glabra. Petala libera. Stamina 10 subaequalia, antheris linearis, loculis laevibus latus ventrale tote dorsaliter apice distali paulo tectis, calcari prominenti c. 0,75 mm longo. Capsulae subgloboso-campanulatae dimidio leviter constrictae 5,5–6,5 mm longae 6–7,5 mm diam. glabrae, margine truncato lobis cuspidibusque irregularibus, areola circulari. Semina cuneata c. 0,75 mm longa truncata. — *Type: BSIP 3138 (Cowmeadow)* (L, holo; HON, SING), Solomon Islands, New Georgia Group, New Georgia Island, NW part, Vaimbu River, well-drained primary forest, c. 135 m alt., 24 March 1964.

Tree, up to 16 m tall, bole up to 20 cm diam. Branchlets obscurely quadrangular to terete, 4–5 mm diam., sparsely furfuraceous lepidote to glabrescent, smooth; nodes slightly swollen. Petioles dorsally grooved, 2–4 cm long, smooth, glabrous. *Blades* subcoriaceous, elliptic to oblong, 10–20 by 4–7 cm, base acute to cuneate and often decurrent, apex acuminate to somewhat rostrate, midrib with one pair of nerves from 5–20 mm above the base, infrequently at the very base, inframarginal pair basal, thinner, glabrous and smooth on both sides with age, above with distinct

raphids, dull olive green (i.s.), beneath pale greenish (i.s.). *Inflorescences* corymbose, 6–9 cm long, axes quadrangular to compressed, sparsely furfuraceous lepidote to glabrescent, smooth. *Flowers* 5-merous, only closed buds seen, these globose, c. 5 mm diam., sparsely furfuraceous to glabrous. Petals free. *Stamens* 10, subequal, anthers linear, locules smooth, covering the entire ventral surface and slightly around the distal tip on the dorsal surface, the oppositipetalous ones slightly more extensive, spur prominent, c. 0.75 mm long. *Ovary* 5- or 6-locular. Capsules subglobose-campanulate, slightly constricted about the middle, 5.5–6.5 mm long by 6–7.5 mm diam., glabrous, margin truncate with irregular lobes and cusps, areole circular. Seeds cuneate, c. 0.75 mm long, truncate.

Distribution. Solomon Islands (Barora Fa, Barora Ite, New Georgia, Santa Isabel, Vanikoro).

Habitat. Well-drained primary forests; 0–160 m.

44. *Astronidium parviflorum* A. Gray

Astronidium parviflorum A. Gray, Proc. Am. Acad. Arts & Sc. 3 (1853) 53 (descr. gen.-spec.); in Wilkes, U.S. Expl. Exped., Bot., Phan. (1854) 582, t. 72C. — *Astronia parviflora* Triana, Trans. Linn. Soc., London 28 (1871) 152. — *Pharmacum parviflorum* O. Ktze, Rev. Gen. Pl. 1 (1891) 248. — **Lectotype:** *Pickering s.n.* (US, holo; GH, NY), Fiji, Ovalau (A.C. Smith, Sargentia 1, 1942, 90, gave only a single collection, which he thought most likely came from Ovalau).

Distribution. Fiji (Ovalau, Viti Levu).

Habitat. Primary forests, often in exposed thickets and scrub, volcanic soil; 400–1250 m.

45. *Astronidium pickeringii* (A. Gray) Christophersen

Astronidium pickeringii (A. Gray) Christophersen, Bish. Mus. Bull. 154 (1938) 32. — *Astronia pickeringii* A. Gray, in Wilkes, U.S. Expl. Exped., Bot. Phan. (1854) 577. — *Astronia pickeringii* A. Gray var. *samoensis* A. Gray in Wilkes, U.S. Expl. Exped., Bot. Phan. (1854) 577, t. 72-B, p.p.; nom. inval. (autonym required). — *Pharmacum pickeringii* O. Ktze, Rev. Gen. Pl. 3 (1898) 954. — *Astronidium pickeringii* (A. Gray) Christophersen var. *samoense* Christophersen, Bish. Mus. Bull. 154 (1938) 32, nom. inval. (autonym required). — **Type:** *Pickering s.n.* (US, holo), Samoa, Mountains of Tutuila.

Astronia pickeringii A. Gray var. *vitiensis* A. Gray in Wilkes, U.S. Expl. Exped., Bot. Phan. (1854) 578, t. 72B, p.p. — **Type:** *Pickering s.n.* (US, holo; GH), Fiji, Ovalau, 350 m alt.

Distribution. Samoa (Olosenga, Tau, Tutuila); Fiji (Ovalau).

Habitat. Primary and secondary forests; 250–600 m.

46. *Astronidium ponapense* (Kaneh.) Markgraf

Astronidium ponapense (Kaneh.) Markgraf, Not. Bot. Gart. Mus. Berlin-Dahlem 12 (1934) 49. — *Astronia ponapensis* Kaneh., Bot. Mag. Tokyo 45 (1931) 337. — **Type:** *Kanehira 796* (FU, holo, n.v.; A, US), Caroline Is., Ponape, Niinoani-zan, 200–500 m, August 1929.

Distribution. Caroline Islands (Ponape).

Habitat. Primary forests; 200–500 m.

47. *Astronidium pseudoparviflorum* Maxw., *spec. nov.*

Frutex ad 5 m altus. Ramuli tereti, 3–3,5 mm diam. demum glabri. Petioli 1,5–3,5 cm longi glabri. Laminae subcoriaceae oblongae 6–16 cm longae 3–6,5 cm latae, basi cuneato, apice acuto, costa uno pare nervorum 4–7 mm supra basin orienti, pare inframarginali tenuissimo, supra glabrae, infra sparse lepidoto-punctatae. Inflorescentiae thyrsoidae 6,5–11,5 cm longae multiflorae, axibus complanatis glabri, pedicellis 3–4 mm longis. Flores 4-meri. Calyx cupularis 3–3,5 mm longus glaber, margine irregulariter truncato-undulato. Petala 4 libera alba. Stamina 8 subaequalia, antheris J-formibus, loculis laevibus ultra insertionem nervorum filamenti orientibus. Capsulae 4-loculares subglobose-urceolatae c. 3 mm longae c. 3,5 mm diam. glabrae, parte collari c. 1 mm longa, margine lobis 4 truncatis aequalibus, apice minute cuspidato inflexo, areola quadrangulari, rimis marginalibus c. 0,5 mm profundis. Semina plerumque leviter curvata cuneata c. 1mm longa oblique truncata. — T y p u s: *Horne 1038* (A, holo; K), Fiji Island.

Shrub, up to 5 m high. Branchlets terete, 3–3.5 mm diam., glabrous at maturity. Petioles 1.5–3.5 cm long, glabrous. *Blades* subcoriaceous, oblong, 6–16 by 3–6.5 cm, base cuneate, apex acute, midrib with one pair of nerves from 4–7 mm above the base, inframarginal pair much thinner, upper surface glabrous, lower surface sparsely lepidote-punctate. *Inflorescences* thyrsoid, 6.5–11.5 cm long, many-flowered, axes flattened, glabrous, pedicels 3–4 mm long. *Flowers* 4-merous. Calyx cupular, 3–3.5 mm long, glabrous, margin irregularly truncate-undulate. Petals 4, free, white. *Stamens* 8, subequal, anthers J-shaped, locules smooth, extending from below the insertion of the filament. Capsules 4-locular, subglobose-urceolate, c. 3 mm long by 3.5 mm diam., glabrous, neck-like portion c. 1 mm long, margin with 4 truncate equal lobes, the tip minutely cusped and inflexed, areole quadrangular, marginal cracks c. 0.5 mm deep. Seeds often slightly curved, cuneate, c. 1 mm long, obliquely flat-topped.

Distribution. 'Fiji Island', Taveuni I.

Habitat. Forests; c. 400 m.

Note. The type specimen is merely labeled 'Fiji Island', presumably Viti Levu, the other specimen seen was *A.C. Smith 725* (A) from Taveuni I.

48. *Astronidium puberulum* Maxw., *spec. nov.*

Arbor ad c. 7 m alta, caule c. 10 cm diam. Ramuli tereti 5–6 mm diam. demum glabri. Petioli 2,5–3,5 cm longi glabri. Laminae subcoriaceae anguste ellipticae ad oblongae 16–22 cm longae 7–8 cm latae, basi rotundato breviter decurrenti, apice acuminato, costa uno pare nervorum 5–8 mm supra basin orienti, pare inframarginali tenuiore, demum ambabus paginis glabris. Inflorescentiae corymbosae dense floriferae c. 14,5 cm longae, axibus quadrangularibus ad complanatis praecipue superioribus pedicellisque squamulis minutis dilute brunnee dense tectis. Flores 5-meri, alabastro matura tantum vidi. Calyx indumento ut in pedicellis, tubo campanulato c. 2,25 mm longo, margine lobis irregularibus ad regularibus, c. 0,25 mm longis late rotundatis cuspidatis plerumque truncatis ut videtur. Petala libera. Stamina aequalia, antheris linearibus, loculis tessellatis a paulo infra insertionem filamentum in pagina ventrali ad dimidio secus paginam dorsalem. Ovarium 5-loculare. Capsulae seminae non vidi. — T y p u s: *LAE 53650* (*Stone & Streimann 10350*) (L, holo; A, BRI, CANB, K, LAE), Papua New Guinea, Manus Prov., Manus I., Mt Dremsel, upper mixed forest, c. 500 m alt., 21 June 1971.

Tree, up to c. 7 m tall, bole c. 10 cm diam. Branchlets terete, 5–6 mm diam., glabrous with age. Petioles 2.5–3.5 cm long, glabrous. *Blades* subcoriaceous, narrowly elliptic to oblong, 16–22 by 7–8 cm, base rounded, shortly decurrent, apex

acuminate, midrib with one pair of nerves from 5–8 mm above the base, inframarginal pair thinner, glabrous on both surfaces with age. *Inflorescences* corymbose, densely flowered, c. 14.5 cm long, axes quadrangular to flattened, densely covered with minute, pale brown scales, especially on the upper axes and pedicels. *Flowers* 5-merous, mature buds seen only. Calyx pubescent as the pedicels, tube campanulate, c. 2.25 mm long, margin with irregular to regular, c. 0.25 mm long, broadly rounded, cusped lobes, often appearing nearly truncate. Petals free. *Stamens* equal, anthers linear, locules tessellate, from slightly below the insertion of the filament on the ventral surface to about midway along the dorsal surface. *Ovary* 5-locular.

Distribution. Papua New Guinea: Manus Prov., Manus I.

Habitat. Primary rain forest; c. 500 m.

49. *Astronidium raphidifolium* Maxw., *spec. nov.*

Arbor ad 7 m alta. Ramuli obscure quadrangulares teretescentes c. 8 mm diam., plerumque demum glabri, nigrescentes in sicco. Petioli 2,5–4,5 cm longi glabri. Laminae subcoriaceae anguste ellipticae ad oblongae 9–18 cm longae 4–7 cm latae, basi cuneato, apice acuto, costa uno pare nervorum 3–4 mm supra basin orienti, pare inframarginali tenuissimo, supra glabrae raphidibus multis, infra sparse minuteque lepidotae. Inflorescentiae corymbosae 14–15 cm longae, axibus robustis complanatis glabris. Alabastra tantum vidi, flores 5-meri. Calyx sparse lepidotus, tubo campanulato c. 3,5 mm longo, margine lobis 5 aequalibus rotundatis. Petala 5 libera. Stamina 10 aequalia, antheribus c. 2,5 mm longis, loculis tessellatis a c. 1 mm infra insertionem filamenti in pagina ventrali ad circa dimidio secus paginam dorsalem. Ovarium 4- vel 5-loculare. Capsulae seminaeque non vidi. — *T y p u s*: LAE 52381 (*Foreman*) (L, holo; BRI, LAE), Papua New Guinea, Manus I., Derimbat, rain forest by stream, 150 m alt., 30 June 1973.

