

THE CONVULVULACEAE OF MALAYSIA, VII¹⁾

by

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(Issued 1. IX. 1952)

New and noteworthy species of *Argyreia* from Malaysia.

In addition to my papers on the genus *Argyreia* in Malaysia I can here give a few descriptions of new species, mainly from Sumatra and Borneo, and some critical notes on others. A revision of the species of Malaysia as a whole, including those of the Malay Peninsula and the Philippine Islands will be published in the near future in *Flora Malesiana*.

Argyreia linggaensis Van Ooststr., nov. spec.

Volubilis glabra vel in axillis petiolorum, in petiolis et in nervis pilis appressis nonnullis praedita. Ramuli teretes vel striati. Folia (oblonga), ovata vel ovato-elliptica, (10—)12—13(—16) cm longa, (4—)7(—9) cm lata, basi rotundata, truncata vel leviter cordata, apice acuta vel breviter acuminata, mucronulata; nervo mediano nervis lateralibus arcuatis utrinque 5—7 et nervis minoribus reticulatis subtus prominentibus; petiolis (2—)4—6 cm longis, sulcatis. Inflorescentiae axillares, pedunculis rectis vel curvatis, (5—)7 cm longis, subangulatis, apice cymoso-ramosis, 1—3(—5)-floris, ramis primariis 5—10 mm longis, pedicellis 4—5(—7) mm longis. Sepala exteriora 2 ovata, acutiuscula, c. 5 mm longa, interiora 3 paullo longiora, ad 6 mm longa, late ovata obtusa, marginibus tenuioribus. Corolla infundibuliformis, c. 5½ cm longa, glabra, limbo subintegro. Filamenta c. 12 mm supra basin corollae inserta, c. 17 mm longa, glabra, basi breviter pilosa excepta. Ovarium glabrum. Discus annularis, sublobatus.

LENGGA ARCHIPELAGO, P. Singkep, Bt. Tjikalu, roadside, 30 m alt., fl. Aug. 7, 1919, "flowers red", *Bünnemeijer 7331* (type, in herb. Bogor.); id., P. Singkep, Kp. Raja, edge of forest, 20 m alt., young flowers Aug. 1, 1919, "twiner", *Bünnemeijer 7099a* (herb. Bogor.).

SUMATRA, East Coast, Siak, Sungei Kelantan, *Ridley s.n.*, 1891 (herb. Singapore).

The description has been drafted after the type specimen, *Bünnemeijer 7331*; the data in parentheses refer to the other specimens mentioned above. The leaves of the specimens from P. Singkep are ovate or ovate-elliptic, those of the plant from Sumatra are oblong.

¹⁾ Part I in *Blumea* III, 1 (1938) p. 62—94; part II in *Blumea* III, 2 (1939) p. 297—371; part III in *Blumea* III, 3 (1940) p. 481—582; part IV in *Blumea* V, 2 (1943) p. 339—411; part V in *Blumea* V, 3 (1945) p. 689—691; part VI in *Blumea* VI, 2 (1950) p. 337—348.

The species has the glabrous corolla and the form of the leaves in common with *A. nuda* Van Ooststr. (in *Blumea* V, 3, 1945, p. 686); the minor nervation of the leaves is more distinctly reticulate and much more prominent beneath than in that species; the peduncles are longer, the inner sepals are narrower, broadly ovate (in *A. nuda* elliptic-orbicular); the corolla is longer, c. 5½ cm (in *A. nuda* 3½ cm).

Argyreia nuda Van Ooststr. in *Blumea* V, 3 (1945) p. 686.

The original specimens, *Binnemeijer* 375 and 436, were discovered on the slopes of Mount Talakmau, Ophir district, West Coast of Sumatra (both in herb. Bogor.). A third specimen, *Yates* 1838, in herb. New York Bot. Garden, was found in Asahan, Bandar Pulu, East Coast of Sumatra. This specimen has the leaves somewhat broader; they are ovate, 14—17 × 9—12 cm, with 6—7 lateral nerves on either side of the midrib; the petiole has a length of 7—10 cm. The berries are ellipsoid and are only 10—12 mm long. The specimen has originally been identified as being *Kadsura (cauliflora Bl. ?)*.

Argyreia crispa Van Ooststr., nov. spec. Fig. 1.

