

THE CONVULVULACEAE OF MALAYSIA, VIII ¹⁾

by

R. D. H O O G L A N D

(Flora Malesiana, Leyden)

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The genus *Argyreia* in the Malay Peninsula.

Dr Van Ooststroom's revision of the genus *Argyreia* in this series (Blumea V, 2, 1943, p. 352) did not include the collections from the Philippines and the Malay Peninsula. The species from the Philippines have been treated later on by Van Ooststroom (Blumea VI, 2, 1950, p. 337), whereas further additions were given in Blumea V, 3, 1945, p. 686 and Blumea VII, 1, 1952, p. 170. The representatives from the Malay Peninsula remained uninvestigated so far.

The present paper should be considered an addition to Van Ooststroom's papers. Consequently I have not repeated the lists of literature, descriptions, or remarks, unless important additions or changes were necessary.

Several of the species occurring in the Malay Peninsula are endemic, often with local distribution in the Peninsula. Others are found from Bengal to Java, are confined to Sumatra and the Malay Peninsula or to the southern part of the Peninsula and the Riouw and Lingga Archipelagoes; none of the species has been found in Borneo. *Argyreia nervosa* (Burm. f.) Bojer, like in the Malay Islands, is only cultivated in the Malay Peninsula.

The present author is greatly indebted to Dr Van Ooststroom for his valuable help and to the directors and curators of the following herbaria for the loan of specimens: Herbarium Bogoriense, Bogor, Java (BZ), Erbario del Instituto Botanico dell' Università, Firenze (FI), Herbarium, Royal Botanic Gardens, Kew (K), Rijksherbarium, Leyden (L), and Herbarium of the Botanic Garden, Singapore (SING).

Key to the species.

- 1a. Limb of corolla shallowly lobed or nearly entire 2
- b. Limb of corolla distinctly 5-lobed to 5-parted 10
- 2a. Bracts caducous, small or rarely large, occasionally a casual foliaceous persistent bract in the cyme; cymes mostly lax 3
- b. Bracts persistent, rarely some of the lower ones caducous, large; cymes capitate or subcapitate 7
- 3a. Leafbase deeply cordate. Leaves densely white-tomentose beneath 2. *A. nervosa*

¹⁾ I—VII by S. J. van Ooststroom, VII in this number, p. 170—177.

- b. Leafbase rounded. Tomentum beneath, if present, yellowish 4
- 4a. Sepals narrowly lanceolate, acute, patently hirsute 4. *A. adpressa*
- b. Sepals oblong, ovate, or elliptic, obtuse, never patently hirsute 5
- 5a. Peduncle shorter or slightly longer than the petiole. Corolla ca 5—6½ cm high 1. *A. mollis*
- b. Peduncle at least twice as long as the petiole. Corolla ca 2½—3½ cm high 6
- 6a. Sepals all broadly ovate, at least the 2 outer ones sparsely appressed-hirsute outside. Peduncles slender 3. *A. penangiana*
- b. Two outer sepals broadly ovate, two inner ones transverse-elliptic, densely short-hirsute outside. Peduncles stout 5. *A. scortechinii*
- 7a. Sepals with long, hirsute acumen, the latter at least as long as the blade of the sepal 9. *A. maingayi*
- b. Sepals at the apex obtuse or shortly acuminate 8
- 8a. Outer bracts transverse-elliptic. Peduncles slender 6. *A. sphaerocephala*
- b. Outer bracts elliptic to narrowly lanceolate. Peduncles rather stout 9
- 9a. Leaves distinctly cordate at the base, rather densely to densely strigose-hirsute above 7. *A. capitata*
- b. Leaves obtuse to rounded, rarely slightly cordate at the base, glabrous to sparsely strigose-hirsute above 8. *A. ridleyi*
- 10a. Two outer sepals ovate or orbicular, two inner ones transverse-elliptic 11
- b. All sepals ovate 13
- 11a. Two outer sepals orbicular, 6—7 mm long, densely tomentose outside; two inner ones transverse-elliptic, densely sericeous except the glabrous lateral margins outside 10. *A. rubicunda*
- b. Two outer sepals broadly ovate, up to 5 mm long, appressed-hirsute outside; two inner ones transverse-elliptic, glabrous or sparsely hirsute outside 12
- 12a. Corolla 15—18 mm high with ca 5 mm deep incisions; filaments glabrous 11. *A. kunstleri*
- b. Corolla 20—25 mm high with ca 10 mm deep incisions; filaments glandular-hairy at the base 13. *A. reticulata* var. *microcalyx*
- 13a. Base of the stamens glabrous 12. *A. oostroomii*
- b. Base of the stamens with glandular hairs 14
- 14a. Leaves sparsely strigose beneath. Sepals rather sparsely strigose outside 13. *A. reticulata* var. *reticulata*
- b. Leaves densely light yellowish sericeous beneath. Sepals densely sericeously hirsute outside 14. *A. corneri*

1. *Argyreia mollis* (Burm. f. 1768) Choisy 1833; Van Ooststr., Blumea 5, 1943, p. 357. — *Argyreia obtusifolia* Auct. non Lour. (Fl. Cochinch., 1790, p. 134); Prain, J. As. Soc. Beng. 74, 2, 1906, p. 320; Ridl., Fl. Mal. Pen. 2, 1923, p. 449; Henders., J. Mal. Br. R. A. S. 17, 1939, p. 59. — *Argyreia championi* Auct. non Benth. (Fl. Hongkong., 1861, p. 236); Prain, J. As. Soc. Beng. 63, 2, 1894, p. 89. — ? *Argyreia obtecta* Clarke, Fl. Br. Ind. 4, 1883, p. 186. — *Lettsonia argentea* Ridl., J. Fed. Mal. St. Mus. 7, 1916, p. 47.

PENINSULAR SIAM, La Tang Si, Annandale SF 1694, fl. & fr. Jan. 1916 (SING).

MALAY PENINSULA, without locality, *Scortechinii* s.n., fr. (SING); Perlis, Bukit Kentri, Henderson SF 22937, fl. & fr. Nov. 1929 (K, SING); Kedah, Alor Sta, Ridley 15191, fr. Feb. 1910 (K, SING); Kedah Peak, Robinson & Kloss 6138, fr. Dec. 1915 (K, type of *Lettsonia argentea* Ridl., SING); Langkawi Islands, Langkawi, Curtis 2532, fl. Sept. 1890 (SING); small islands, Curtis = 2532, fl. Nov. 1901 (SING); P. Timun, Henderson SF 29108, fl. Nov. 1934 (BZ, K, SING); Langkawi, near Sanatorium, Nauen SF 37953, fl. Nov. 1941 (SING).

Habitat: on limestone rocks near the sea, and on heath edge; from sea-level to 1000 m.

Remarks: 1. The original description of *Argyreia obtusifolia* Lour. as well as that of *Argyreia championi* Benth. are insufficient to decide about the respective identities. In both cases, however, in the generic de-

scription the corolla is given as deeply 5-lobed, which is not the case in the present species. The specimens cited under these names from the Malay Peninsula certainly belong to the present species.

2. *Argyreia obtecta* Clarke was described from Tavoy, Amherst, Mergui, and Tenasserim; the name was cited by Prain (1894) as a synonym under *Argyreia championi* Benth.. I have seen no original material. A specimen from S. Andaman, present in the Leyden herbarium under this name, quite agrees with *Argyreia mollis* from the Malay Islands, as well as a specimen of Vesterdal from Siam (Chantaboon) in the Singapore herbarium. The area of the species thus would include Siam, Lower Burma, the Andaman Islands, the Malay Peninsula, Sumatra, Java, and Bali.