Tree, up to 7 m tall. Branchlets obscurely quadrangular, becoming terete, c. 8 mm diam., usually glabrous with age, blackish when dry. Petioles 2.5–4.5 cm long, glabrous. *Blades* subcoriaceous, narrowly elliptic to oblong, 9–18 by 4–7 cm, base cuneate, apex acute, midrib with one pair of nerves from 3–4 mm above the base, inframarginal pair very thin, upper surface glabrous, with many raphids, lower surface sparsely and minutely lepidote. *Inflorescences* corymbose, 14–15 cm long, axes robust, flattened, glabrous. Flower buds seen only, flowers 5-merous. Calyx sparsely lepidote, tube campanulate, c. 3.5 mm long, margin with 5 equal, c. 0.5 mm long, rounded lobes. Petals 5, free. *Stamens* 10, equal, anthers c. 2.5 mm long, locules tessellate, from c. 1 mm below the insertion of the filament on the ventral surface to about midway along the dorsal surface. *Ovary* 4- or 5-locular. Capsules and seeds not seen.

Distribution. Papua New Guinea, Manus I.

Habitat. Rain forest near stream; c. 150 m alt.

50. *Astronidium robustum* (Seem.) A.C. Smith

Astronidium robustum (Seem.) A.C. Smith, *Sargentia* 1 (1942) 92. — *Astronia robusta* Seem., *Fl. Vit.* (1866) 86. — *Pharmacum robustum* O. Ktze, *Rev. Gen. Pl.* 3 (1898) 954. — *T y p e*: *Seemann 181* (K, holo), Fiji, Viu Levu, Namosi, Rewa River.

Distribution. Fiji (Taveuni, Viti Levu).

Habitat. Primary forests; 70–900 m.

51. *Astronidium saccatum* (J.W. Moore) Maxw., *comb. nov.*

Astronia saccata J.W. Moore, Bish. Mus. Bull. 102 (1933) 34. — T y p e: *J.W. Moore 86* (BISH, holo), Tahiti, Raiatea, Mt Temehani, 350 m, 16 September 1926.

D i s t r i b u t i o n. Society Islands (Huahine, Raiatea, Tahaa, Tahiti).

H a b i t a t. Mountain forests and open elfin scrub; 350–1000 m.

52. *Astronidium salomonense* Merr. & Perry

Astronidium salomonense Merr. & Perry, J. Arn. Arbor. 24 (1943) 437. — T y p e: *Kajewski 1703* (A, holo), Papua New Guinea, Bougainville, Kieta Gold Field, 1000 m, April 1930.

D i s t r i b u t i o n. Papua New Guinea, Bougainville.

H a b i t a t. Rain forests; 70–1000 m.

53. *Astronidium samoense* (S. Moore) Markgraf

Astronidium samoense (S. Moore) Markgraf, Not. Bot. Gart. Mus. Berlin-Dahlem 12 (1934) 49. — *Astronia samoensis* S. Moore in Britten, J. Bot. 18 (1880) 3. — *Naudiniella samoensis* Krasser in E. & P., Nat. Pfl. Fam. III, 7 (1893) 195. — *Pharmacum samoense* O. Ktze, Rev. Gen. Pl. 3 (1898) 954. — T y p e: *Whitmee 122* (K, holo), Samoa.

Astronia samoensis S. Moore forma *arborescens* Reinecke, Bot. Jb. 25 (1898) 662. — T y p e: *Reinecke 426* (WRSL, holo; E), Samoa, Savaii, Panafu, August 1894.

D i s t r i b u t i o n. Samoa (Savaii, Upolo).

H a b i t a t. Primary forests, often along streams; 275–850 m.

54. *Astronidium saulae* A.C. Smith

Astronidium saulae A.C. Smith, Pac. Sc. 25 (1971) 497. — T y p e: *Fiji Dept. Agric. (Vodonaivalu) 17273* (BISH, holo; SUVA), Fiji, Viti Levu, Rewa, S slope of Mt Korombamba, 200–300 m, 27 April 1970.

D i s t r i b u t i o n. Fiji (Viti Levu).

H a b i t a t. Forest margins; 200–300 m.

55. *Astronidium sessile* (A.C. Smith) A.C. Smith

Astronidium sessile (A.C. Smith) A.C. Smith, Sargentia 1 (1942) 93. — *Astronia sessilis* A.C. Smith, Bish. Mus. Bull. 141 (1936) 111, t. 58. — T y p e: *A.C. Smith 533* (BISH, holo; NY), Fiji, Vanua Levu, Thakaundrove–Mathuata boundary, crest of Korotini Range, between Navitho Pass and Mt Ndelaikoro, 650–900 m, 21 November 1933.

D i s t r i b u t i o n. Fiji (Vanua Levu).

H a b i t a t. Dry forest; 650–900 m.

56. *Astronidium sessilifolium* Merr. & Perry – Fig. 2a.

Astronidium sessilifolium Merr. & Perry, J. Arn. Arbor. 24 (1943) 437. — T y p e: *Waterhouse 193* (22983 serial number) (A, holo), Papua New Guinea, Bougainville, Siwai, no altitude known, January 1933.

Distribution. Papua New Guinea: Bougainville; Solomon Islands (Malaita).
Habitat. Primary and secondary rain forests; 50–900 m.

57. *Astronidium sinuosum* Maxw., spec. nov.

Arbor ad 7 m alta cortice scabro atrorubro. Ramuli obtuse quadrangulares demum tereti minute lepidoti. Petioli tereti dorsaliter anguste sulcati 8–22 mm longi sparse lepidoti glabrescentes. Laminae subcoriaceae ellipticae ad obovatae 9–16 cm longae 3,75–7 cm latae, basi cuneato decurrenti, apice acuminato, costa uno pare nervorum ad 10 mm supra basin orienti, pare inframarginali tenuiore, supra glabrae atrovirides in sicco brunneae, infra disperse lepidotae ad glabrae pallide virides in sicco pallide brunneae. Paniculae ad 6,5 cm longae, axibus quadrangularibus furfuraceae lepidotis. Pedicelli c. 1 mm longi. Bractee praecociter deciduae. Flores 5-meri terminaliter fasciculati alabastra et fructus juveniles tantum. Calyx adpresso lepidotus, tubo cyathiformi in medio constricto c. 2,75 mm longo, margine \pm truncato, lobis latis c. 0,1 mm longis, apice appanato. Petala in calyptra mammiformi c. 2,5 mm diam. alba coherentia, apice acuto suturis 5. Stamina 10 subaequalia, filamentis c. 1,5 mm longis, antheribus sinuatis elongatis, alternipetalibus c. 2,25 mm longis, oppositipetalibus c. 2 mm longis, loculis tessellatis latus ventrali tote tectis. Stylus c. 4 mm longus. Ovarium tubo calycis c. 0,5-plo longius, apice concavo laevi. Capsulae seminae n.v. — **T y p u s:** *Brass 1506* (SING, holo), Papua New Guinea, Central Prov., Owen Stanley Range, between Mt Brown and Mt Clarence, forest, c. 1500 m alt.

Tree, up to 7 m high, bark rough, dark red. Branchlets obtusely quadrangular, becoming terete, minutely lepidote. Petioles terete, dorsally narrowly grooved, 8–12 mm long, sparsely lepidote, glabrescent. *Blades* subcoriaceous, elliptic to obovate, 9–16 by 3.75–7 cm, base cuneate, decurrent, apex acuminate, midrib with 1 pair of nerves from up to 10 mm above the base, inframarginal pair thinner, upper surface glabrous, dark green, turning brown (i.s.), lower surface scattered lepidote to glabrous, pale green, turning pale brown (i.s.). *Panicles* up to 6.5 cm long, axes acutely quadrangular, furfuraceous lepidote. Bracts not seen, early caducous. *Flowers* 5-merous, terminally clustered, buds seen only. Calyx appressed lepidote, tube cyathiform, constricted about the middle, c. 2.75 mm long, margin \pm truncate, lobes broad, c. 0.1 mm long, apex flattened. Petals coherent into a mammiform calyptra, c. 2.5 mm diam., white, apex acute with 5 sutures. *Stamens* 10, subequal, filaments c. 1.5 mm long, anthers sinuate, elongated, the alternipetalous ones c. 2.25 mm long, the epipetalous ones c. 2 mm long, connective thickened, spurs prominent, c. 0.25 mm long, locules tessellate, covering the entire ventral surface. Style c. 4 mm long. *Ovary* c. 0.5 times as long as the calyx tube, apex concave, smooth. Capsules and seeds not seen.

Distribution. Papua New Guinea: Central Prov.

Habitat. Forest; c. 1500 m.

Note s. This species is distinct by the cyathiform calyx tube which is constricted about the middle, the nearly truncate margin, the calyptrate petals, and the sinuate anthers with tessellate locules.

Astronidium constrictum Maxw. is similar, but has the inframarginal nerves 2–4 mm above the base of the blade, free petals, and smooth locules. *Astronidium bracteatum* Maxw. has similar petals, in bud coherent into a calyptra, and tessellate locules, but differs by densely floccose-setose nodes and petiole bases and by margins of the calyx with slightly unequal and irregular, triangular, c. 1 mm long lobes.

There is a fruiting collection (*Hartley 13118*) resembling the type, but it is not clear whether it belongs to the same taxon.

58. *Astronidium storckii* Seem.

Astronidium storckii Seem., Fl. Vit. (1866) 87. — *Astronia storckii* [Seem., Bonplandia 10 (1862) 296, nomen]; Cogn. in DC., Monogr. Phan. 7 (1891) 1099. — *Pharmacum storckii* O. Ktze, Rev. Gen. Pl. 3 (1898) 954. — T y p e: *Storck 890* (K, holo), Fiji, Ovalau, Port Kinnaird, January 1861.

D i s t r i b u t i o n. Fiji (Ovalau, Viti Levu).

H a b i t a t. Dense forests; 30–1200 m.

59. *Astronidium subcordatum* (A. Gray) Christophersen

Astronidium subcordatum (A. Gray) Christophersen, Bish. Mus. Bull. 154 (1938) 33. — *Astronia* (?) *subcordata* A. Gray in Wilkes, U.S. Expl. Exped., Bot. Phan. (1854) 580 (as gen. nov.). — *Pharmacum subcordatum* O. Ktze, Rev. Gen. Pl. 3 (1898) 954. — T y p e: *Pickering s.n.* (US, holo), Samoa, Upolu, mountain near Apia.

D i s t r i b u t i o n. Samoa (Upolu).

H a b i t a t. Forests, along streams; c. 700 m.

60. *Astronidium subvaginatum* Ohwi

Astronidium subvaginatum Ohwi, Bot. Mag. Tokyo 57 (1943) 16, fig. W. — T y p e: *Kanehira & Hatusima 14105* (FU, holo, n.v.), Irian Jaya, Vogelkop Prov., Arfak Mts, Angi, Lake Gita, 1900 m, 10 April 1940.

D i s t r i b u t i o n. New Guinea, Irian Jaya: Vogelkop Prov.

H a b i t a t. In forests; c. 1900 m.