Frutex scandens, ramulis petiolis et inflorescentiis dense pilosis, pilis brevibus subpatentibus. Ramuli teretes vel apicem versus subangulati. Folia petiolata, petiolis 2—6 cm longis, basi teretibus, apicem versus plusminusve applanatis; laminis ovatis vel ovato-oblongis, apice acutis vel obtusiusculis, ad basin subcoarctatis, 8—13 cm longis, 4—8 cm latis, supra glabris, subtus pilosis, praesertim in nervis; nervo mediano supra plano vel paulo impresso, subtus prominente, nervis lateralibus utrinque 5—6 subtus prominulis, nervis minoribus indistinctis. Pedunculi fructiferi teretes 8—22 cm longi, apice corymbosoramosi, ramis primariis 1—3 cm longis, pedicellis 3—5 mm longis. Bracteae desunt. Sepala sub fructu inaequalia, exteriora 3 ovata obtusa, c. 10 mm longa, extus pilosa intus glabra, margine valde crispata, interiora 2 ovato-oblonga, obtusa, c. 8—9 mm longa, plana vel paulo concava, extus in parte media pilosa, marginibus latis glabris. Bacca ellipsoidea, 12—14 mm longa, purpureo-rubra; semen 1, ellipsoideum.

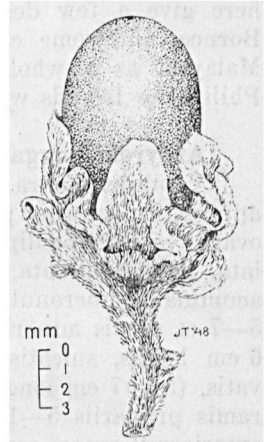


Fig. 1. *Argyreia crispa* Van Ooststr., fruiting calyx.

SUMATRA, Atjeh, along the road from Takigeum to Bireuen; "road to Balique, edges of and in 1st growth jungle. Alt. 3300 ft. Vine climbing. Fruits light purplish red, glossy. Leaves hairy underneath. Flower remnants dry", *W. N. & C. M. Bangham* 840, fr. Jan. 11, 1932, *type* in herb. Kew, duplicates in herb. Arnold Arboretum, New York Botanical Garden, Singapore. Another specimen collected by *W. N. & C. M. Bangham* (n. 1131), along the Medan-Brastagi road, "kilom. 59—61. Alt. 4100 ft. Virgin jungle mixed with second growth jungle, hilly, mountainous. Vine, climbing. Fruits rose, glossy", with fruits and calyx remnants probably belongs here (herb. Arnold Arboretum, New York Botanical Garden).

Both numbers bear the name *Lettsonia robinsonii* Ridl. [= *Argyreia robinsonii* (Ridley) Van Ooststr.] and are mentioned under that name by

Merrill in *Contrib. Arnold Arbor. VIII* (1934) p. 145. They are, however, most probably specifically different from it and represent a new species. According to Ridley's description *A. robinsonii* has the sepals oblong, truncate and glabrous; the curious crisped margins of the sepals are not mentioned by that author.

***Argyreia pseudorubicunda* Van Ooststr., nov. spec**

When preparing my revision of the genus *Argyreia* for the Malaysian region (*Blumea* V, 1943, p. 352—383) the type of *A. rubicunda* Choisy was unknown to me. Afterwards I received specimens from the Kew herbarium, collected by Griffith in Malacca, which by several authors have been considered to belong to that species, and in my opinion they are right. A description of *A. rubicunda*, as far as the scanty material enables me to give may follow here:

A woody twiner. Stems solid, terete or slightly angular, densely tomentose as are the petioles and the inflorescences with light fulvous hairs. Leaves petiolate; petiole short and stout, up to 5 cm long; blade elliptic or sometimes ovate-elliptic, shortly acuminate at the apex or obtuse with a short acumen, rounded at the base, 8—16 cm long, 4—10 cm broad, thinly coriaceous, glabrous above or slightly hairy on the midrib, short-pilose to tomentose beneath, more densely so on the nerves. Midrib and 7—9 pairs of lateral nerves impressed above, prominent beneath, minor nerves slightly visible above, indistinct beneath. Inflorescences axillary; peduncles long, slender, terete, 8—15 cm, in fruit up to 20 cm long, cymosely branched at the top, several- to many-flowered; the cyme 6—12 cm diam.; pedicels short, thick, 2—4 mm long; bracts small, deciduous. Sepals strongly concave, two outer ones orbicular or slightly broader than long, rounded at the top, 6—7 mm long, densely light fulvous tomentose outside, glabrous inside; third sepal transverse-elliptic, 6 mm long, outside tomentose with one glabrous margin, inside glabrous; two inner sepals transverse-elliptic, 6 mm long, outside densely sericeous with two glabrous margins. Corolla pink (*Prain*), infundibuliform-campanulate, deeply 5-lobed; the lobes ovate-oblong (?) with densely hairy lanceolate midpetaline bands and glabrous margins. Disk annular with slightly undulate margin. Fruit pinkish white (*Griffith*) or purplish red (*Maingay*), at base enclosed by the cupulate to shortly funnel-shaped calyx, ovoid, c. 14 mm long, 8—9 mm broad, 1-seeded; fruiting calyx c. 8 mm high, c. 12—13 mm diam., tomentose outside.