3. In most specimens from the Malay Peninsula the leaves are relatively narrower than in those from the Malay Islands.

2. *Argyreia nervosa* (Burm. f. 1768) Bojer 1837; Van Ooststr., *Blumea* 5, 1943, p. 364.

MALAY PENINSULA, Pulau Penang, Botanic Garden, cultivated, *Curtis s. n.*, fl. June 1900 (SING); Scotland Road, *Ewart s. n.*, fl. Aug. 1938 (SING); Singapore, Botanic Garden, *Furtado s. n.*, veg. Sept. 1927 (SING), fl. Oct. 1929 (SING), *Holtum s. n.*, veg. July 1936 (SING).

3. *Argyreia penangiana* (Choisy) Boerl., *Handl. Fl. Ned. Ind.* 2, 1899, p. 513. — *Convolvulus penangianus* Wall., *Cat.*, 1828, no 1425, nomen nudum. — *Moorcroftia penangiana* Choisy, *Mém. Soc. Phys. Genève* 6, 1833, p. 406, t. 4; id. in DC., *Prod.* 9, 1845, p. 335. — *Lettsomia penangiana* (Choisy) Miq., *Fl. Ind. Bat.* 2, 1857, p. 592; Clarke, *Fl. Br. Ind.* 4, 1883, p. 196; Prain, *J. As. Soc. Beng.* 63, 2, 1894, p. 99; id., *ibidem* 74, 2, 1906, p. 325; Ridl., *Fl. Mal. Pen.* 2, 1923, p. 451; Burk & Henders., *Gard. Bull. S.S.* 3, 1925, p. 400; Henders., *Gard. Bull. S.S.* 4, 1928, p. 292; id., *Mal. Wild Flow.* 2, 1950, p. 315, f. 297; excl. *var. reticulata* Prain.

A woody twiner. Stems terete, to 3 mm, the old woody parts to 7 mm diam., sparsely strigose-hirsute when young, soon glabrescent. Leaves slenderly petiolate; petiole $1\frac{1}{2}$ —5 cm long, hairy like the stems; blade ovate to broadly lanceolate, acute or slightly acuminate at the apex, rounded at the base or slightly cordate, 6—20 cm long, $2\frac{1}{2}$ —11 cm broad; upper surface glabrous, lower surface sparsely strigose when young, soon glabrescent; midrib distinctly, 7—8 nerves on either side of it slightly prominent beneath, impressed above, minor nervation usually inconspicuous; nerves from the base nearly straight, near the margin strongly curving upward. Inflorescences axillary; peduncles terete, very slender, longer than the petioles, $2\frac{1}{2}$ —20 cm long, sparsely strigose when young, soon glabrescent, cymosely (1—)3—15-flowered; bracts linear-lanceolate, ca 5 by $\frac{1}{2}$ mm, slightly hirsute beneath, caducous. Pedicels ca 5—15 mm long when in flower, up to 2 cm when in fruit, slightly more densely strigose than peduncles. Sepals subequal, broadly ovate, ca 4—5 by $3\frac{1}{2}$ — $4\frac{1}{2}$ mm, the outer 2 with obtuse, the inner 3 with rounded apex; strigose outside, the outer 2 for the whole surface, the inner 3 on the central part only, the third on one side like the outer 2, on the other side like the inner 2. Corolla bright purple within, paler outside, funnel-shaped, with broad tube not manifestly distinct from the upper part of the corolla, ca 20—35 mm high, limb subentire, midpetaline bands hirsute outside, the connecting

fields glabrous like the lower 5 mm. Stamens and style included. Stamens inserted ca 5 mm above the corolla base; filaments filiform, dilated at their bases, glabrous, ca 20 mm long; anthers linear, ca 4 mm long. Ovary 2-celled, conical, glabrous; style glabrous, ca 30 mm long; stigma biglobular, papillose. Disk annular, ca 0.6 mm high. Fruit ovoid, ca 15 mm long, pink, 1-seeded. Seeds glabrous.

MALAY PENINSULA, without locality, *Scortechini* s.n., fl. & fr. (BZ, SING); Perak, Larut, *Kunstler* 2048, fl. July 1881 (K, L, SING), 2574, fr. Nov. 1881 (K, SING), 5339, fl. Dec. 1883 (K, L); Taiping, *Wray* 2095, fr. June 1888 (SING); Tupai, *Wray* 2334, fl. June 1888 (K, SING); Bilau Tujor, Larut, *Wray* 2601, fl. July 1888 (SING); Sungei Larut, *Wray* 2733, fl. Aug. 1888 (SING); Maxwell Hill, *Curtis* 2034, fl. Sept. 1889 (SING); Birch's Hill, *Fox* 107, fl. Oct. 1899 (SING); Larut Hill, *Derry* s.n. (*Curtis* 3697), fl. 1900 (K, SING); Maxwell Hill, *Anderson* 90, fl. March 1911 (SING); Taiping Hill, *Henderson* SF 11844, fr. March 1924 (SING); Pondok Tanjong, *Burkill* SF 13234, fr. March 1924 (SING), *Spare* SF 36303, fl. July 1939 (SING); S. Krian, *Raven* SF 37662, fl. Aug. 1939 (BZ, SING); Pulau Penang, Moniot's Road, *Curtis* 1586, fr. May 1888 (K, SING), Government Hill, *Curtis's Coll.* = 1586, fr. Apr. 1890 (SING), *Curtis* 1586, fr. March 1892 (K, SING), *Fox* s.n. (*Ridley* 10450), fl. Aug. 1899 (K, SING).

Distribution: known only from the Malay Peninsula (Perak, Pulau Penang).

Habitat: forests from low altitude to 1700 m.

Remarks: *Burkill* & *Holttum* (Gard. Bull. S.S. 3, 1923, p. 62) cite under the name *Lettsomia penangiana* Miq. 2 specimens, one (7770) representing *Argyreia reticulata* (Prain) Hoogl., the other (8629) representing *Argyreia scortechinii* (Prain) Hoogl.

4. *Argyreia adpressa* (Choisy 1833) Boerl. 1899; Van Ooststr., *Blumea* 5, 1943, p. 367 — *Lettsomia adpressa* (Choisy 1833) Miq. 1857; *Burk. & Holtt.*, Gard. Bull. S.S. 3, 1923, p. 62.

MALAY PENINSULA, Kedah, Sungei Patani, *Wolfe & Kadir* SF 21463, fl. Sept. 1938 (BZ, SING); Perak, without locality and collector, fl. (L); Larut, *King's Coll.* 2457, fl. & fr. Oct. 1881 (FI); Assam Kumbong, *Wray* 1914, fl. May 1888 (SING); Inpai, *Wray* 3298, fl. & fr. Oct. 1888 (SING); Blanda Mabok, *Wray* 3961, fl. Apr. 1890 (SING); Ipoh, Kinta, *Curtis* = 318, fl. Dec. 1895 (SING); Jor, *Haniff* SF 14240, fl. Sept. 1924 (SING); Selangor, Semangkok Pass, *Ridley* s.n., fr. Jan. 1921 (K), *Burkill* SF 8884, fl. Sept. 1922 (SING); Langkawi Islands, Langkawi, Gunong Raya, *Haniff* 15533, fr. Feb. 1911 (K, SING); Pulau Penang, without locality and collector, fl. (K); without locality, *Wallich* 1424, fl. & fr. 1822 (K, type collection), *Phillips* s.n., fl. 1824 (K); Government Hill, *Maingay* 1144, fl. & fr. (K, L); without locality, *Cantley* 3171, fl. (SING), *Kunstler* 1324, fr. Feb. 1881 (BZ); Government Hill, *Curtis* 318, fl. & fr. June 1885 (K, SING), fl. June 1886 (SING), *Ridley* = 318, fl. July 1889 (SING); without locality, *For. Guard* s.n., fl. Sept. 1890 (SING); Penara Bukit, *Ridley* s.n., fr. March 1896 (SING); Government Hill, *Curtis* s.n., fr. June 1900 (SING).