N o t e s. Although the type was not seen, *Kostermans 2087* (L, BO, n.v.) is apparently this species: it was collected in the same area and fits Ohwi's description well, especially in the presence of the two calli below the petiole, and the small ligules at its base, which more or less clasp the branchlets. The collection does differ slightly from Ohwi's description, while some characters may be added:

Shrublet, 2.5 m high. Ligule not leaving a corresponding patch on the adjacent branchlet, triangular, obtusish, glabrous inside, axillary bristles absent. Main nerves branching off 3–10 mm above the base. Peduncle c. 8.5 cm long, glabrous, panicle c. 4 cm long by 6 cm diam., branches glabrous, flowers in umbels, pedicels glabrous, slightly verruculose, 5–8 mm long. Flowers 5- or 6-merous. Calyx tube c. 4.25 mm long, margin at first with 5 or 6 accolade-shaped lobes, these c. 0.75 by 2.5 mm, obtuse, apiculate, at anthesis splitting into 3 irregular lobes, c. 6 mm long. Petals broadly elliptic to obovate, c. 8.5 by 5.5 mm, apex ± rounded. Stamens apparently persistently incurved at anthesis; filaments straight, c. 6.25 mm long; anthers straight, 2.25–2.75 mm long, smooth, spur c. 2.25 mm long. Style c. 7 mm long. — JFV.

61. *Astronidium sudestense* Maxw., *spec. nov.*

Arbor ad 8 m alta. Ramuli tereti c. 3,5 mm diam. sparse lepidoti plerumque demum glabri. Petioli 1,75–3 cm longi sparse lepidoti. Laminae subcoriaceae oblongae 7–12 cm longae 3,5–6 cm latae, basi cuneato, apice obtuso vel obtuse acuto, costa uno pare nervorum 3–4 mm supra basin orienti, pare inframarginali venatione reticulataque obscura nervis secundariis ± distinctioribus. Corymbi immaturi 4–6,5 cm longi, axibus quadrangularibus ad compressis dense minute adpresse brunnee lepidoti. Pedicelli c. 1,5 mm longi. Flores 6- vel 7-meri. Alabastra juvenia irregulariter findentia subglobosa ubi parum aperta c. 8 mm longa c. 7 mm diam. indumento ut in pedicellis. Petala 6 vel 7, libera. Stamina 12 vel 14 subaequalia, antheris linearibus c. 2,5 mm longis, loculis tessellatis ventraliter a insertione filamenti ad ± dimidium paginae dorsali extensis in oppositipetalibus, parum minus in alternipetalibus, calcari c. 1 mm longo. Ovarium 6- vel 7-loculare. Flores maturi capsulae seminaeque non vidi. — T y p u s : *Brass* 27951 (L, holo; A), Papua New Guinea, Milne Bay Prov., Sudest I., W slope of Mt Riu, rain forest substage, 300 m alt., 31 August 1956.

Tree, up to 8 m tall. Branches terete, c. 3.5 mm diam., sparsely lepidote, usually glabrous with age. Petioles 1.75–3 cm long, sparsely lepidote. *Blades* subcoriaceous, oblong, 7–12 by 3.5–6 cm, base cuneate, apex obtuse or bluntly acute, midrib with one pair of nerves from 3–4 mm above the base, inframarginal pair and reticulate venation obscure, secondary nerves slightly more distinct. Immature corymbs 4–6.5 cm long, axes quadrangular to flattened, densely minutely appressed, brown lepidote. Pedicels c. 1.5 mm long. *Flowers* 6- or 7-merous. Calyx buds splitting irregularly, subglobose when slightly open, c. 8 mm long by 7 mm diam., indument like the pedicels. Petals 6 or 7, free. *Stamens* 12 or 14, subequal, anthers linear, c. 2.5 mm long, locules tessellate, extending ventrally from the insertion of the filaments to about midway the dorsal side in the oppositipetalous ones, slightly less so in the alternipetalous ones, spur c. 1 mm long. *Ovary* 6- or 7-locular. Mature flowers, capsules, and seeds not seen.

Distribution. Papua New Guinea: Milne Bay Prov., Sudest Island.

Habitat. Rain forest substage; c. 300 m.

62. *Astronidium tomentosum* (Seem.) A.C. Smith

Astronidium tomentosum (Seem.) A.C. Smith, *Sargentia* 1 (1942) 10. — *Astronia tomentosa* Seem., *Fl. Vit.* (1886) 86. — *Pharmacum tomentosum* O. Ktze, *Rev. Gen. Pl.* 3 (1898) 954. — T y p e : *Seemann* 174 (K, holo; GH), Fiji, Viti Levu, Namosi, Voma Peak, 900–1000 m.

Distribution. Fiji (Viti Levu).

Habitat. Forests; 625–1000 m.

63. *Astronidium uncinato-tessellatum* Maxw., *spec. nov.*

Arbor 5–20 m alta caule 15–60 cm diam. Ramuli obscure quadrangulati ad tereti 4–5 mm diam. dense adpresse lepidoti. Petioli 2–4 cm longi indumento ut in ramulis. Laminae subcoriaceae ellipticae ad oblongae rare lanceolatae 8,5–20 cm longae 3–8 cm latae, basi acuto ad cuneato, apice acuminato ad rostrato, costa uno pare nervorum 5–7 mm supra basin orienti, pare inframarginali tenuiore, supra plerumque glabrae, infra sparse lepidotae nervis principalibus lepidotioribus. Corymbi ad 8,5 cm longi, axibus quadrangularibus ad complanatis dense lepidotis. Flores 5- vel 6-meri. Pedicelli c. 4 mm longi. Alabastra clavata, calycis tubus sub anthesi cyathiformis 4–4,5 mm longus

dense lepidotus, margine irregulariter truncato rimoso lobatove. Petala parte 2/3 infera coherentia c. 3,5 mm longa alba. Stamina 10 vel 12 subaequalia, antheris J-formibus c. 3 mm longis, loculis tessellatis secus paginam ventralem, calcari tenui, complanato, c. 1 mm longo, apice obliquo. Ovarium 5- vel 6-loculare. Capsulae subglobose urceolatae 4–5 mm longae 5–5,5 mm diam. sparse lepidotae, areola circulari. Semina cuneata c. 1 mm longa truncata. — *T y p u s*: *BSIP 7676 Beer's collectors* (SING, holo; HON, L, US), Solomon Islands, Santa Isabel (Ysabel) Island, SE part, Daldale Bay, primary forest, 29 August 1966.

Tree, 5–20 m tall, bole 15–60 cm diam. Branchlets obscurely quadrangular to terete, 4–5 mm diam., densely appressed lepidote. Petioles 2–4 cm long, pubescent as the branchlets. *Blades* subcoriaceous, elliptic to oblong, rarely lanceolate, 8,5–20 by 3–8 cm, base acute to cuneate, apex acuminate to rostrate, midrib with one pair of nerves from 5–7 mm above the base, inframarginal pair thinner, upper surface usually glabrous, lower surface sparsely lepidote, more so on the main nerves. Corymbs up to 8.5 cm long, axes quadrangular to flattened, densely lepidote. Pedicels c. 4 mm long. *Flowers* 5- or 6-merous. Calyx buds clavate, tubes in flower cyathiform, 4–4.5 mm long, densely lepidote, margin irregularly truncate and cracked or lobed. Petals coherent in the lower two thirds, c. 3.5 mm long, white. *Stamens* 10 or 12, subequal, anthers J-shaped, c. 3 mm long, locules tessellate, extending along the ventral surface, spur thin, linear, flattened, c. 1 mm long, apex oblique. *Ovary* 5- or 6-locular. Capsules subglobose urceolate, 4–5 mm long by 5–5.5 mm diam., sparsely lepidote, areole circular. Seeds cuneate, c. 1 mm long, truncate.

D i s t r i b u t i o n. Papua New Guinea: Bougainville; Solomon Islands (Baga, Barora Ite, Big Nggela, Choiseul, Ganongga, Guadalcanal, Kolombangara, New Georgia, Rore Big Nggela, Santa Isabel, Vangunu).

H a b i t a t. Well-drained primary forests, volcanic rock with red clay or loam soil; 30–750 m.

64. *Astronidium vaginato-villosum* Maxw., *spec. nov.*

Arbor ad 20 m alta, caule ad 30 cm diam. Ramuli obscure quadrangulati ad tereti 3–6 mm diam. moderate brunneo-furfuraceis. Petioli 12–35 mm longi dorsaliter vaginati sulco villosio ceterum glabri. Laminae subcoriaceae oblongae 6–16 cm longae 2,5–6 cm latae, basi cuneato, apice acuminato, costa uno pare nervorum 2–14 mm supra basin orienti, pare inframarginali tenuiore, supra glabrae, infra indumento ut in ramulis. Inflorescentiae corymbosae 5–8,5 cm longae, axibus quadrangularibus compressisque indumento ut in ramulis. Flores 5–8-meri. Alabastra subglobose incrassata c. 8 mm longa c. 7 mm diam. glabra apicaliter irregulariter dehiscentia, calycis tubo sub anthesi campanulato c. 8 mm longo c. 8 mm diam., margine irregulariter truncato. Petala libera. Stamina subaequalia, antheris J-formibus c. 4,5 mm longis in alabastris maturis, loculis laevibus secus paginam ventralem, calcari 1,5 mm longo, parte uncinata oppositipetalium c. 2 mm longa, alternipetalium c. 1 mm longa. Ovarium 5–8-loculare. Capsulae seminae non vidi. — *T y p u s*: *Schodde & Craven 3779* (L, holo; CANB, LAE), Papua New Guinea: Bougainville, S slope of Lake Loluru, c. 17 miles N of Buin, primary rain forest, c. 870 m alt., 6 August 1964.

Tree, up to 20 m tall, bole up to 30 cm diam. Branchlets obscurely quadrangular to terete, 3–6 mm diam., moderately brown furfuraceous. Petioles 12–35 mm long, dorsally vaginate, groove villous, otherwise glabrous. *Blades* subcoriaceous, oblong, 6–16 by 2.5–6 cm, base cuneate, apex acuminate, midrib with one pair of nerves from 2–14 mm above the base, inframarginal pair thinner, upper surface glabrous, lower surface pubescent as the branchlets. *Inflorescences* corymbose, 5–8.5

cm long, axes quadrangular and compressed, pubescence like the branchlets. Flowers 5–8-merous. Calyx buds subglobose, thickened, c. 8 mm long by 7 mm diam., glabrous, apically splitting irregularly, tubes campanulate in flower, c. 8 mm long by 8 mm diam., margin irregularly truncate. Petals free. *Stamens* subequal, anthers J-shaped, c. 4.5 mm long in mature buds, locules smooth, along the ventral side, spur c. 1.5 mm long, hooked part of the oppositipetalous ones c. 2 mm long, of the alternipetalous ones c. 1 mm long. *Ovary* 5–8-locular. Capsules and seeds not seen.

Distribution. Papua New Guinea: Bougainville.

Habitat. Primary rain forests; 870–1830 m.