Specimens from Sumatra, formerly identified by the present author as *A. rubicunda* (see *Blumea*, l. c. p. 371) appear to be different. They belong to a distinct, hitherto unknown species, ***A. pseudorubicunda* Van Ooststr., nov. spec.:**

Ab *Argyreia rubicunda* quacum in herbariis et in literatura confusa est, differt habitu minus robusto, sepalis duobus exterioribus ovato-triangularibus, corollae lobis angustioribus, lineari-lanceolatis, extus adpresse sericeis, apice lobulis duobus glabris, indumento minus lanato-tomentoso praesertim in inflorescentia.

Type: Cramer 14, Sumatra, Benkulen, Sukaradja-Kenali, fl. Aug. 27, 1915, in herb. Leiden; another specimen in herb. Bogor.

For a detailed description and an enumeration of the specimens studied

by the author see *Blumea* l. c. p. 371—372. In addition to this description, the differences between *A. rubicunda* and *A. pseudorubicunda* may be listed here:

A. rubicunda Choisy

Stems, petioles and inflorescences densely tomentose with light fulvous hairs. 2 outer sepals strongly concave, \pm orbicular or slightly broader than long, 6—7 mm long, up to 8 mm broad; 3 inner sepals transverse-elliptic, 6 mm long and 8½ mm broad.

Disk annular with slightly undulate margin.

Corolla lobes ovate-oblong (?), with lanceolate hairy midpetaline areas and glabrous margins.

Distribution: Malay Peninsula.

A. pseudorubicunda Choisy

Stems, petioles and inflorescences densely and shortly appressed-pilose.

2 outer sepals not strongly concave, ovate-triangular, obtuse, 5 mm long and 4½—4¾ mm broad; third sepal \pm orbicular or somewhat transverse-elliptic, 5—6 mm long and 6—7 mm broad; two inner sepals transverse-elliptic, 5—6½ mm long and 7½—10 mm broad.

Disk more or less 5-angular, with slightly 5-lobed margin.

Corolla lobes linear-lanceolate, outside hairy with exception of 2 small apical glabrous wings.

Distribution: Sumatra.

Argyreia glabra Choisy in Zoll., Syst. Verz., 2. Hft. (1854) p. 128, 130.

Through the kindness of the Director of the herbarium of Genève, I had the opportunity to study fragments of the type of *A. glabra*. These fragments fully agree with a flowering branch in herb. Bogor., of which the origin is unknown. A description of the species may follow here:

A woody twiner. Stems terete, longitudinally wrinkled, shortly and appressedly pilose, fulvous. Leaves petiolate, petiole 1—1.5 cm long, pilose like the stems; blade ovate, acute at the apex, rounded at the base, 5—8 cm long, 2—4 cm broad, appressed-pilose on both sides with short, rigid hairs, more densely beneath than above; midrib impressed above, prominent beneath, lateral nerves c. 10—11 on either side of the midrib, prominent beneath; minor nervation indistinct. Inflorescences in the upper leafaxils; peduncle angular, densely appressed-pilose with short fulvous hairs as are the branches of it and the pedicels; c. 5 cm long, umbellately cymose, few-to several flowered; primary branches of the cyme c. 1 cm long; pedicels up to 5 mm long; bracts ovate, obtuse, c. 4—5 mm long, densely appressed-pilose. All sepals densely appressed-pilose with fulvous hairs, the 3 exterior ones ovate-elliptic, obtuse, c. 6 mm long, the 2 interior ones ovate, rounded, a little shorter. Corolla 5-fid, the tube at least 10 mm long, glabrous, widened above; the lobes ovate, c. 15 mm long, patent to reflexed, the midpetaline bands densely sericeous. Stamens inserted in the corolla tube, c. 6 mm above its base; filaments filiform, dilated and densely pilose at their base, c. 14 mm long. Style filiform, glabrous; ovary glabrous, 2-celled, disk annular with slightly undulate margin, c. ¾ mm high.