5. *Argyreia scortechinii* (Prain) Hoogl. comb. nov. (Prain ms). — *Lettsomia scortechinii* Prain, J. As. Soc. Beng. 63, 2, 1894, p. 98; id., ibidem 74, 2, 1906, p. 326; *Ridl.*, Fl. Mal. Pen. 2, 1923, p. 452; *Burk. & Henders.*, Gard. Bull. S.S. 3, 1925, p. 400; *Henders.*, J. Mal. Br. R. A. S. 5, 1927, p. 260.

A woody twiner. Stems terete, to 4 mm, the old woody parts to 7 mm diam., rather densely shortly strigose or strigose-hirsute to nearly glabrous, later on glabrescent. Leaves slenderly petiolate; petiole 1–4½ cm long, hairy like the stems; blade ovate to broadly ovate, acute to slightly acu-

minate at the apex, rounded at the base or slightly cordate, 4—11 cm long, $2\frac{1}{2}$ —7 cm broad; upper surface glabrous, lower surface strigose-hirsute, most densely so on the midrib and nerves, to nearly glabrous; midrib and 6—7 nerves on either side of it prominent beneath, slightly impressed above, minor nervation reticulate, invisible above, rather distinct beneath, nerves curving upward from the base. Inflorescences axillary; peduncles terete, 2—15 cm long, hairy like the stems, but slightly more densely so, cymosely 2—25-flowered; bracts triangular, ca 3 mm long, glabrous above, hirsute beneath, caducous. Pedicels ca 3 mm long when in flower, up to 1 cm when in fruit, hairy like the peduncles, but more densely so. Sepals unequal, the outer 2 broadly ovate, ca $5-5\frac{1}{2}$ by $4\frac{1}{2}-5$ mm, with rounded apex, densely and shortly appressed-pilose outside, glabrous inside, the inner 2 transverse-elliptic, ca $5\frac{1}{2}-6$ by $7-7\frac{1}{2}$ mm, with rounded apex, with ca $2-2\frac{1}{2}$ mm broad hairy band in the middle, further glabrous, the third one on one side like the outer 2, on the other side like the inner 2. Corolla pale pink to nearly white outside, mauve (*Ridley 5559*) or deep magenta (*SF 8629*) inside, funnelshaped with the tube not distinct from the upper part, ca 25 mm high, limb shallowly lobed, basal part (ca 8 mm) glabrous, midpetaline bands hirsute, connecting fields glabrous outside. Stamens and style included. Stamens inserted ca 3 mm above the corolla base; filaments filiform, dilated at their bases, glabrous, ca 11 mm long; anthers linear, ca 3 mm long. Ovary 2-celled, conical, ca 2 mm high, glabrous; style glabrous, 16 mm long; stigma biglobular, papillose. Disk annular, ca 1 mm high. Fruit ovoid, ca 1.6 cm long, 1-seeded. Seeds glabrous.

MALAY PENINSULA, without locality, *Scortechini s.n.*, fr. (K, type); Perak, The Cottage, Taiping, *Hervey s.n.*, fr. 1889 (SING), *Ridley 5559*, fl. & fr. Feb. 1891 (SING); Bukit Birch, *Fox 180 (Ridley 10681)*, fr. Oct. 1899 (SING); Gunong Hijau, *Anderson 63*, fr. March 1911 (SING); Maxwell Hill, *Burkill & Haniff SF 13943*, fr. March 1924 (SING), *Strugnell CF 14517*, fr. Dec. 1927 (SING); Pahang, Fraser Hill, *Burkill & Holttum SF 8629*, fl. Sept. 1922 (BZ, SING); Cameron Highlands, *Nat. Coll. F. M. S. Mus. 11585*, fl. Oct. 1923 (SING), *Henderson SF 23493*, fl. Apr. 1930 (BZ, SING), *Nur SF 32863*, fl. Apr. 1937 (L, SING), *Batten Pool s.n.*, fl. & fr. Nov. 1939—Jan. 1940 (SING).

Distribution: known only from the Malay Peninsula (Perak and Pahang).

Habitat: as far as known only at ca 1300—1500 m.

6. *Argyreia sphaerocephala* (Prain) Hoogl. comb. nov. (Prain ms)
— *Lettsomia sphaerocephala* Prain, J. As. Soc. Beng. 73, 2, 1904, p. 19; id., ibidem 74, 2, 1906, p. 323; Ridl., Fl. Mal. Pen. 2, 1923, p. 450.

A woody twiner. Stems terete, to 3 mm diam., light brown, sparsely strigose. Leaves slenderly petiolate; petiole $1-3\frac{1}{2}$ cm long, sparsely strigose; blade narrowly ovate, acute or slightly acuminate at the apex, rounded at the base, 5—10 cm long, $2\frac{1}{2}-4$ cm broad; sparsely strigose on both sides; midrib and 5—6 nerves on either side of it slightly prominent beneath, impressed above; nerves from the base curving upward. Inflorescences axillary; peduncles slender, terete, sparsely strigose, up to ca 20 cm long, $\frac{2}{3}-1$ mm diam.. Flowers in a dense, ca 30-flowered, capitate cyme; diam. of the capitulum (with flowers in bud) ca $3\frac{1}{2}$ cm; outer bracts transverse-elliptic, ca $2\frac{1}{2}$ by 3 cm, hirsute outside, sparsely so inside,

innermost bracts obovate-spathulate, ca 5 by 3 mm, hirsute outside, glabrous inside. Pedicels 3—4 mm long. Sepals ovate, the outer 2 obtuse, the third rounded, the inner 2 retuse at the apex, 4—4.3 by 3—3.3 mm, hirsute near the apex only, in the inner 2 in the central part only. Corolla pink, infundibuliform-campanulate (*Prain*), $2\frac{1}{2}$ cm high (*Prain*), limb probably subentire, midpetaline bands hirsute, connecting fields and lower part glabrous. Stamens glabrous; anthers in bud 2 mm long. Ovary 2-celled, conical, in bud 0.8 mm high, glabrous; style glabrous; stigma biglobular, papillose; disk annular, in bud ca 0.3 mm high. Fruit unknown.

MALAY PENINSULA, Perak, Krian, *Scortechini* 1884, in bud Oct. 1884 (K, type collection); Abu Salama, *Scortechini* 1884, in bud Oct. 1884 (K).

Distribution: known only from the Malay Peninsula (Perak).

Remarks: I have only seen buds with the corolla ca 5 mm long. It is a very remarkable species, easily recognized by the capitate inflorescence with large bracts at the end of the long and slender peduncle. The bracts and leaves, which are probably young in both collections known to me, are reddish in a dry state.

7. *Argyreia capitata* (Vahl 1794) Choisy 1833; Van Ooststr.. *Blumea* 5, 1943, p. 368. — *Lettsomia peguensis* Clarke, Fl. Br. Ind. 4, 1883, p. 193; *Prain*, J. As. Soc. Beng. 63, 2, 1894, p. 94; id., ibidem 74, 2, 1906, p. 322; *Ridl.*, Fl. Mal. Pen. 2, 1923, p. 450; *Henders.*, Gard. Bull. S. S. 4, 1928, p. 292.