65. *Astronidium vanikoroense* Maxw., *spec. nov.*

Arbor ad 15 m alta. Ramuli robusti tereti 8–9 mm diam., squamulis minutis brunneis dense tecti. Petioli dorsaliter sulcati 2,5–4,5 cm longi indumento ut in ramulis. Laminae subcoriaceae ellipticae ad oblongae 14–26 cm longae 5,5–9 cm latae brunneae (i.s.), basi acuto ad cuneato decurrentique, apice acuminato, costa uno pare nervorum 6–10 mm supra basin orienti, pare inframarginali tenuiore basali, supra glabrae raphidibus distinctis (i.s.) viride brunneae (i.s.), infra dilute brunneae (i.s.) squamulis puberulis in nervis principalibus. Inflorescentiae corymbosae multiflorae ad c. 7 cm longae, axibus quadrangulatis ad compressis indumento ut in ramulis. Flores 5-meri, alabastra immatura tantum vidi ellipsoidea c. 2,5 mm longa c. 1,5 mm diam. indumento ut in ramuli. Petala libera. Antherae lineares c. 0,75 mm longae, oculis paginam ventralem omnino tectis circa apicem distalem et per paginam dorsalem breviter extensis, calcari prominenti. Ovarium 5-loculare. Fructus semina non vidi. — *T y p u s*: *BSIP 1676 (Whitmore)* (SING, holo; HON, L), Solomon Islands, Santa Cruz Group, Vanikoro, S coast at Emwa, ridge forest, c. 350 m alt., 8 April 1963.

Tree, up to 15 m. Branchlets robust, terete, 8–9 mm diam., densely covered with minute brown scales. Petioles dorsally grooved, 2.5–4.5 cm long, pubescence like the branchlets. *Blades* subcoriaceous, elliptic to oblong, 14–26 by 5.5–9 cm, brown (i.s.), base acute to cuneate and decurrent, apex acuminate, midrib with one pair of nerves from 6–10 mm above the base, inframarginal nerves thinner and basal, upper surface glabrous, raphids distinct (i.s.), greenish brown (i.s.), lower surface pale brown (i.s.), with minute puberulous scales on the main nerves. *Inflorescences* corymbose, many-flowered, up to c. 7 cm long, axes quadrangular to compressed, pubescence like the branchlets. *Flowers* 5-merous, only buds seen. Closed, very immature buds ellipsoid, c. 2.5 mm long by 1.5 mm diam., pubescence like the branchlets. Petals free. Anthers linear, c. 0.75 mm long, locules smooth, covering the entire ventral surface and extending around the distal tip and shortly on to the dorsal side, spur prominent. *Ovary* 5-locular. Capsules and seeds not seen.

Distribution. Solomon Islands (Vanikoro).

Habitat. Primary rain forests; 350–1830 m.

66. *Astronidium variabile* Maxwell, *spec. nov.*

Arbor 5–10 m alta. Ramuli tereti 3–4 mm crassi. Petioli 7–25 mm longi. Laminae subcoriaceae oblongae 8,5–20 cm longae 3–7 cm latae, basi acuto ad cuneato, apice acuminato, costa uno pare nervorum 5–10 mm supra basin orienti, pare inframarginali tenuiore, supra glabrae. Inflorescentiae cymosae 3,5–7,5 cm longae, axibus quadrangulatis ad complanatis. Flores 5-meri. Calyx indumento ut in ramulis, tubo campanulato ad subinfundibulari 3–4 mm longi, margine initio

lobis irregularibus late rotundatis ad 1 mm longis, maturitate irregulariter truncato rimoso. Petala in parte 2/3 infera coherentia c. 4,5 mm longa. Stamina 10 subaequalia, antheris linearibus leviter curvatis c. 3 mm longis, loculis tessellatis paginam ventralem omnino tectis circa apicem distalem et per paginam dorsalem breviter extensis, calcari prominenti anguste c. 0,75 mm longo apice oblique truncato. Ovarium 5-loculare. Capsulae subglobose-urceolatae c. 4,5 mm longae c. 4 mm diam., areola circulari. Semina linearia, cuneata c. 1 mm longa truncata papillosa. — **T y p u s:** *Brass* 27130 (US, holo; A, L), Papua New Guinea, Milne Bay Prov., Fergusson I., mountains between Agamoia and Ailului, oak forest, 900 m alt., 13 June 1956.

Tree, 5–10 m tall. Branchlets terete, 3–4 mm diam. Petioles 7–25 mm long. *Blades* subcoriaceous, oblong, 8,5–20 by 3–7 cm, base acute to cuneate, apex acuminate, midrib with one pair of nerves from 5–10 mm above the base, inframarginal pair thinner, upper surface glabrous. *Inflorescence* cymose, 3,5–7,5 cm long, axes quadrangular to flattened. *Flowers* 5-merous. Calyx pubescent like the branchlets, khaki-coloured, tube campanulate to \pm funnellform, 3–4 mm long, margin at first with irregular, broadly rounded, up to 1 mm long lobes, at maturity irregularly truncate and cracked. Petals coherent in the lower two thirds, c. 4,5 mm long. *Stamens* 10, subequal, anthers linear and \pm curved, c. 3 mm long, locules tessellate, covering the entire ventral side and extending around the distal tip and shortly along the dorsal side, spur prominent, narrow, c. 0,75 mm long, apex obliquely truncate. *Ovary* 5-locular. Capsules subglobose-urceolate, c. 4,5 mm long by 4 mm diam., areole circular. Seeds linear, cuneate, c. 1 mm long, truncate, papillose.

a. *Astronidium variabile* var. *variabile*.

Ramuli, petioli, inflorescentiae infructescentiaeque axes, bracteae bracteolaeque sparse minute furfuraceae lepidoti ad glabri. Laminae infra glabrae vel squamulis paucis lepidotis in nervis principalibus.

Branchlets, petioles, axes of inflorescences and infructescences, bracts, and bracteoles sparsely minutely furfuraceous lepidote to glabrous. *Blades* below glabrous or with a few scattered scales on the main nerves.

D i s t r i b u t i o n. Papua New Guinea: Milne Bay Prov. (Fergusson, Normanby I.).

H a b i t a t. Understorey in mossy or oak rain forest; 820–900 m.

b. var. *papillosum* Maxw., var. *nov.*

A var. *typica* in ramulis petiolis inflorescentiae infructescentiaeque axibus bracteis bracteolis indumento denso tenui patenti papilloso tecto, papillis dispersis in nervis principalibus paginae inferioris differt. — **T y p u s:** *Brass* 27361 (US, holo; A, L), Papua New Guinea, Milne Bay Prov., Misima I., N slopes of Mt Sisa, rain forest, 350 m alt., 18 July 1956.

Differs from var. *variabile* by the dense cover of thin, spreading, papillose hairs on the branchlets, petioles, axes of the inflorescences and infructescences, bracts and bracteoles, and by the scattered papils on the main nerves of the lower side of the blades.

D i s t r i b u t i o n. Papua New Guinea: Milne Bay Prov. (Misima I.).

H a b i t a t. Understorey in rain forest; c. 350 m.

67. *Astronidium victoriae* (Gillespie) A.C. Smith

Astronidium victoriae (Gillespie) A.C. Smith, *Sargentia* 1 (1942) 91. — *Astronia victoriae* Gillespie, *Bish. Mus. Bull.* 83 (1931) 25, t. 32. — T y p e: *Gillespie 4101* (BISH, holo; GH, UC), Fiji, Viti Levu, Tholo North, Mt Victoria, 1200 m, 29 November 1927.

D i s t r i b u t i o n. Fiji (Moala, Ovalau, Vanua Levu, Viti Levu.).

H a b i t a t. Primary rain forests; 50–1200 m.

BECCARIANTHUS

Beccarianthus Cogn. in Boerl., *Handl. Fl. Ned.-Ind.* 1 (1890) 525; in DC., *Monogr. Phan.* 7 (1891) 1101. — T y p e: *Beccarianthus pulcher* Cogn.

Bamlera K. Schum. & Lauterb., *Fl. Deutsch. Schutzgeb. Südsee* (1900) 481, t. 17. — T y p e: *Bamlera insignis* K. Schum. & Lauterb. (= *Beccarianthus insignis* Maxw. & Veldk.).

Everettia Merr., *Philip. J. Sc., Bot.* 8 (1913) 356, t. 12. — T y p e: *Everettia pulcherrima* Merr. (= *Beccarianthus pulcherrimus* Maxw.).

N o t e s. This genus could only be partially studied. There are still perhaps no less than 12 undescribed species, but as the study had to be discontinued rather abruptly, only one is described here. A few new combinations are given.

Two species have been described in *Bamlera*. Fortunately, a fragment of the type of the type species, *B. insignis* K. Schum. & Lauterb., is preserved in WRS� from which the generic identity could be deduced. It is clearly a *Beccarianthus*. The identity of the other species is unknown.

1. *Beccarianthus acutifolius* (Mansf.) Maxw., *comb. nov.*

Everettia acutifolia Mansf., *Bot. Jb.* 60 (1925) 137. — *Astronidium acutifolium* Markgraf, *Not. Bot. Gart. Mus. Berlin-Dahlem* 12 (1934) 49. — S y n t y p e s: *Ledermann 8988, 9240* (B, not extant), Papua New Guinea, E Sepik Prov., Etappenberg (= Camel Back, 142° 27' E, 4° 37' S), 850 m, resp. 3 and 14 October 1912.

D i s t r i b u t i o n. Papua New Guinea: E Sepik Prov.

H a b i t a t. Rain forest; c. 850 m.

2. *Beccarianthus ickisii* Merr.

Beccarianthus ickisii Merr., *Philip. J. Sc., Bot.* 8 (1913) 358. — T y p e: *Merrill 7342* (PNH, holo, not extant; BO), Philippines, Mindanao, Butuan, Agusan Valley, 50 m, 2 October 1910.

Beccarianthus ickisii Merr. var. *setosus* Merr., *Philip. J. Sc., Bot.* 10 (1915) 278. — T y p e: *Wenzel 1015* (PNH, holo, not extant; A, MO), Philippines, Leyte, Buenavista near Jaro, 500 m, 13 July 1914.

D i s t r i b u t i o n. Philippines: Luzon, Catanduanes, Samar, Leyte, Panay, Mindanao, Siargao.

H a b i t a t. Moist primary forests; 50–500 m.

3. *Beccarianthus insignis* (K. Schum. & Lauterb.) Maxw., *comb. nov.*

Bamleria insignis K. Schum. & Lauterb., Fl. Deutsch. Schutzgeb. Südsee (1900) 481, t. 17. — Type: *Bamler II 21* (B, holo, destroyed; WRSL), Papua New Guinea, Morobe Prov., Sattelberg, 18 December 1898.

Distribution. Papua New Guinea: Morobe Prov.

Habitat. Not indicated.

4. *Beccarianthus octodontus* (Merr.) Maxw., *comb. nov.*

Everettia octodonta Merr., Philip. J. Sc., Bot. 13 (1918) 315. — Type: *BS 30556 (Ramos)* (PNH, holo, not extant; US), Philippines, Catanduanes, St Domingo R., low altitudes, 3 Dec. 1917.

Distribution. Philippines: Catanduanes.

Habitat. Lowland forest.

5. *Beccarianthus puberulus* (Merr.) Maxw., *stat. nov.*

Beccarianthus ickisii Merr. var. *puberula* Merr., Philip. J. Sc., Bot. 12 (1917) 343. — Type: *BS 29230 (Ramos & Edaño)* (PNH, holo, not extant; US), Philippines, Luzon, Tayabas, Infanta-Siniloan trail, 12 June 1917.

Distribution. Philippines: Luzon.

Habitat. Damp primary forest on ridge at low altitude.

6. *Beccarianthus pulcher* Cogn.

Beccarianthus pulcher Cogn. in DC., Monogr. Phan. 7 (1891) 1102. — Type: *Beccari PB 4024* (FI, holo, n.v.), Sarawak, Bintulu, A° 1867.

Distribution. Sarawak.

Habitat. Secondary forests; c. 100 m.