A. glabra was originally described from the island of Lombok, with *Zollinger 985* from Labuan Tring as the type. Specimens from Sumatra, which I formerly supposed to be identic (see my paper in *Blumea* V, 1943, p. 373) appear to be different. They agree with the type of *Lettsomia parviflora* Ridley [*Argyreia parviflora* (Ridley) Van Ooststr. in *Blumea*, l. c. p. 382], and the description given in my paper on p. 373 under "*A. glabra*" refers to *A. parviflora*. The two species mainly differ in the following characters:

A. parviflora (Ridley) Van Ooststr.

Stems, petioles and leaves glabrous or nearly so.
 Lateral nerves 5—8.
 Minor nerves parallel, distinctly visible beneath.
 Pedicels 5—9 mm long.
 Bracts linear, sparsely pilose, lower ones c. 12 mm long.
 Sepals sparsely pilose with very short hairs, the inner ones with glabrous margins.
 Outer sepals ovate-triangular, c. 5 mm long.
 Inner sepals orbicular to transverse-elliptic, c. 6—6.5 mm long.
 Corolla tube 5—6 mm long.
 Corolla lobes c. 12—13 mm long.
 Filaments sparsely pilose at base.

A. glabra Choisy

Stems, petioles and leaves appressed-pilose.
 Lateral nerves 10—11.
 Minor nerves indistinct beneath.
 Pedicels up to 5 mm long.
 Bracts ovate, densely pilose, c. 4—5 mm long.
 Sepals densely pilose with longer hairs; no glabrous margins.
 Outer sepals ovate-elliptic, c. 6 mm long.
 Inner sepals ovate, c. 5.5 mm long.
 Corolla tube c. 10 mm long.
 Corolla lobes c. 15 mm long.
 Filaments densely pilose at base.

Argyreia erinacea Van Ooststr. in *Blumea* V, 2 (1943) p. 374.

The type of *A. erinacea*, *Clemens* 30401, in herb. Bogor., was found in British North Borneo, on Mt. Kinabalu, Tenompok, at 5000 ft. elev.; a second specimen *Clemens* 26635, in herb. Bogor., near the same locality. The specimens were collected with young flowers and with fruits, respectively in Febr. 1932 and in Sept. 1931. *Carr*, *Singapore Field no. 26718*, in herb. Singapore, also from Mt. Kinabalu, Menetendok river, c. 2800 ft. alt., flowering March 23, 1933, "calyx green; corolla segments purple with white apex; stamens white, base purple", seems to be identic, though there are some points of difference, mainly as to the form of the leaves. These are narrower than in the type, ovate to ovate-lanceolate, rounded at the base and gradually attenuate towards an acute mucronulate apex; they measure 7—9 × 3—4 cm; the longest peduncles are up to 10 cm, and the pedicels up to 3 mm long. The corolla of which only a not fully developed one was available for study in the original material could be examined in the *Carr* specimen: the tube is 6 mm long and glabrous, the lobes are ovate, c. 17 mm long and c. 11 mm broad and show a densely hairy midpetaline band and glabrous margins.

Argyreia discolor Van Ooststr., nov. spec.

Frutex scandens, ramulis teretibus, dense subadpresse pilosis, pilis brevibus fulvis. Folia petiolata, petiolis 2—2.5 cm longis, supra longitudinaliter sulcatis, ut ramuli pilosis; laminis ovatis, apicem subobtusum versus attenuatis basi subcordatis, 6—8 cm longis, 3—5 cm latis, subcoriaceis, supra viridis glabris vel in nervo mediano impresso pilis strigillosis nonnullis praeditis, subtus purpureis sparse breviter pilosis, in nervo mediano prominente et in nervis lateralibus utrinque 6—7 densius pilosis. Inflorescentiae axillares apice congeste umbellato-cymosae, pedunculis 4—7 cm longis, ut cymae ramuli, pedicelli et bractee minutae dense breviter fulvopilosis; cymae ramulis primariis ad 10 mm longis, angulosis, ramulis sequentibus brevioribus, pedicellis 1—3 mm longis. Sepala dua exteriora late ovato-triangularia obtusa, c. 3.5 mm longa, externe dense subadpresse bre-

viter pilosa, interne glabra; sepalum tertium orbiculare vel transverso-ellipticum apice rotundatum, c. 4 mm longum, externe margine uno latere excepto dense breviter pilosum, interne glabrum; sepala dua interiora orbicularia vel transverso-elliptica externe marginibus lateralibus latis exceptis dense breviterque pilosa, interne glabra. Corolla 5-partita, tubo c. 6 mm longo externe glabro, lobis ovato-oblongis obtusis ad c. 17 mm longis, fasciis mesopetalis externe sericeis marginibus glabris. Filamenta ad orem tubi inserta, c. 13 mm longa glabra, basi incrassata. Ovarium 2-loculare glabrum; stylus c. 18 mm longus, glaber; discus 5-lobatus, c. 1 mm altus.