PENINSULAR SIAM, Surat, Kau Hoa Kwai, *Seidenfaden* 2138, fl. Jan. 1935 (SING).

MALAY PENINSULA, without locality, *Scortechini* 1628, fl. (SING); Kedah, Alor Sta., *Ridley* 14898, fr. March 1910 (K, SING); Prov. Wellesley, Permatang Belau, *Ridley s.n.*, fl. Dec. 1895 (SING); Muda Riv. near Dusun Gajah, *Burkill SF* 3073, fl. Jan. 1918 (SING); Perak, Gopeng, *Kunstler* 1077, fl. Nov. 1880 (SING); Larut, *Kunstler* 2622, fl. Dec. 1881 (K); near Ulu Kerling, *Kunstler* 8627, fr. March 1886 (BZ, SING); track to Jor, *Ridley* 13697, fl. Nov. 1908 (SING); Kelantan, Kelantan Riv., *Ridley s.n.*, fl. Feb. 1917 (K); Pahang, Kuala Tahan, *Seimund* 913, fl. March 1921 (SING); Temerloh, Titi Bungor, *Henderson SF* 10650, fr. March 1923 (SING); Selangor, Klang Gates Lowland, *Ridley s.n.*, fl. (K); Gua Batu, *Ridley* 8210 (SING), 8227 (K, SING), fl. Dec. 1890; Petaling, *Ridley* 10194, fl. 1899 (SING); Negri Sembilan, Bukit Danan, *Alvins* 410, fl. Jan. 1885 (SING); Beranang, *Alvins* 1996, fl. Nov. 1885 (SING); near Kending, *Burkill SF* 1442, fl. Jan. 1916 (SING); Langkawi Islands, Kuala Quah, Langkawi, *Hamiff & Nur SF* 7063, fl. Nov. 1921 (K, SING); Pulau Penang, *Anonymus* 2555, fl. (SING); Waterfall, *Curtis* 498, fl. Nov. 1885 (K, SING); *Curtis* = 498, veg. Oct. 1894 (SING); Balik Pulau, *For. Guard* 2 s.n., fl. Dec. 1904 (SING); S of Ginting Pass, *Burkill SF* 4619, fl. Dec. 1918 (SING).

Habitat: thickets, open ground, waysides; at low altitude.

Vernacular names: akar tapah rusa (Prov. Wellesley, *Ridley*), akar tumiang (Negri Sembilan, *Alvins*), akar ulan bukit (Negri Sembilan, *Alvins*), lana bulu (Pulau Penang, *For. Guard*).

Remarks: 1. The type of *Lettsomia peguensis* Clarke is unknown to me. The Malayan specimens, identified as this species, are undoubtedly conspecific with the present species. Clarke already indicated that his species might be only a marked local variety of the present species, differing only in the type of hairiness. Van Ooststroom notes that the hairiness of the present species varies to a considerable extent. If *Lettsomia peguensis* is included, the known area of the species comprises, except the area indicated by Van Ooststroom, also the Andaman Islands; a further extension is found in a collection from Siam: Chantaboon, *Vesterdal* (SING).

2. The shape of the bracts varies greatly; the outer ones may be elliptic to narrowly lanceolate.

8. *Argyreia ridleyi* (Prain 1894) Prain ex Van Ooststr. Blumea 5, 1943, p. 370. — *Lettsomia ridleyi* Prain 1894; Henders., Gard. Bull. S.S. 4, 1928, p. 292. — *Lettsomia ridleyi* Prain var. *velutina* Prain, J. As. Soc. Beng. 63, 2, 1894, p. 99; id., ibidem 74, 2, 1906, p. 324; Ridl., Fl. Mal. Pen. 2, 1923, p. 451.

MALAY PENINSULA, Perak, Sonkay Riv., *Curtis 503*, fl. & fr. Dec. 1885 (SING); Pahang, Baloh Res., *Sow CF 8191*, fr. March 1930 (SING); Trengganu, Kemaman, Bukit Kajang, *Corner s.n.*, fr. Nov. 1935 (SING); Kemaman, Sungai Nipa, *Corner s.n.*, fl. Nov. 1935 (SING); Selangor, Klang, *Kehding s.n.*, fl. Dec. 1878 (FI); Parawang Kwala Lumpur, *Ahmat s.n.*, fl. 1890 (SING); Pahang Track, *Ridley 8550*, fl. 1897 (SING); Telok Res., Klang, *Burkill SF 5999*, fr. March 1921 (K, SING); Klang Watercatchment For., *Burkill SF 9170*, fr. Oct. 1922 (SING), *Nur SF 8346*, fr. Jan. 1923 (BZ, SING); Negri Sembilan, Selaru For. Res., *Holttum SF 9729*, fr. Nov. 1922 (SING); Johore, Ulu Batu Pahat, *Lake & Kelsall s.n.*, fl. & fr. Nov. 1892 (SING); Kota Tinggi, *Ridley 4214*, fl. & fr. Dec. 1892 (SING, type of *Lettsomia ridleyi* Prain); Gunung Pulai, *Ridley 12196*, fr. Dec. 1904 (K, SING); Gunung Muntahak, *Holttum SF 19892*, fr. March 1928 (BZ, SING); Kota Tinggi, *Teruya 999*, fl. Oct. 1929 (SING); Kota Tinggi-Mawai road, *Corner s.n.*, fr. Feb. 1935 (SING); Sungai Kayu, Mawai-Temaluang road, *Corner SF 32457*, fl. & fr. Oct. 1936 (SING); Mersing, *Kostermans s.n.*, fl. Aug. 1938 (BZ, SING); Singapore, Selitar, *Goodenough s.n.*, fr. Oct. 1889 (SING); Bukit Maidai, *Goodenough 1635*, fl. June 1890 (SING); North Selitar, *Ridley s.n.*, fr. 1891 (SING); Chan Chu Kang, *Ridley s.n.*, fl. & fr. 1892 (SING), *Goodenough 1635b*, fl. June 1892 (SING); Bukit Mandai, *Goodenough s.n.*, fl. July 1892 (SING); Chan Chu Kang, *Bakar s.n.*, fl. 1893 (SING); Bukit Mandai, *Ridley 1635c*, fl. 1894 (SING, type of var. *velutina* Prain); Jalan Brass, *Niat (Ridley's Coll.) s.n.*, fr. Feb. 1894 (SING); Chan Chu Kang, *Ridley 6710*, fl. Aug. 1894 (BZ, SING); Reservoir Woods, *Ridley s.n.*, fr. March 1905 (SING); Jurong Road, *Burkill SF 708*, fr. Jan. 1915 (BZ, K); Mandai Road, *Burkill SF 4675*, fr. Jan. 1919 (SING), *6107*, fl. Aug. 1920 (BZ, SING), *5975*, fr. Feb. 1921 (BZ, SING), *11422*, fl. Feb. 1924 (BZ).

Vernacular names: akar simpis (Pahang, *Sow*), akar saga molek (fide Ridley, 1923).

Remarks: 1. Prain's var. *velutina* differs from "var. *typica*" (Prain, 1894, p. 98) by its somewhat smaller leaves and by being more densely hirsute. The differences do not make the impression to be of great importance, and may be due to differences in age and/or habitat.

2. In some specimens, e. g. *Teruya 999*, *SF 19892*, *SF 32457*, the bracts are much narrower than described by Van Ooststroom, viz. lanceolate, up to ca 3 cm long. In *SF 32457* this may be caused by a gall insect, in the other collections it makes a completely natural impression. Intermediate forms to the ovate bracts are frequent. In *Kehding s.n.* the lower bracts have fallen off, only the upper ones are persistent.