7. *Beccarianthus pulcherrimus* (Merr.) Maxw., *comb. nov.*

Everettia pulcherrima Merr., Philip. J. Sc., Bot. 8 (1913) 357, t. 12. — Type: *FB 4690 (Mearns & Hutchinson)* (PNH, holo, not extant; US), Philippines, Mindanao, Misamis, Mt Malindang, 1400 m, May 1906.

Distribution. Philippines: Catanduanes, Samar, Leyte, Negros, Mindanao.

Habitat. Primary forests; 300–1400 m.

8. *Beccarianthus robustus* Nayar

Beccarianthus robustus Nayar, J. Bomb. Nat. Hist. Soc. 66 (1969) 229, t. — Type: *BW 6260 (Kalkman)* (K, holo; A, BO, L, SING), Irian Jaya, Vogelkop Prov., Beriat, 12 km S of Teminabuan, 10 m, 20 April 1958.

Distribution. New Guinea, Irian Jaya: Vogelkop Prov.

Habitat. Primary rain forest undergrowth on sandy-loamy soil; c. 10 m.

9. *Beccarianthus rufo-lanatus* Maxw., *spec. nov.*

Arbor ad 12 m alta, caule ad 8 m longo. Ramuli obtuse quadrangulares demum tereti 3–4 mm crassi indumento lanato pilorum simplicium patentium laevium porphyreorum dense tecti. Petioli 1,5–4,5 cm longi indumento ut in ramulis. Laminae chartaceae ellipticae ad oblongae 10–20 cm longae 5,5–9 cm latae, basi acuto ad rotundato, apice acuminato, costa uno pare nervorum 5–7 mm supra basin orienti, pare inframarginali tenuiore, supra nervis principalibus sparse lanatis, infra eisdem dense alibi sparse lanatis. Corymbi c. 12 floribus, c. 7 cm longi, axibus calycibusque indumento ut in ramulis. Alabastra clausa tantum vidi. Flores 5- vel 6-meri. Calycis tubus subglobosus c. 4 mm longus c. 3,5 mm diam., lobis 5 vel 6, c. 1 mm longis. Petala 5 vel 6 libera. Stamina 10 vel 12, loculis antherarum secus paginam ventralem. Ovarium 5–8-loculare. Capsulae subglobosae 11–12 mm longae 12–13 mm diam., indumento ut in ramulis, lobis apice late rotundato c. 7 mm longis c. 6 mm latis, apice fructus c. 6 mm infra basin loborum. Semina cuneata 1,25–1,5 mm longa truncata. — T y p u s: *Hoogland & Craven 10832* (L, holo; A, BRI, CANB, K, LAE), Papua New Guinea, E Sepik Prov., E ridge of Mt Sumset (Mt Hunstein), lower montane rain forest, c. 1300 m alt., 20 August 1966.

Tree, up to 12 m tall, bole to 8 m high. Branchlets bluntly quadrangular, becoming terete, 3–4 mm diam., densely covered with an indument of simple, smooth, spreading, red-brown hairs. Petioles 1.5–4.5 cm long, indument like the branchlets. *Blades* chartaceous, elliptic to oblong, 10–20 by 5.5–9 cm, base rounded to acute, apex acuminate, midrib with one pair of nerves 5–7 mm above the base, inframarginal pair thinner, upper surface with sparsely lanate main nerves, lower surface densely lanate on the main nerves, otherwise sparsely so. *Corymbs* with c. 12 flowers, c. 7 cm long, pubescence of the axes like the branchlets. *Flowers* 5- or 6-merous. Buds seen only. Calyx: pubescence like the branchlets, tube subglobose, c. 4 mm long by 3.5 mm diam., lobes 5 or 6, c. 1 mm long. Petals 5 or 6, free. *Stamens* 10, anthers with the locules along the ventral surface. *Ovary* 5–8-locular, placentae ascending. Capsules subglobose, pubescence like the branchlets, 11–12 mm long by 12–13 mm diam., lobes c. 7 by 6 mm, apex broadly rounded; top of fruit, c. 6 mm below the base of the lobes. Seeds cuneate, 1.25–1.5 mm long, truncate.

Distribution. Papua New Guinea: E Sepik Prov.

Habitat. Montane rain forest; c. 1300 m.

DUBIOUS OR EXCLUDED TAXA

1. *Astronia hatusimae* Ohwi, Bot. Mag., Tokyo 57 (1943) 17. — T y p e: *Kanehira & Hatusima 12172* (FU, holo, n.v.), Irian Jaya, Vogelkop Prov., Nabire, Dallmann, 500 m, 2 March 1940. = ?
2. *Astronia membranacea* Merr., Univ. Calif. Publ. Bot. 15 (1929) 227. — *Astronidium membranaceum* Markgraf, Not. Bot. Gart. Mus. Berlin-Dahlem 12 (1934) 49. — T y p e: *Elmer 21107* (PNH, holo, not extant; A, BR, C, CAL, G, GH, HBG, K, L, NY, S, U), Sabah, near Tawao, swampy forests, October 1922/ March 1923. = *Ochthocharis paniculata* Korth. [fide Hansen & Wickens, Kew Bull. 36 (1981) 20].

3. *Astronia novoguineensis* Mansf., Bot. Jb. 60 (1925) 131. — **T y p e:** *Ledermann 12624* (B, holo, not extant), Papua New Guinea, E Sepik Prov., Fels Spitze (= Rocky Peak, 141° 28' E, 4° 10' S), 1400–1500 m, 5 August 1913. = ? (Mansfeld himself suggested it could be identical with *Astronia papuana*).
4. *Astronia stuhlmannii* (H. Hall.) Prain, Index Kew., Suppl. 3 (1908) 21, sphalm. = *Astrochlaena stuhlmannii* Damm, ex H. Hall. (Convolvulaceae).
5. *Astronidium lepidotum* A.C. Smith, Pac. Sc. 23 (1969) 386. — **T y p e:** *Fiji Dept. Agric. (Quoro & Kuruvoli) 13640* (BISH, holo, n.v.; SUVA, n.v.), Fiji, Viti Levu, Tailevu, Waimaro River, near Copper Mine, lowland, 15 January 1964. = ?
6. *Bamleria tenuifolia* Mansf., Bot. Jb. 60 (1925) 142. — **T y p e:** *Schlechter 17833* (B, holo, not extant), Papua New Guinea, Madang Prov., Kani Gebirge (Finisterre Range), 1000 m, 13–18 July 1908.
N o t e. This is no doubt a *Beccarianthus*, but in the absence of matching material we refrain from making the combination.
7. *Everettia nigrescens* Mansf., Bot. Jb. 60 (1925) 136. — *Astronidium nigrescens* Markgraf, Not. Bot. Gart. Mus. Berlin-Dahlem 12 (1934) 49. — **S y n t y p e s:** *Ledermann 11660, 11837, 12112* (B, not extant), Papua New Guinea, Madang Prov., Schraderberg (= Schrader Mt, 144° 5' E, 4° 58' S), 2070 m, resp. 27 May 1913, 31 May 1913, 7 June 1913.
N o t e. This is no doubt a *Beccarianthus*, but in the absence of matching material we refrain from making the combination.

ACKNOWLEDGEMENTS

This study was made while the first author (JFM) was with the Botanic Gardens, Singapore (SING). It was his last research project there. He would like to thank the Curators, Directors, and Keepers of the following herbaria for the kind loan of their material: A, BISH, BM, BO, CAL, E, FI, KEP, KLU, L, MO, NY, PNH, SAN, SAR, TAI, TAIF, US, and Z. The second author (JFV) made the Latin translations, checked the literature, provided some additional notes from his own manuscripts, and worked up the manuscript to its present shape.

IDENTIFICATION LIST

Only numbered or dated collections have been included. Serial abbreviations have been omitted. Because the species of the genera involved are so easily confused in the herbaria, an overall list is here given. Some specimens of *Beccarianthus* belonging to probably undescribed species have been included as 'bec.sp.'. The numbers after the following abbreviations refer to those of the species:

asa. = *Astronia*; asd. = *Astronidium*; ast = *Astrocalyx*; bec. = *Beccarianthus*.

Achmad 604: asa.22 — Aet & Idjan 309: asd.21; 310: asa.24 — Agruda 9691: asa.42b — Ahern 344: asa.54; 517: asa.59a — Ahern's collector 83: asa.42a; 2163: asa.42a; 3097: asa.41 — Ahmadali A° 1905: asa.22; 58: asa.22 — Alabazo 3634: asa.55 — Alcasid & Edaño 4497:

asa.49a; 4651: asa.59a — Alcasid et al. 1649: asa.42b — d'Alleizette 2480: asd.19 — Amarillas 24671: ast; 25813: asa.37c — J.A.R. Anderson 4203: asa.57 — T. Anderson 90: asa.31; 91: asa.31 — Argent 1095: asd.26.

Baker 2413: asa.37a; 2657: asa.59a; 2792: asa.51; 2795: asa.42b; 2817: asa.47a; 2873: asa.51 — Balakrishnan 3044: asa.22; 3944: asa.22 — Balata 2: asa.58 — van Balgooy 1709: asd.19 — Balugan et al. 72574: asa.51 — Barber 19688: asa.51 — Bartlett 15/6/1893: asa.57; 3643: asa.42a; 15823: asa.59a — Beccari PB 4024: bec.6; PP 724: asa.4; PP 866: asa.24; PS 824: asa.22 — Beer's collectors 6651: asd.33; 6696: asd.33; 6829: asd.43; 7076: asd.43; 7264: asd.7; 7310: asd.32; 7676: asd.63 — Beguin 692: asa.15; 1573: asa.15 — Bernardi 12920: asd.37; 13321: asd.37 — Boeca 9333: asa.22 — Borden 750: asa.41 — Borgmann 193: bec.sp. — Boschwezen 291: asa.16 — Bower 443: asa.18 — Bowers 641: asa.21 — Brass 1506: asd.57; 3035: asd.35a; 3688: asd. aff. 39; 3889: asd.8; 4953: asa.3; 6608: asa.2; 6820: asa.2; 12695: asd.39; 13292: asa.25; 13312: asd.39; 13454: asa.25; 13671: asa.25; 22448: asa.3; 23032: bec.sp.; 23294: bec.sp.; 25088: asa.15; 25804: asd.66a; 27130: asd.66a; 27361: asd.66b; 27413: bec.sp.; 27539: bec.sp.; 27843: bec.sp.; 27951: asd.61; 28312: bec.sp.; 28400: asd.35b; 28457: bec.sp.; 28702: asa.26; 28921: asd.26; 29152: asa.18; 29591: asa.3; 29730: bec.sp.; 30294: asa.3; 30358: bec.sp.; 30857: asa.1; 31759: bec.sp.; 31800: bec.sp. — Brass & Versteegh 10466: asa.3; 11151: asa.3; 11919: asa.3; 11937: asa.3 — Brinkman 766: asa.31 — Bristol 2282: asd.53; 2299: asd.53; 2437: asd.25; 2442: asd.25 — Britton 191: asa.58; 265: asa. 41; 378: asa.50a; 19490: asa.58 — Brown 22228: asa.52 — Brownlie et al. 17357: asd.54 — Bryan 92: asd.45; 314: asd.67; 365: asd.11 — Burn-Murdoch's collectors 7166: asd.33; 7422: asd.33.