BORNEO: British North Borneo, Tenompok, c. 5000 ft. "Climber. Leaves green above, purple with paler nerves beneath. Calyx purple, densely silvery hairy outside. Corolla purple, tipped paler, densely silvery hairy outside". *C. E. Carr, Singapore Field no. 26872*, fl. April 5, 1933, *type* in herb. Singapore.

This species is very closely related to *A. erinacea* Van Ooststr. from which it differs in the much less strigillose indument on the branches, petioles, peduncles, pedicels and sepals. The sepals are smaller and of a purple colour and densely silvery hairy outside with much shorter and less rigid hairs. The leaves are green above and purple beneath with paler nerves. The corolla is purple, paler tipped, and the midpetaline bands are densely silvery hairy outside.

***Argyreia congesta* Van Ooststr., nov. spec. Fig. 2, *d—f*.**

Argyreia osyrensis (fig. 2, *a—c*) valde similis quoad formam inflorescentiae, bractearum et sepalorum; differt forma et magnitudine corollae tubo glabro 5 mm longo, lobis linearibus multo longioribus et basi filamentorum glabra.

BORNEO, British North Borneo, Bettotan near Sandakan, "climber, fls. pink, tips white", *C. Boden-Kloss, Singapore Field no. 19010*, fl. July 28, 1927, *type* in herb. Singapore; idem, *C. Boden-Kloss, Singapore Field no. 19125*, fl. Aug. 15, 1927, herb. Singapore; herb. Univ. Calif. A duplicate specimen of no. 19010 in the herb. of the New York Botanical Garden, is labeled Bettotan River, near Sandakan, fl. July 27, 1927; so is a specimen in herb. Univ. Calif.

A woody twiner. Stems terete, densely appressed-pilose to tomentose, with short fulvous hairs. Leaves petiolate; petiole 3—4(—8) cm long, pilose like the stems, grooved; limb narrowly ovate or ovate, attenuate towards the acute or acuminate apex, rounded at the base, 8—14(—17) cm long, 3.5—8(—9) cm broad, the lower surface densely appressed-pilose with straight or slightly curved hairs, or almost tomentose in youth; the upper surface less densely hairy with more rigid hairs; hairs fulvous, with a thickened base; midrib and 8—10 pairs of lateral nerves distinctly visible on both sides. Peduncles axillary, terete, rather slender, 4—10 cm long, densely pilose like the stems; flowers in a small dense, more or less capitate cyme; bracts subpersistent, broadly obovate, broadly rounded to truncate at the top, c. 10—12 mm long, densely appressed-pilose outside, glabrous inside; branches of the cyme short, pedicels shorter than the sepals, 2—4 mm long. Sepals concave, elliptic-oblong, obtuse; two exterior ones c. 8 mm long, outside pilose like the bracts, inside glabrous, third sepal slightly oblique, c. 7 mm long, outside pilose, with one glabrous margin; two interior sepals c. 6.5 mm long, nearly glabrous. Corolla deeply 5-fid, pink, the lobes with

white tips; tube c. 5 mm long, glabrous; lobes linear, c. 17 mm long, 2—2.5 mm broad, densely hairy outside and with 2 glabrous lobules at their top. Filaments inserted at the mouth of the tube, glabrous, c. 12 mm long.