9. *Argyreia maingayi* (Clarke) Hoogl. comb. nov. — *Lettsomia maingayi* Clarke, Fl. Br. Ind. 4, 1883, p. 195; Ridl., Trans. Linn. Soc. Lond. 3, 1893, p. 323; Prain, J. As. Soc. Beng. 63, 2, 1894, p. 99; id., ibidem 74, 2, 1906, p. 323; Ridl., Fl. Mal. Pen. 2, 1923, p. 450; Henders., Gard. Bull. S.S. 4, 1928, p. 292; id., J. Mal. Br. R. A. S. 17, 1939, p. 59; id., Mal. Wild Flow. 2, 1950, p. 314.

A large woody climber. Stems terete, to 3 mm, the old woody parts to 6 mm diam., light brown, patently fulvous-hirsute when young, later on glabrescent. Leaves slenderly petiolate; petiole $1\frac{1}{2}$ —5 cm long, sparsely

patent- to appressed-hirsute; blade ovate, rarely elliptic-oblong or obovate, acuminate at the apex, rounded at the base or shortly attenuate into the petiole, 9—20 cm long, $3\frac{1}{2}$ —11 cm broad; upper surface glabrous or nearly so, lower surface strigose-hirsute on the nerves only; midrib and 5—6 nerves on either side of it prominent beneath, minor nervation reticulate, rather prominent beneath, all more or less impressed above; nerves from the base curving upward. Inflorescences axillary; peduncles stout, terete, patently hirsute, $1\frac{1}{2}$ —5 cm long, when dry deeply longitudinally grooved. Flowers in a dense capitate cyme at the end of the peduncle; diam. of the capitulum generally 5—9 cm, with the corollas up to 17 cm, sometimes smaller in poorly developed specimens; outer bracts broadly ovate to narrowly lanceolate, obtuse to acute at the apex, rounded at the base, $2\frac{1}{2}$ —4 cm long, (0.4—)1— $2\frac{1}{2}$ cm broad, rather sparsely fulvous-hirsute to nearly glabrous outside and at the margins, glabrous inside; the upper bracts smaller and narrower, oblong to linear-oblong, up to 2 cm long. Pedicels very short or none. Sepals ovate-oblong, long-acuminate, the 3 outer ones 11—15 mm long, of which the acumen 6—9 mm, outside long-hirsute with fulvous patent hairs, the basal part, ca 4 mm, glabrous, inside glabrous, the 2 inner ones 9—13 mm long, of which the acumen 4—7 mm, slightly less densely hairy than the 3 outer ones. Corolla white with pink, red, crimson, or purple stripe on the middle of each lobe, funnel-shaped with distinct tube, $4\frac{1}{2}$ —6 cm high, limb subentire, midpetaline bands hirsute outside, connecting fields glabrous. Stamens and style included. Stamens inserted ca 7—8 mm above the corolla base; filaments filiform, shortly glandular-pilose at their bases, ca 18 mm long; anthers linear, ca 4 mm long. Ovary 2-celled, cylindric, glabrous; style glabrous, ca 26 mm long; stigma biglobular, papillose. Disk annular, shallowly 5-lobed, about 1 mm high. Fruit ovoid, ca 12 mm long, pink, 1-seeded. Seeds glabrous.

MALAY PENINSULA, without locality, *Griffith 5878*, fr. (K); Perak, Changkat Mentri, *Kloss 6483 & 6515*, fl. Sept. 1918 (K); Pahang, Kota Glanggi, *Ridley s.n.*, fl. Aug. 1891 (SING); Sungai Nering, Temerloh, *Henderson SF 10727*, fr. March 1923 (SING); Jerantut, *Burkill & Hamiff SF 16054*, fr. Nov. 1924 (SING); Sungai Tahan, near Kuala Teku, *Holttum SF 20817*, fl. Sept. 1928 (BZ, SING); Gunung Senyum, *Henderson s.n.*, fl. July 1929 (SING); Bt Kuman, Raub, *Syed Ali CF 23356*, fr. Dec. 1930 (SING); Bukit Cheras, *Henderson SF 25066*, fl. Oct. 1931 (SING); Sungai Teku, *Kiah SF 31789*, fl. July 1936 (SING); Selangor, Kuala Lumpur, *Ahmat s.n.*, fr. 1881 (SING); Ulu Gombak, *Hume 9178*, fl. Oct. 1921 (SING); Ginting Simpak, *Hume 9697*, fl. Nov. 1921 (SING); Negri Sembilan, Sungai Ujong, *Alvins 2108*, fl. Nov. 1885 (SING); Gemas, *Burkill SF 3539*, fl. Nov. 1918 (BZ, SING); Gunung Angsi, *Nur SF 11558*, fl. Nov. 1923 (SING); Bukit Tangga, *Nur SF 11834*, fr. Dec. 1923 (SING); Gemas, *Nur SF 15252*, fl. Aug. 1924 (SING); Malacca, *Maingay 1151*, fl. July 1866 (K, type collection), *Alvins 202*, fl. Nov. 1884 (SING), *Alvins 140*, fr. Dec. 1884 (SING); Selandar, *Alvins 702*, fr. Jan. 1885 (SING); Châbau, *Alvins 2202*, fl. Sept. 1885 (SING); foot of Ophir, *Hullett 843*, fr. Apr. 1888 (K); Bukit Bruang, *Derry 318*, fl. Nov. 1889 (SING); Ayer Panas, *Derry 388*, fr. Feb. 1890 (SING); Selandar, *Holmberg 886*, fl. Oct. 1891 (SING); Bukit Sedantau, *Goodenough 1432*, fl. Aug. 1893 (SING); Johore, Kuala Tebing Tinggi, *Ridley s.n.*, fr. 1900 (SING); Genuang, *Ridley s.n.*, fr. March 1915 (K); Pulau Penang, Sonkay Riv., *Curtis 503*, fl. Dec. 1885 (K).

Distribution: known only from the Malay Peninsula.

Habitat: jungle, swamp, and edge of rivers, up to 1000 m altitude.

Vernacular names: akar bungah butang (Malacca, *Alvins*),

akar sumulut (Negri Sembilan, *Alvins*), akar trong trong (Malacca, *Goodenough*), akar ulan gajah (Malacca, *Hullett*), bunga akar saptu utan (Selangor, *Ahmat*), akar k'lupus (Malacca, *Alvins*), tentarong (fide Ridley, 1923).

Use: "the fruits are eaten by the Malays, sweet taste" (*Alvins* 206), "the roots are to be boiled and applied in cases of bone pain" (*Alvins* 2108).

Remarks: As is the case in *Argyreia ridleyi* (Prain) Prain ex Van Ooststr. and *Argyreia capitata* (Vahl) Choisy the shape of the bracts varies a great deal. In some collections (*SF* 20817, *SF* 25066, *SF* 31789) they are narrowly lanceolate, the largest ca 30 by 3 mm, in most specimens they are broader, up to broadly ovate, with a relatively small number of intermediates.

10. *Argyreia rubicunda* Choisy, Mém. Soc. Phys. Genève 6, 1833, p. 426; id. in DC., Prod. 9, 1845, p. 333; cf. Van Ooststr., Blumea 7, 1952, p. 172; non Van Ooststr., Blumea 5, 1943, p. 371. — *Convolvulus rubicundus* Wall., Cat., 1828, no 1409, nomen nudum. — *Lettsomia rubicunda* (Choisy) Clarke, Fl. Br. Ind. 4, 1883, p. 195; Ridl., Fl. Mal. Pen. 2, 1923, p. 453.