Cailipan 26951: ast — Canfield 635: asd.41 — Carr 11987: asa.6; 12048: asa.6; 13176: asa.15; 13247: asa.21; 13401: asa.18; 13504: asa.21; 13783: asa.35; 14195: asd.12; 14506: asa.18; 15186: asd.16; 15371: asa.18; 16002: asa.21; 27048: asa.55; 27072: asa.55 — Castro 5771: asa.59a; 5777: asa.50a — Celestino 4381: asa.40; 7876: asa.42a — Celestino & Castro 1992: asa.59a — Cenabre 25528: asa.59a — C.-E. Chang 2337: asa.45; 9081: asa.45 — Chew & Corner 4245: asa.55; 7017: asa.55 — Chew, Corner & Stainton 55: asa.22; 277: asa.22; 1222: asa.22 — Christophersen 636: asd.53; 1047: asd.45; 1059: asd.36; 1064: asd.45; 1070: asd.36; 3168: asd.53; 3507: asd.45; 3509: asd.36; 3534: asd.36 — Christophersen & Hume 1987: asd. 36; 1990: asd.36; 2003: asd.53; 2072: asd.36; 2278: asd.53 — Chuang 1183: asa.45 — Chuang & Kao 3408: asa.45 — Clemens 145: asa.20; 313: asa.20; 460-A: asa.18; 2945: bec.sp.; 3088: asa.34; 3621: bec.sp.; 4532: asa.21; 4532-A: asa.21; 4648: bec.sp.; 7613: asa.1; 7650: asa.1; 8984: asa.1; 11161: asa.18; 17212: asa.52; 26346: asa.22; 26525: asa.55; 27574: asa.55; 28069: asa.55; 29552: asa.55; 30342: asa.45; 31617: asa.55; 32041: asa.55; 32699: asa.55; 32827: asa.55; 51840: asa. 52 — Clunie & Larivita 63157: asa.21 — Cockburn 83113: asa.55; 83309: asa.55 — Concklin & Buwaya 78633: asa.49a; 80590: asa.52 — Concklin & del Rosario 42689: asa.42b; 72619: asa.51; 72669: asa.52 — Coode & Katik 40358: asa.42b — Coode & Lelean 46075: asa.13 — Coode, Sands & Lelean 46104: asd.26 — Corner 128: asd.3 — Cowmeadow 3138: asd.43; 3193: asd.33; 3695: asd.32 — Cowmeadow's collectors 3248: asd. 63; 3762: asd.33; 4781: asd.32 — Cowmeadow & Teona 2513: asd.63; 2528: asd.33 — Craven & Schodde 2: asd.56; 68: asd.63; 1084: asa.27; 1202: bec.sp.; 1295: asd.13; 1307: asa.27; 1432: asa.12 — Croft 65332: bec.sp. — Croft & Katik 13187: asd.31; 15541: asd.31 — Croft & Lelean 34955: asa.18; 34957: asa.12; 65430: asd.sp. — Croft & Vinas 34851: asa.18 — Croft et al. 60631: asa.sp.; 60886: asa.21 — Cuming 850: asa.41; 999: asa.42a; 1723: asa.54 — Curran 13170: asa.59a; 17180: asa.54; 17203: asa.50a; 19268: asa.37c — Curran & Merritt 7903: asa.37a — Curtis 743: asa.57.

Darbyshire 894: asa.26 — Darbyshire & Hoogland 8030: asa.4; 8345: bec.sp.; 8348: asa.12 — Darling 14812: asa.42a; 14851: asa.42a — Degener 14798: asd.67; 15279: asd.14; 32066: asd.11; 32156: asd.11 — Degener & Ketewai 32066: asd.11 — Degener & Ordonez 13745: asd.58 — Dennis & collectors 8518: asd.7; 8533: asd.7 — Dillewijn 710: asa.31 — Dissing 2402: asd. aff.38 — Docters van Leeuwen 10051: asa.18.

Edaño 8: asa.37b; 1060: asa.39; 1452: asa.44; 1552: asa.39; 3258: asa.52; 6708: asa.52; 6781: asa.54; 6809: asa.59a; 7120: asa.50a; 7203: asa.52; 12011 asa.37a; 12130: asa.50a; 19182: asa.42b; 19785: asa.51; 19790: asa.52; 19812: asa.42b; 34467: asa.59a; 37133: asa.59a; 41780: bec.7; 41794: asa.37a; 46185: asa.41; 76197: asa.52; 77494: asa.37b; 78364: asa.49a; 78368: asa.37c; 78410: asa.49a; 78455: asa.42b; 79122: asa.52; 79363: asa.37c; 79392: asa.50a; 79413: asa.59a; 79449: asa.37a; 79510: asa.37a — Edaño & Gutierrez 37806: asa.41; 38502: asa.52 — Elmer 1355: asa.44; 6011: asa.42a; 6055: asa.42a; 6294: asa.47; 6827: asa.52; 7439: asa.51; 7440: asa.59a; 7448: asa.54; 7450: asa.37a; 7703: asa.42a; 7807: asa.54; 8104-A: asa.37a; 8925: asa.42a & asa.58; 9313: asa.51; 9314: asa.58; 9688: asa.50a; 10225: bec.6; 10234: asa.52; 10356: asa.52; 10373: asa.42a; 11425: bec.7; 11426: asa.44; 11427: asa.39; 11630: asa.52; 12281: asa.58; 12518: asa.46; 13685: asa.59a; 13786: asa.37a; 13934: asa.59a; 14509: asa.52; 14690: bec.2; 14979: asa.41; 15742: asa.42b; 16107: asa.52; 16108: asa.42b; 16218: asa.52; 16233: asa.52; 16350: asa.58; 16382: asa.51; 16388: asa.37a; 16514: bec.2; 16526: asa.49a; 16647: asa.59a; 17036: asa.41; 17072: asa.49a; 17345: asa.59a; 17479: asa.49a; 17533: asa.42b; 17628: asa.42b; 17629: asa.51; 17719: asa.59a; 17808: asa.52; 17811: asa.49a; 17849: asa.41; 17964: asa.42a; 18032: asa.52; 18151: asa.49a; 18430: asa.59a; 18473: asa.42a; 22065: asa.41 — Ender 3932: asa.57 — Engels 195: asa.31 — B. Everett 14045: asa.22 — H.D. Everett 4298: asa.50a — Eyma 3020: asa.23; 3211:L asa.33.

Fisher 75: asd.13 — Flenley 2072: bec.sp.; 2442: asa.17; 2570: asa.aff.32 — Floyd 7499: asa.18 — Floyd & Womersley 6782: asa.1 — Forbes 758: asa.2; 806: asa.2; 908: asa.31; 986-A: asa.31; 3007: asa.22 — Foreman 45692: asd.22; 52381: asd.49 — Foreman & Katik 59200: asd.18 — Foreman & Kumul 48279: asa.21 — Foreman et al. 60029: asa.18 — Forman 256: asa.19 — Foxworthy 7: asa.59a; 14: asa.41 — Frake 37955: asa.42a — Frodin 4168: asa.13; 26285: asd.aff.26; 26286: asd.24; 26887: asd.5; 28155: bec.sp.; 28406: bec.sp.; 28442: asa.21; 28502: asa.3; 32164: asa.3.

Gafui & collectors 8705: asd.33; 8973: asd.33; 9124: asd.5; 9374: asd.7; 10424: asd.22; 15212: asd.63; 16303: asd.56; 16499: asd.22; 16817: asd.63; 16945: asd.22; 17418: asd.33; 18662: asd.63; 18996: asd.63 — Gagné 1375: asd.19; 1397: asd.1ff.19; 1398: asd.51; 1399: asd.51 — Garber 721: asd.45; 746: asd.45; 1032: asd.45 — Garcia 26104: asa.41 — George 17/4/1970: asa.18 — Gillespie 2246: asd.15; 2348: asd.67; 2389: asd.11; 2495: asd.67; 2869: asd.50; 2870: asd.67; 2974: asd.50; 3403: asd.50; 4101: asd.67; 4270: asd.29; 4396.1: asd.67; 4833: asd.11 — Grant 3886: asd.17; 4487: asd.17; 5168: asd.51; 5199: asd.40; 5249: asd.51; 5294: asd.51; 5308: asd.51; 5311: asd.51; 5419: asd.51 — Green 1266: asd.37 — Greenwood 849: asd.67; 931: asd.14; 1304: asd.14 — Gutierrez 78249: asa.42a — Gutierrez et al. 116997: asa.50a; 117322: asa.58; 117418: asa.51; 117436: asa.49a; 117568: asa.50a.

Haniff 325: asa.57 — Hardial & Samsuri 178: asa.57 — Hartley 10380: asa.sp.; 10425: asa.18; 10973: asa.20; 11512: asa.sp.; 11751: asd.13; 11945: asa.17; 11949: bec.sp.; 12408: bec.sp.; 12529: asa.15; 13286: asa.3 — Havel & Kairo 11144: asa.18; 17001: asa.18 — Haviland 8/1888: asa.57; 1051: asa.57; 1463/1051: asa.57 — Henderson 21424: asa.57 — Henry 658: asa.45; 1288: asa.45 — Henty 29009: asd.34; 29153: asa.3; 29395: asa.21; 49162: bec.sp. — Henty & Foreman 42000: asa.sp.; 42640: asa.15 — Henty, Isgar & Galore 41617: bec.sp.; 41768: asa.9 — Henty & Lelean 41931: asa.18 — Hiepko & Schultze-Motel 1417: asa.sp. — Hochreutiner 1583: asa.31 — Hollrung 616: asa.18 — Hoogland 3876: asa.18; 4496: asa.28; 9573: asa.3 — Hoogland & Craven 10168: asa.18; 10473: asa.12; 10598: asa.26; 10600: bec.sp.; 10658: asa.18; 10831: asa.17; 10832: bec.9; 10835: asd.10; 11105: bec.sp. — Hoogland & Pullen 5941: asa.32; 5960: asa.17; 6069: bec.sp.; 6159: asa.1; 6251: bec.sp. — Hoogland & Schodde 6808: bec.sp.; 7296: asa.3 — Horne 200: asd.50; 616: asd.20; 1038: asd.47 — Hosokawa 5611: asd.46; 8330: asd.9; 8402: asd.9; 8097: asa.45 — Hsu 9520: asa.45; 12381: asa.45 — Huang 8967: asa.45 — Hunt 2727: asd.33; 2857: asd.32.

Igon 409 (F473): asa.22 — Iwanggin 5820: asa.18; 9048: bec.sp. — Iwatsuki, Murata & Gutierrez 638: asa.52.