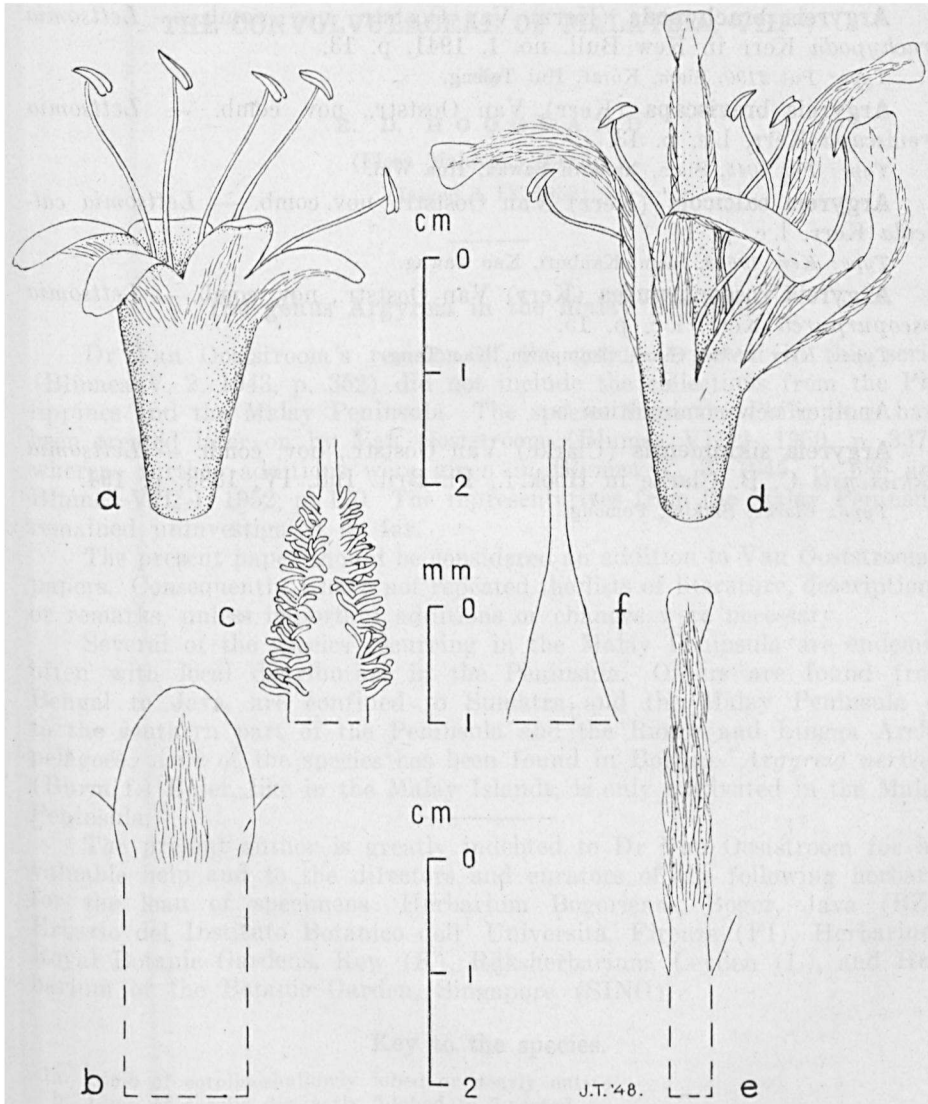


Fig. 2. *a—c*: *Argyreia osyrensis* (Roth) Choisy, *a*: corolla; *b*: corolla lobe; *c*: base of filament; *d—f*: *Argyreia congesta* Van Ooststr., *d*: corolla; *e*: corolla lobe; *f*: base of filament.

Disc low, annular, undulate at the margin. Ovary 2-celled, glabrous. Style glabrous, c. 16 mm long.

Through the kindness of the Director of the Royal Botanic Gardens, Kew, I was enabled to study some of the types of *Lettsomia* species from Siam, described by Kerr in Kew Bulletin no. 1, 1941, which led to make the following new combinations:

Argyreia brachypoda (Kerr) Van Ooststr., nov. comb. — *Lettsomia brachypoda* Kerr in Kew Bull. no. 1, 1941, p. 13.

Type: Put 2190, Siam, Korat, Hui Taleng.

Argyreia breviscapa (Kerr) Van Ooststr., nov. comb. — *Lettsomia breviscapa* Kerr, l. c. p. 13.

Type: Put 4045, Siam, Nakawn Sawan, Hua Wai.

Argyreia calcicola (Kerr) Van Ooststr., nov. comb. — *Lettsomia calcicola* Kerr, l. c. p. 14.

Type: Kerr 19658, Siam, Kanburi, Kao Tawng.

Argyreia roseopurpurea (Kerr) Van Ooststr., nov. comb. — *Lettsomia roseopurpurea* Kerr, l. c. p. 15.

Type: Kerr 11531, Siam, Chumpawn, Kao Tong.

Another new combination is:

Argyreia sikkimensis (Clarke) Van Ooststr., nov. comb. — *Lettsomia sikkimensis* C. B. Clarke in Hook. f., Fl. Brit. Ind. IV, 1883, p. 194.

Type: Clarke, Sikkim, Pomong.