MALAY PENINSULA, Negri Sembilan, Gâong Talan, *Alvins* 1183, fr. Feb. 1885 (SING); Malacca, *Cantley s.n.*, fr. (SING), *Griffith s.n.* § 5848, buds & fr. (K), *Maingay* 1143 (2433), fl. Oct. 1867/8 (K).

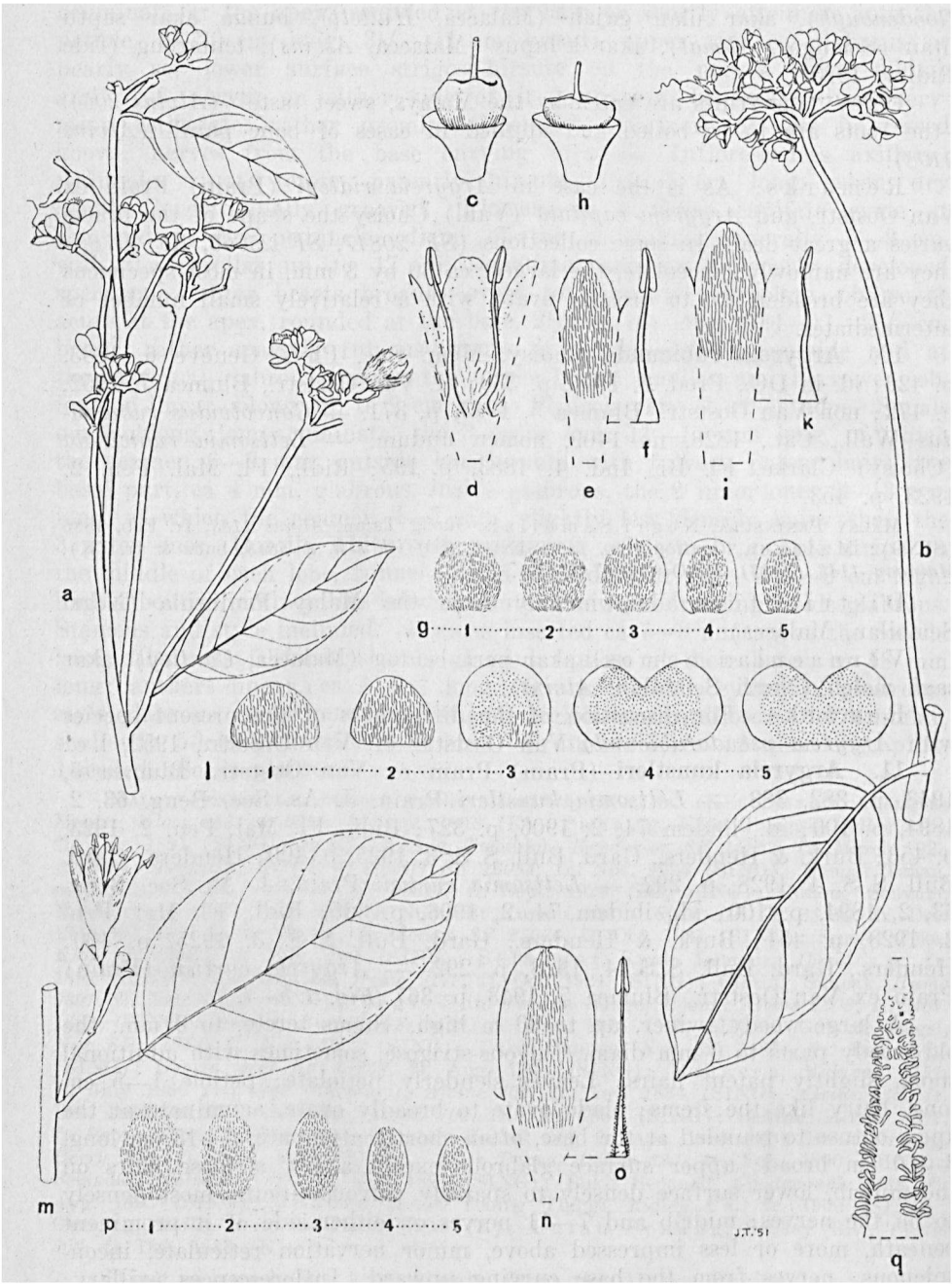
Distribution: known only from the Malay Peninsula (Negri Sembilan, Malacca).

Vernacular names: akar pera bentag (Malacca, *Cantley*), akar sagâ moleh (Negri Sembilan, *Alvins*).

Remarks: For discussion of the differences of the present species with *Argyreia pseudorubicunda* Van Ooststr., cf. Van Ooststr., 1952, l. c.

11. *Argyreia kunstleri* (Prain) Prain ex Van Ooststr., Blumea 5, 1943, p. 382, 383. — *Lettsomia kunstleri* Prain, J. As. Soc. Beng. 63, 2, 1894, p. 100; id., ibidem 74, 2, 1906, p. 327; Ridl., Fl. Mal. Pen. 2, 1923, p. 453; Burk. & Henders., Gard. Bull. S. S. 3, 1925, p. 400; Henders., Gard. Bull. S. S. 4, 1928, p. 292. — *Lettsomia curtisii* Prain, J. As. Soc. Beng. 63, 2, 1894, p. 100; id., ibidem 74, 2, 1906, p. 325; Ridl., Fl. Mal. Pen. 2, 1923, p. 451; Burk. & Henders., Gard. Bull. S. S. 3, 1925, p. 400; Henders., Gard. Bull. S. S. 4, 1928, p. 292. — *Argyreia curtisii* (Prain) Prain ex Van Ooststr., Blumea 5, 1943, p. 367. *Fig. 1 h-l*.

A large woody twiner, up to 30 m high. Stems terete, to 3 mm, the old woody parts to 6 mm diam., fulvous-strigose, sometimes with additional short, slightly patent hairs. Leaves slenderly petiolate; petiole 1–5 cm long, hairy like the stems; blade ovate to broadly ovate, acuminate at the apex, obtuse to rounded at the base, often shortly attenuate, 6–15 cm long, 3–10 cm broad; upper surface glabrous except a few strigose hairs on the midrib, lower surface densely to sparsely fulvous-hirsute, most densely so on the nerves; midrib and 7–11 nerves on either side of it prominent beneath, more or less impressed above, minor nervation reticulate, inconspicuous; nerves from the base curving upward. Inflorescences axillary; peduncles terete, longer than the petioles, 5–20 cm long, hairy like the stems, cymosely 3–30-flowered; bracts linear-lanceolate, ca 5 by $\frac{1}{2}$ mm,



slightly hirsute beneath, caducous. Pedicels ca 3 mm long, hairy like the peduncles. Sepals unequal, the outer 2 broadly ovate, ca $4\frac{1}{2}$ by 5 mm, with rounded apex, hirsute at least in the basal half outside, the inner 2 transverse-elliptic, ca 6 by $7\frac{1}{2}$ mm, with rounded apex, often incised at 1(—3) places near the centre, most deeply so when in fruit, glabrous outside or sparsely hirsute in a small basal part only, the third sepal on one side like the outer 2, on the other side like the inner 2. Corolla whitish or pinkish outside, bright red inside, funnel-shaped, with broad tube, not manifestly distinct from the upper part of the corolla, 15—18 mm high, limb distinctly 5-lobed with ca 5 mm deep incisions, basal part (ca 6 mm) glabrous, midpetaline bands hirsute outside, the lobes with a 1 mm broad, thin, glabrous wing on each side along the whole length. Stamens and style about as high as the corolla. Stamens inserted ca 3 mm above the corolla base; filaments filiform, dilated at their bases, glabrous, ca 10 mm long; anthers linear, ca $2\frac{1}{2}$ mm long. Ovary 2-celled, rounded-conical, ca 1 mm high, glabrous; style glabrous, 14 mm long; stigma biglobular, papillose. Disk annular, shallowly 5-lobed, ca $\frac{3}{4}$ mm high. Fruit ovoid, ca 15 mm long, deep red, 1-seeded. Seeds glabrous.