- Jacobs 7353: asa.53; = 7353: asa.53; 7592: asa.52; 7656: asa.52; 7815: asa.49a; 7908: asa.37c; 7956: asa.51; 8753: asa.5; 8791: asa.10; 8872: asa.10; 8933: bec.sp.; 9227: asa.36; 9442: asa.sp. — Johns 200: asa.21 — Junghuhn 194: asa.31; 195: asa.31.
- Kadir 1650: asa.55 — Kairo 2: asa.21 — Kairo 45385: bec.sp.; 45392: asa.sp. — Kairo & Streimann 35703: bec.sp.; 35766: bec.sp. — Kajewski 473: asd.4; 880: asd.1; 1703: asd.52; 1999: asd.22; 2507: asd.35a; 2515: asd.33; 2623: asd.3 — Kalkman 4347: asa.5; 5191: bec.sp.; 6260: bec.8; 6294: asa.18; 6474: asa.18 — Kalkman & Tissing: 4037: asa.5 — Kanehira 88: asa.45; 503: asd.41; 796: asd.46; 1287: asd.9; 1380: asd.9; 1398: asd.41 — Kanehira & Hatusirna 13283: bec.sp.; 13911: asa.3; 14105: asd.60 — Katik 56299: asa.18; 74760: asa.21 — Katik & Croft 70758: asd.sp. — Kere 5065: asd.33 — King's collector 2027: asa.57 — Kokkelink 15555: asa.21; 15563: asa.aff.21 — Koorders 17851: asa.33 — Koroiveibau 13553: asd.67; 15120: asd.11 — Koroiveibau & Anderson 17117: asd.50 — Koroiveibau & Ooro 14229: asd.50 — Koroiveibau & Vodonaivalu 17172: asd.11; 17186: asd.11 — Koster 327: asa.18; 1441: asa.18; 4309: asa.15; 6823: asa.aff.21; 6829: asa.18; 6999: asa.18; 10820: asa.11; 10863: asa.18; 10915: asa.18; 11050: asa.18; 13518: asa.aff.21; 13893: asa.14 — Kostermans 1/1971: asa.22; 1086: asd.sp.; 2414: asa.sp.; 7443: asa.57; 7482: asa.57 — Kostermans et al. 122: asa.31 — Kotali & collectors 9295: asd.33; 9299: asd.32 — Kudo 1/1/1929: asa.45 — Kuoh 7998: asa.45 — Kuswata & Soepadmo 225: asa.23; 259: asa.23.
- Lagrimas 37263: asa.37c — Lam 2695: asa.22; 2979: asa.22; 3320: asa.22; 3581: asa.15 — Lava-rack & Ridsdale 31287: asd.64; 31302: asd.28 — Leach 56151: asd.12 — Leach & Katik 56094: asa.34 — Ledermann 6714: asa.18; 7854: asa.18; 8054: asa.18; 8057: asa.aff.21; 8605: asa.15; 8988: bec.1; 13098: asa.21 — Lepine 95: asd.17/19 — Loher 3511: asa.42a; 3516: asa.52; 3516: asa.52; 3517: asa.51; 6252: asa.42a; 6270: asa.42b; 6277: asa.54; 12242: asa.42b; 12294: asa.51; 12295: ast; 12307: asa.a49c; 12444: asa.52; 12498: asa.37a — Lörzing 11356: asa.22.
- Mabesa 876: asa.58; 9613: asa.42a; 25392: asa.41; 26032: asa.59a — MacDaniels 1139: asd.11; 1307: asd.19; 1334: asd.51; 1642: asd.19; 1671: asd.19 — Madulid, Reid & de la Cruz 113374: asa.aff.39 — Madulid et al. 118261: asa.50a; 118427: asa.50a — Maenuu 5170: asd.33; 6401: asd.33 — Main 557: asa.30 — Maingay 808: asa.57 — Mair 1836: asa.13 — Mann & Vandenberg 43400: asa.18 — Manner & Street 339: bec.sp.; 433: bec.sp.; 436: asa.10; 594: bec.sp. — Martelino & Edaño 35650: bec.2 — Martin 37055: asa.57 — Mauriasi & collectors 7599: asd.33; 8476: asd.7; 9818: asd.63; 9819: asd.7; 11267: asd.22; 11494: asd.33; 11541: asd.32; 11572: asd.33/63; 11769: asd.7; 12087: asd.63; 14337: asd.63; 15698: asd.63; 15730: asd.63; 16001: asd.43; 16038: asd.63; 16191: asd.63; 16592: asd.43 — McGregor 11374: asa.42a; 20168: asa.42a; 22942: asa.51; 23038: asa.59a; 23063: ast — McKee 2895: asd.25; 2967: asd.59 — Mearns & Hutchinson 4689: asa.39; 4690: bec.7 — Meebold 16669: asd.50 — Mendoza 18164: asa.52; 97515: asa.42b — Mendoza & Convocar 10497: asa.37c; 10515: asa.50a; 10542: bec.7 — Merrill 249: bec.7; 1106: ast; 1756: asa.47; 1783: asa.42a; 1828: asa.42a; 5144: asa.49a; 7342: bec.2 — Merritt 18004: asa.42b — Meyer 2757: asa.42a; 2840: asa.51 — Mikil 38480: asa.55; 38656: asa.55 — Millar 14569: asa.18; 18763: asa.18; 18854: asa.18; 22724: asa.21; 37651: asa.11; 37662: asa.21; 37663: asa.21; 37728: asa.11; 38365: bec.sp. — Miranda 18900: asa.44; 18924: asa.42a — Mitchell 567: asd.45 — Moi & Kairo 157: asa.18 — Moll 9581: asd.6; 9582: asd.6; 9591: bec.sp.; 13020: asa.18 — Moore 86: asd.51; 177: asd.40; 393: asd.17; 479: asd.27 — Morrison 5/8/1896: asd.37 — Murray 51: asd.17.
- Nand 10251: asd.11 — Nat. Taiwan Univ. 604: asa.45 — Native collector (Manila) 1655: asa.57 — Neth. Ind. For. Serv. 291: asa.33; 30308: asa.15.
- Orlido 22/4/1962: asa.51 — Ou & Kao 9442: asa.45.
- Pancho 4346: asa.59a — Paraiso 29342: asa.42a; 30413: asa.42a — Parham 608: asd.62; 833: asd.50; 1977: asd.62; 2615: asd.67; 3010: asd.67; 8362: asd.50; 11655: asd.62 — Parks 20396: asd.50; 20456: asd.50 — Pleyte 287: asa.15; 440: asa.30 — Powell 1631: asa.sp. — Pullen 272: bec.sp.; 471: asa.1; 583: bec.sp.; 952: asa.18; 1368: asa.4; 5235: bec.sp.; 5499: asa.34; 8461: asa.34; 7736: asa.sp. — Purseglove 5108: bec.6.

- Qoro 14339: asd.11 — Qoro & Douglas 14101: asd.50 — Qoro, Tale & Fesaitu: 12594: asd.50.
- Ramos 357: asa.37a; 451: asa.59a; 981: asa.41; 1013: asa.49a; 1042: asa.41; 1147: asa.50a; 1569: asa.49a; 1750: asa.42a; 1921: asa.50a; 2480: asa.52; 5013: asa.52; 7101: asa.42a; 10927: asa.59a; 10963: asa.58; 14682: asa.37a; 15026: asa.42a; 15118: asa.58; 15258: asa.50a; 15291: bec.7; 16524: asa.59a; 16538: asa.59a; 16545: asa.41; 16546: asa.59a; 16590: asa.59a; 17441: asa.59a; 20516: asa.54; 20565: asa.42a; 22371: asa.49a; 33381: asa.59a; 23395: bec.2; 23410: asa.59a; 23430: asa.37a; 23489: asa.54; 23501: asa.49a; 23523: asa.52; 23537: ast; 23568: asa.49a; 23646: asa.51; 23699: asa.37a; 23805: asa.41; 24400: bec.2; 26986: asa.42a; 26993: asa.41; 30234: asa.37c; 30477: asa.49a; 30487: asa.43; 30529: bec.7; 30556: bec.4; 33124: asa.37a; 33126: asa.52; 33258: asa.37c; 33266: asa.49c; 33276: asa.44; 33278: asa.49c; 33279: asa.49c; 33314: asa.37c; 33355: asa.52; 33369: asa.52; 39397: asa.59a; 39573: asa.37a; 39781: asa.59a; 40762: asa.42b; 40859: asa.41; 40999: asa.59a; 41005: asa.37a; 41576: bec.7; 41859: asa.42a; 41888: asa.42a; 42223: asa.42b; 42289: asa.42b; 76822: asa.42a; 76927: asa.52; 80239: asa.52 — Ramos & Deroy 22490: asa.42a — Ramos & Edaño 26329: asa.44; 26501: asa.52; 26584: asa.59a; 26589: asa.59a; 26649: asa.49b; 26650: asa.58; 28558: asa.49b; 28646: asa.49c; 28695: asa.49b; 28711: asa.59a; 28780: asa.49c; 29215: asa.49a; 28871: asa.54; 29219: asa.51; 29230: bec.5; 29623: asa.54; 29684: asa.59a; 29694: asa.52; 30652: asa.58; 30653: asa.51; 30684: asa.49a; 31278: asa.58; 33569: asa.52; 33733: asa.58; 33878: asa.49a; 36958: asa.42a; 37626: asa.53; 37799: asa.53; 38555: asa.56; 38596: bec.7; 38667: asa.37a; 38670: asa.50b; 38828: asa.37a; 38842: asa.50a; 38925: bec.7; 39108: asa.50b; 39131: bec.7; 40290: asa.49b; 40396: asa.49b; 40426: asa.52; 40598: asa.38; 43909: asa.50b; 45626: asa.37a; 45718: asa.42b; 49430: asa.50b; 49437: asa.42a; 75140: ast; 75383: asa.54; 75456: asa.58; 75505: asa.59a; 75514: asa.43; 75559: bec.2; 75624: bec.7; 75741: asa.52; 85018: asa.42a; 85053: bec.7 — Ramos & Pascasio 34435: asa.54; 35101: asa.50a; 35104: asa.59a — Rant 9/1911: asa.31 — Rau 111: asa.21 — Rechinger 719: asd.53 — Recio 113241: asa.59a — Reillo 16133: asa.44; 16181: asa.42a — Reinecke 273: asd.53; 273a: asd.53; 426: asd.53; 521: asd.53/asd.36; 563: asd.11 — Ridley 7945: asa.57; 11921: asa.57 — Ridsdale 30327: bec.sp.; 33995: asd.26 — Ridsdale & Galore 33379: asd.10 — Ridsdale, Henty & Galore 31934: asa.18 — Ridsdale & Katik 38019: asa.13 — Ridsdale & Lavarack 30543: asd.64; 30632: asd.33 — Robbins 981: asd.21 — Robinson 514: asa.23; 9114: asa.59a — Robinson & Brown 17325: asa.42b — Rogers 48: asa.22 — Rojo 125: asa.58; 130: asa.49a; 176: asa.50a — van Royen 3499: asa.aff.18; 3634: asa.10; 4389: asa.18; 16298: asa.18; 16385: asd.33; 18101: bec.sp.; 18136: bec.sp.; 18138: asa.1; 20477: asa.1 — van Royen & Sleumer 5863: asd.12; 7568: bec.sp.; 7589: asa.7 — Runikera & collectors 13138: asd.33.
- Sandkuhl 340: asa.41; 375: asa.47; 21297: asa.40 — Sapiin 124: asa.31 — Sata 1569: asa.45; 1570: asa.45; 1571: asa.45 — Saunders 667: asa.1; 897: asa.1 — Saw 71614: asa.555 — Sayers 173: asa.21; 19773: asa.21; 19825: bec.sp.; 21363: bec.sp.; 21520: asd.34; 21568: asd.34; 21879: asd.24; Schlechter 16372: asa.4; 17565: asa.21; 19194: asa.18 — Schodde 1400: asa.1; 1481: bec.sp.; 1553: asa.1; 5543: asa.21; 5639: asa.sp. — Schodde & Craven 3689: asd.63; 3701: asd.33; 3779: asd.64; 3827: asd.56 — Schram 7721: asa.18; 10740: asa.8; 12401: bec.sp.; 13334: asa.sp. — Scortechini 683: asa.57; 1875: asa.57; 1885: asa.57 — Seemann 173: asd.44; 174: asd.62; 181: asd.50 — Selvaraj 99682: asa.57 — Setchell 341: asd.45; 401: asd.45 — Sibat 22173: asa.57 — Sidek 404: asa.57 — Sinclair & Edaño 9560: asd.59a; 55132: asd.59a — Sirute'e & collectors 10012: asd.7; 10081: asd.7 — Sleumer & Vink 14311: asa.21 — A.C. Smith 553: asd.55; 707: asd.20; 725: asd.47; 859: asd.50; 1363: asd.67; 1525: asd.29; 1586: asd.aff.67; 1645: asd.20; 1706: asd.29; 1799: asd.23; 1875: asd.20; 4245: asd.11; 4788: asd.67; 4918: asd.58; 5186: asd.2; 5464: asd.67; 5701: asd.67; 5763: asd.58; 6709: asd.11; 6823: asd.11; 7220: asd.67; 7375: asd.44; 7383: asd.44; 7387: asd.67; 7525: asd.67; 7659: asd.67; 7785: asd.11; 8038: asd.67; 8310: asd.50; 8416: asd.50; 8628: asd.50; 8830: asd.50; 9084: asd.50; 9313: asd.42 — H.M. Smith 169: asd.17 — L.S. Smith 1029: asa.21; 1338: asd.sp.; 1346: asd.sp. — Sore, Masu'u & Lipaeto 2656: asd.33 — Spence 471: asd.45 — St. John 17172: asd.51; 17275: asd.40; 17500: asd.40; 18230: asd.67 — Stauffer & Sayers 5604: asa.21