MALAY PENINSULA, Perak, Gopeng, *Kunstler* 732, fl. Sept. 1880 (K, type, SING); Larut, *Kunstler* 2307, fl. Sept. 1881 (BZ), 2726, fr. Jan. 1882 (K), 5672, fl. March 1884 (K, SING); Abu Salama, *Scortechini* 1362, fl. Oct. 1884 (K, SING); Kota, Larut, *Wray* 2856, fl. 1888 (SING); Kwala Dipang, *Ridley* 9704, fl. Oct. 1898 (K, SING); Sungei Brotal, *Ja'Amat* CF 39254, fl. Feb. 1935 (SING); Kelantan, Sungei Keteh, *Nur & Foxworthy* SF 12041, fr. Feb. 1924 (BZ, K, SING); Pahang, Bentong, *Burkill & Haniff* SF 16498, fl. Nov. 1924 (SING); Jerantut, *Burkill & Haniff* SF 16083, fr. Nov. 1924 (SING); Sungei Gesoh, Cameron Highlands, *Ja'Amat* CF 28275, fl. Sept. 1931 (SING); Kemaman, Bukit Kajang, *Corner* s.n., fr. Nov. 1935 (SING); Selangor, Kwala Lumpur, *Curtis* 2358, fr. Feb. 1890 (SING, type of *Lettsomia curtisii* Prain); Batu Caves Woods, *Ridley* 8220, fl. Dec. 1896 (SING); Pahang Track, *Ridley* s.n. & 8563, fl., resp. fr. July 1897 (SING); Bukit Kutu, *Goodenough* s.n., fl. Oct. 1899 (SING); Sungei Buluh, *Ridley* s.n., fl. March 1915 (K); Ulu Gombak, *Hume* 9175, fl. Oct. 1921 (SING), *Hume* 9627, fl. Nov. 1921 (SING); Ginting Simpoh, *Strugnell* CF 12101, fl. Oct. 1926 (SING); Ulu Gombak, *Strugnell* CF 12453, fl. Sept. 1926 (SING), *Strugnell* CF 12636, fr. Jan. 1927 (SING); Negri Sembilan, Sungei Ujong, *Alvins* s.n., fl. (SING); Bukit Tangga, *Nur* SF 11841, fl. & fr. Dec. 1923 (BZ, SING).

Distribution: known only from the Malay Peninsula.

Habitat: open jungle, up to 700 m altitude.

12. *Argyreia ooststroomii* Hoogl. spec. nov. Fig. 1 a—g.

Argyreia kunstleri Prain affinis, differt: bracteis late ovatis, subtus hirsutis, floribus paulo minoribus, sepalis subequalibus extus hirsutis, corolla intus hirsuta.

A woody twiner. Stems terete, to 3 mm, the old woody parts to 5 mm

Fig. 1 — a, b, c, d, e, f, g. *Argyreia ooststroomii* Hoogl. (p. 188), type collection; a. branch with terminal inflorescence; b. branch with axillary inflorescence; c. ovary with disk; d. inner side of the corolla, showing the hairs above the insertion of the stamens; e, f. segment of corolla (outer side) and stamen, with indication of the insertion-level of the latter; g₁—g₅. sepals 1—5; h, i, k, l. *Argyreia kunstleri* (Prain) Prain ex Van Ooststr. (p. 186); h. ovary with disk; i, k. segment of corolla (outer side) and stamen, with indication of the insertion-level of the latter; l₁—l₅. sepals 1—5; m, n, o, p, q. *Argyreia corneri* Hoogl. (p. 191), type specimen; m. branch with axillary inflorescence; n, o. segment of corolla (outer side) and stamen, with indication of the insertion-level of the latter; p₁—p₅. sepals 1—5; q. basal part of stamen. a, b, m: $\times \frac{1}{2}$; c, h: $\times 3$; d, e, f, g, i, k, l: $\times 2$; n, o, p: $\times 1\frac{1}{2}$; q: $\times 5$.

diam., fulvous-strigose with 0.2—1.0 mm long, partly slightly patent hairs. Leaves shortly petiolate; petiole 1—4½ cm long, hairy like the stems; blade ovate, acute or slightly acuminate at the apex, rounded at the base or slightly cordate, 6—14 cm long, 3½—8½ cm broad; upper surface sparsely strigose on the midrib, glabrous on the lateral nerves and intervenium, lower surface strigose on the midrib and lateral nerves, sparsely so on the intervenium; midrib and 5—8 nerves on either side of it prominent beneath, more or less impressed above, minor nervation reticulate, rather inconspicuous; nerves from the base slightly, near the margin strongly curving upward. Upper inflorescences forming a rather lax panicle, composed of more or less long-peduncled cymes, leafless or with a few small leaves, lower ones axillary; peduncles terete, longer than the petioles, 3—16 cm long, hairy like the stems, cymosely ca 25-flowered; bracts ovate, ca 5 by 4½ mm, rounded, often shallowly split at the apex, hirsute beneath, caducous. Pedicels ca 3 mm long, hairy like the peduncles. Sepals subequal in form, broadly ovate, ca 4 by 4½ mm, the outer 2 wholly fulvous-hirsute, the inner 2 with a ca ½ mm broad glabrous margin, the third one with one glabrous and one hirsute margin. Corolla white, tube violet mauve, inside dark purple, funnel-shaped with broad tube not manifestly distinct from the upper part of the corolla, ca 13 mm high, limb distinctly 5-lobed with ca 4 mm deep incisions, basal part (ca 3½ mm) glabrous, midpetaline bands hirsute outside, the lobes with a ½ mm broad, thin glabrous wing on each side along the whole length; corolla sparsely hirsute inside on a ca 4 mm high field above the insertion of the stamens. Stamens and style about as high as the corolla. Stamens inserted ca 2½ mm above the corolla base; filaments filiform, dilated at their bases, glabrous, ca 8 mm long; anthers linear, ca 2½ mm long. Ovary 2-celled, rounded-conical, ca 1 mm high, glabrous; style glabrous, 11 mm long; stigma biglobular, papillose. Disk cupular, shallowly 5-lobed, ca 1.2 mm high. Fruit (unripe?) ovoid, ca 12 mm long, pink, 1-seeded. Seeds glabrous.

MALAY PENINSULA, Kelantan, Chaning, *Ridley s.n.*, fl. Feb. 1917 (K, type, SING); Kuala Krai, *Haniff & Nur SF 10080*, fl. Jan. 1923 (SING); Trengganu, Kuala Berang, *Holttum SF 15320*, fr. May 1925 (BZ, K, SING).

Distribution: known only from the Malay Peninsula (Kelantan and Trengganu).

Habitat: on edge of secondary jungle (*Holttum*).

Remarks: The present species is related to *Argyreia kunstleri* (Prain) Prain ex Van Ooststr. and closely resembles that species, differing in the following characters: the broadly ovate bracts (in *A. kunstleri* linear-lanceolate), which are hirsute beneath (much less densely in *A. kunstleri*), the slightly smaller, ca 13 mm high flowers (15—18 mm in *A. kunstleri*), the subequal sepals (in *A. kunstleri* the innermost sepals are distinctly broader than the outer ones), which are all hirsute outside (in *A. kunstleri* much less densely hairy, the 2 inner ones practically glabrous), and the few hairs on the inner side of the corolla (which are absent in *A. kunstleri*).