— van Steenis 1388: asa.57; 8030: asa.31 — Stevens & Lelean 58235: asd.26; 58323: asa.13; 58718: asa.13 — Stevens & Veldkamp 54349: asa.21 — Stone 4555: asd.41 — Stone & Streimann 10350: asd.48 — Streimann 45180: asd.sp. — Streimann & Lelean 52690: asd.sp. — Sulit 2669: ast; 2708: asa.59a; 2712: asa.41; 2723: asa.58; 6045: asa.59a; 6093: asa.37c; 6099: asa.50a; 6251: asa.43; 6327: asa.37c; 6335: asa.59a; 6350: aff.ast; 6352: asa.43; 6410: bec.7; 7751: asa.52; 8377: asa.49a; 8378: asa.51; 8380: asa.59a; 8381: asa.52; 8383: asa.49a; 8386: asa.59a; 8388: asa.42a; 9836: ast; 9936: asa.48; 10027: asa.38; 11437: asa.58; 14425: asa.43; 21506: asa.37c; 21571: asa.58; 21714: asa.52; 31088: asa.37a — Susui 8251: asd.33.

Tadena 9570: asa.42a; 9571: asa.42b — Teraoka & Kennedy 115: asd.19 — Tesoro 9569: asa.49a.

Univ. San Carlos 56: asa.50a; 77: asa.50a; 440: asa.50a; 712: asa.42b.

Vandenberg, Katik & Kairo 39798: bec.sp.; 39812: asa.21; 39877: bec.sp. — Vandenberg, Womersley & Galore 42034: asa.sp. — Vanoverbergh 3879: asa.52 — Vaupel 427: asd.53 — Versteegh 4951: asa.21; 4954: bec.sp.; 7501: asa.34; 7831: asa.18 — Vesco A° 1847: asd.19 — Vidal 343: asa.42a; 344: asa.42a; 780: ast; 781: asa.37a; 1387: 42a; 1392: asa.54; 2656: asa.42a; 2858: asa.51; 2859: asa.42a; 2861: asa.59a; 2863: asa.58 — Villamil 23464: asa.58 — Vinas 67018; bec.sp.; 67019: asa.5 — Vinas & Kenesi 59381: asa.10 — Vinas & Wiakabu 59600: asd.sp.; 59638: asa.5 — Vink 16806: bec.sp.; 16814: asa.5 — Vink & Schram 8723: asa.10; 8769: asa.21; 8800: asa.10; 8803: asa.sp. — Vodonaivalu 17273: asd.54 — de Voogd 1838: asa.31 — Vorakitaki 11847: asd.67 — de Vriese 8a: asa.23; 60: asa.22; 70: asa.23; 71: asa.22; 81: asa.23; 137: asa.22; 138: asa.22; 142: asa.22.

Waterhouse 193 (22983): asd.56; 558: asd.33; 612: asd.64; 737: asd.33 — Watkins 772: asd.67 — Wenzel 204: asa.67; 222: asa.59a; 314: ast; 327: ast; 404: asa.59a; 633: asa.58; 684: asa.58; 677: asa.57; 746: asa.52; 852: bec.7; 881: asa.37c; 939: asa.37c; 946: bec.7; 1015: bec.2; 1036: asa.54; 1058: asa.52; 1086: asa.50a; 1209: asa.37a; 2508: asa.54; 2517: asa.59a; 2772: asa.59a; 3084: bec.2; 3129: asa.54 — Whiffin et al. 60327: asa.21 — Whistler 287: asd.59; 549: asd.53; 717: asd.36; 1063: asd.59; 1415: asd.45; 15660: asd.25; 1633: asd.53; 2710: asd.36; 2712: asd.45; 2748: asd.45; 2977: asd.45; 3096: asd.45; 3697: asd.45; 3734: asd.45; 3840: asd.45 — White 9569: asa.17; 10079: asd.18; 10496: asa.13 — Whitmore 619: asd.7; 625: asd.33; 879: asd.33; 933: asd.33; 1223: asd.63; 1492: asd.32; 1558: asd.sp.; 1620: asd.43; 1649: asd.52; 1676: asd.65; 2068: asd.63; 2121: asd.7; 2303: asd.63; 2419: asd.22; 2797: asd.7; 4001: asd.33; 4106: asd.33; 5211: asd.30; 12761: asa.57 — Whitmore's collectors 3079: asd.63; 3123: asd.33; 3576: asd.43; 3615: asd.32; 5291: asd.32; 5321: asd.33; 5775: asd.33; 5868: asd.33 — Whitmore & Womersley 807: asd.7 — de Wilde & de Wilde-Duyfjes 16550: asa.22 — de Wiljes-Hissink 45: asa.23 — Wilson 957: asd.1 — Wirawan 479: asa.31 — Womersley 3701: asa.18; 4881: bec.sp.; 5169: asa.1; 5172: bec.sp.; 11024: asa.18; 11283: asa.3; 17875: asa.21; 17878: bec.sp.; 19324: bec.sp.; 24904: asd.34; 41232: asd.sp.; 48590: asa.2 — Womersley & Larivita 48693: asa.21 — Womersley & Thorne 11883: asa.21 — Womersley, Vandenberg & Galore 37261: asa.sp. — Womersley & Wooliams 24998: bec.sp. — C. Wong 270: asd.9 — Wray 2813: asa.57.

Yates 25423: asa.37c — Yuncker 9252: asd.45.

Zollinger 1705: asa.31 — Zwickey 710: asa.42a.

INDEX TO SYNONYMS

Only names reduced to synonyms have been included here, as the accepted names of the species of *Astrocalyx*, *Astronia*, *Astronidium*, and *Beccarianthus* are arranged alphabetically. The numbers after the abbreviations refer to those of the species. The abbreviations used are: asa. = *Astronia*; asd. = *Astronidium*; ast. = *Astrocalyx calycina*; bec. = *Beccarianthus*. ? = Dubious or excluded species with their number.

Astrocalyx pleiosandra = ast
Astronia aneityensis = asd. 1
 banksiana = asd. 4
 bicolana = asa. 52
 bicolor = asa. 42b
 brachybotrys = asa. 49c
 bulusanensis = asa. 41
 calycina = ast
 carolinensis = asd. 9
 confertiflora = asd. 11
 consanguinea = asa. 49a
 cuernosensis = asa. 52
 discolor = asa. 42b
 ferruginea
 var. *ampla* = asa. 44
 floribunda = asd. 15
 forsteri = asd. 19
 foxworthyi = asa. 42a
 fraterna = asd. 17
 glabra = asd. 19
 hatusimae = ? 1
 inflata = asd. 20
 intermedia = asa. 31
 lanceata = asa. 3
 ledermannii
 var. *lepidotior* = asa. 21
 ligulata = asd. 27
 loheri = asa. 49a
 lucbanensis = asa. 54
 macrantha = asd. 29
 macrophylla var. β = asa. 22
 var. *concolor* = asa. 22
 var. *discolor* = asa. 22
 maquilingensis = asa. 42b
 mearnsii = asa. 39
 membranacea = ? 2
 merrillii = asa. 59a
 negrosensis = asa. 50a
 novae-hannoverae = asd. 38
 novoguineensis = ? 3
 ovalifolia = asd. 40

(*Astronia*)
 pachyphylla = asa. 49b
 pacifica = asa. 49a
 palauensis = asd. 41
 papetaria
 var. *novoguineensis* = asa. 25
 papetarioides = asa. 15
 parviflora = asd. 44
 parvifolia = asa. 37a
 pauciflora = asa. 49c
 pickeringii = asd. 45
 pickeringii
 var. *samoensis* = asd. 45
 var. *vitiensis* = asd. 45
 pileolata = asd. 17
 piperi = asa. 59a
 platyphylla = asa. 41
 ponapensis = asd. 46
 pulchra
 var. *obovata* = asa. 52
 purpuriflora = asa. 58
 ramosii = asa. 59b
 robusta = asd. 50
 rolfei
 var. *furfuracea* = asa. 54
 saccata = asd. 51
 samoensis = asd. 53
 forma *arborescens* = asd. 53
 sessilis = asd. 55
 smilacifolia = asa. 57
 var. *lepidophylla* = asa. 57
 sorsogonensis = asa. 37a
 spectabilis
 var. *intermedia* = asa. 31
 steenisi = asa. 57
 storckii = asd. 58
 stuhlmannii = ? 4
 subcaudata = asa. 37c
 subcordata = asd. 59
 tematana = asa. 15
 tetragona = asa. 41

(Astronia)

- tomentosa = asd. 62
 verruculosa = asa. 49a
 victoriae = asd. 67
 wenzelii = asa. 58
 zambalensis = asa. 41
 Astronidium acutifolium = bec. 1
 kusaianum = asd. 9
 lepidotum = ? 5
 membranaceum = ? 2
 nigrescens = ? 7
 pickeringii
 var. samoense = asd. 45
 subvaginatum = ? 6
 Bamlera insignis = bec. 3
 tenuifolia = ? 6
 Beccarianthus ickisii
 var. puberula = bec. 5
 var. setosus = bec. 2
 Conostegia glabra = asd. 19
 Everettia acutifolia = bec. 1
 nigrescens = ? 7
 octodonta = bec. 4
 pulcherrima = bec. 7
 Lomanodia glabra = asd. 19
 Melastoma glabra = asd. 19
 smilacifolium = asa. 57
 Naudinia glabra = asd. 19
 Naudiniella fraterna = asd. 17
 glabra = asd. 19
 samoensis = asd. 53
 Pharmacum beccarianum = asa. 4
 calycinum = ast
 candolleianum = asa. 41
 confertiflorum = asd. 11
 cumingianum = asa. 42a
 fraternum = asd. 17
 glabrum = asd. 19
 hollrungii = asa. 18
 intermedium = asa. 31
 macrophyllum = asa. 22
 ovalifolium = asd. 40
 papetarium = asa. 23
 papuanum = asa. 24
 parviflorum = asd. 44
 pickeringii = asd. 45
 pileolatum = asd. 17
 pulchrum = asa. 52
 robustum = asd. 50
 rolfei = asa. 54
 samoense = asd. 53
 smilacifolium = asa. 57
 spectabile = asa. 31
 storckii = asd. 58
 subcordatum = asd. 59
 tomentosum = asd. 62