13. *Argyreia reticulata* (Prain) Hoogl. stat. nov. — *Lettsomia penangia* var. *reticulata* Prain, J. As. Soc. Beng. 63, 2, 1894, p. 99; id., ibidem 74, 2, 1906, p. 325; Ridl., Fl. Mal. Pen. 2, 1923, p. 451.

A woody winder, to 10 m long. Stems terete, to 4 mm diam., sparsely strigose. Leaves slenderly petiolate; petiole 1—3 cm long, strigose; blade ovate to broadly lanceolate, $1\frac{1}{2}$ — $2\frac{1}{2}$ × as long as broad, slightly acuminate at the apex, obtuse to rounded at the base, $5\frac{1}{2}$ —10 cm long, $2\frac{1}{2}$ — $4\frac{1}{2}$ cm broad; upper surface sparsely strigose, later on glabrescent, lower surface sparsely strigose; midrib and 4—5 nerves on either side of it prominent beneath, impressed above, minor nervation reticulate, rather conspicuous beneath; nerves near the base rather straight, near the margin distinctly curving upward. Inflorescences axillary; peduncles terete, 2—9 cm long, strigose, cymosely 3—15-flowered; bracts linear-lanceolate, ca 5 by $\frac{1}{2}$ mm, strigose beneath, caducous. Pedicels ca 7—9 mm long. Sepals all ovate, the outer 2 ca $7\frac{1}{2}$ by 4 mm, the inner 2 ca 7 by 5 mm, broadly acute at the apex (*var. reticulata*), or the outer 2 ovate, ca 4 by 3 mm, broadly acute at the apex, the inner 2 transverse-oval, ca 4 by $4\frac{1}{2}$ mm, rounded, mucronate at the apex (*var. microcalyx*), the outer 2 rather sparsely strigose on the whole surface outside, the inner 2 on a ca $1\frac{1}{2}$ mm broad central line only, the third on one side like the outer 2, on the other side like the inner 2. Corolla waxy white, pale blue inside, funnel-shaped, ca 20—25 mm high, with distinct, ca $7\frac{1}{2}$ mm long tube; limb distinctly 5-lobed with ca 10 mm deep incisions; tube glabrous, midpetaline bands hirsute outside, the lobes with a $1\frac{1}{2}$ mm broad thin glabrous wing on each side along the whole length. Stamens and style about as high as the corolla. Stamens inserted ca 7 mm above the corolla base; filaments filiform, dilated at their bases, ca 18 mm long; basis with rather thin glandular hairs; anthers linear, ca 3 mm long. Ovary 2-celled, high-conical, 1.7 mm high, glabrous; style glabrous, ca 22 mm long; stigma biglobular, papillose. Disk annular, shallowly 5-lobed, ca 0.8 mm high. Fruit ovoid, ca 15 mm high, magenta, 1-seeded. Seeds glabrous.

MALAY PENINSULA, Perak, Ulu Kerling, *Kunstler 8544*, fr. March 1866 (K, type); Pahang, Frazer Hill, *Burkill & Holttum SF 7770*, fr. Sept. 1922 (K, SING), *Nur SF 11289*, fl. Sept. 1923 (SING); Selangor, Klang, *Kehding s.n.*, fl. Dec. 1878 (FI); Semangkok Pass, *Ridley s.n.*, fr. Jan. 1921 (K); Sg. Bulok For. Res., *Strugnell CF 27925*, fl. Jan. 1932 (SING).

Distribution: known only from the Malay Peninsula.

Habitat: open bamboo forest and on cleared places, 150—1400 m altitude.

Remarks: 1. Regarding the leaves only, the present species strongly resembles *Argyreia penangiana* (Choisy) Boerl., to which Prain referred it as a variety. From a study of the flowers, which Prain had not at his disposal, it is clear, however, that it is a distinct species differing from *Argyreia penangiana* primarily by the distinctly 5-lobed corolla, the narrower sepals, and the hairiness of the basal part of the stamens.

2. The sepals of *Kehding s.n.* and *Strugnell CF 27925* are smaller, particularly shorter, than those of the other collections; I have not been able to find additional differences in the flower or in other parts. I consider these specimens to represent a new variety of the species, differing from *var. reticulata* by the length and shape of the calyx only.

var. microcalyx Hoogl. var. nov.

Differt a *var. reticulata* calyce brevior, sepalis 2 externis late ovatis, ca 4×3 mm, sepalis 2 internis transverso-ovalia, ca $4 \times 4\frac{1}{2}$ mm. Holotypus: *Kehding s.n.* (FI); paratypus: *Strugnell CF 27925* (SING).

14. *Argyreia corneri* Hoogl. spec. nov. *Fig. 1 m—q.*

Species nova foliis ovatis, acuminatis, supra glabris, subtus sericeis; inflorescentiis axillaribus, uni- vel pauci-floris; sepalis late ovatis, extus dense sericeo-hirsutis; corolla 5-lobata, lobis margine glabra ad $2\frac{1}{2}$ mm lata; staminibus basi glandulosis; ovario 2-locellato.

A woody twiner, to 17 m long. Stems terete, to $2\frac{1}{2}$ mm diam., strigose. Leaves slenderly petiolate; petiole $1-2\frac{1}{2}$ cm long, strigose; blade ovate, acuminate at the apex, obtuse to rounded at the base, $3\frac{1}{2}-7$ cm long, 2—4 cm broad; upper surface glabrous except the strigose midrib, lower surface densely light-yellowish sericeous; midrib and 5—6 nerves on either side of it prominent beneath, impressed above, minor nervation reticulate, inconspicuous; nerves from the base slightly, near the margin strongly curving upward. Inflorescences axillary; peduncles terete, 10—18 mm long, densely sericeous with slightly distant hairs, cymosely 1—5-flowered, usually 1-flowered, the other buds probably not fully developing; bracts lanceolate, ca 4 by $\frac{1}{2}$ mm, densely sericeous, caducous. Pedicels ca 4—6 mm long, densely sericeous. Sepals broadly ovate, the outer 3 ca $8\frac{1}{2}$ by 7 mm, the inner 2 ca $6\frac{1}{2}$ by $5\frac{1}{2}$ mm; broadly acute to rounded at the apex, densely sericeo-tomentose outside, the margins of the 2 inner sepals and one of the third sepal less densely hairy, glabrous only in the lower 2—4 mm. Corolla pale pinkish white outside, rose-pink inside, funnel-shaped, ca 26 mm high, without distinct tube, limb distinctly 5-lobed with 15 mm deep incisions; lower 7 mm glabrous, above this midpetaline bands hirsute outside, the lobes with an up to $2\frac{1}{2}$ mm broad thin glabrous wing on each side along the whole length. Stamens and style white, about as high as the corolla. Stamens inserted ca 3 mm above the corolla base; filaments 18 mm long, broadened to the base from 5 mm above it, the lower 7 mm glandular-hairy; anthers linear, ca $3\frac{1}{2}$ mm long. Ovary 2-celled, conical, ca 1 mm high, glabrous; style glabrous, 23 mm long; stigma biglobular, papillose. Disk annular, ca $\frac{1}{2}$ mm high. Fruit unknown.

MALAY PENINSULA, Pahang, Kemaman, Ulu Bendong, *Corner SF 30140*, fl. Nov. 1935 (SING, type).

Distribution: known only from the Malay Peninsula (Pahang).