

New species, new combinations, and new records in Convolvulaceae for the *Flora of Thailand*

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ABSTRACT. This paper makes necessary taxonomic and nomenclatural adjustments prior to publication of the account of Convolvulaceae for the Flora of Thailand. Two new species of *Argyreia* Lour., *A. variabilis* Traiperm & Staples and *A. leucantha* Traiperm & Staples, are described and illustrated. The first reports of 13 species in *Argyreia*, *Ipomoea* L., *Merremia* Dennst. ex Endl., *Dichondra* Forst. & Forst.f., and *Cuscuta* L. are documented for the Thai flora. Four taxonomic and nomenclatural problems are resolved so that the names and species concepts are clear for the flora account; these include four new combinations and six reductions to synonymy. Voucher specimens are cited to document the new species and the new distribution records for Thailand reported here.

KEYWORDS: Convolvulaceae, distribution, new species, nomenclature, Thailand.

INTRODUCTION

Beginning in 1985, the first author undertook study of the Convolvulaceae of Thailand, building slowly towards an account of the family for the *Flora of Thailand*. By far the most difficult genus proved to be *Argyreia* Lour., which has never been revised in its entirety and for which floristic treatments for continental Asia are wholly out of date and inadequate. Independently, the second author undertook a taxonomic study of *Argyreia* in Thailand for her M.Sc. degree at Chulalongkorn University, completed in 2002. This joint paper brings together the results of these two independent trains of research and makes a number of taxonomic rearrangements that are necessary prior to publication of the flora account. Most importantly, two new species of *Argyreia*, first recognized in the second author's M.Sc. thesis, are here given scientific names. Several taxonomic problems in *Argyreia* are discussed and resolved, the second author having identified the problems and the first author having contributed information towards their resolution. Notes, new records, and nomenclatural changes are also presented for species of *Cuscuta* L., *Dichondra* Forst. & Forst. f., *Ipomoea* L., and *Merremia* Dennst. ex Endl. The results have been grouped in categories: taxonomic & nomenclatural problems, including new reductions to synonymy; new species descriptions; new records for Thailand. Within each category the arrangement is alphabetical by genus/species. All specimens cited have been seen, usually by the first author, except in the case of some type specimens; these have been indicated as "n.v." Exclamation points have been added following herbarium acronyms in a few cases to remove ambiguity.

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I. TAXONOMIC & NOMENCLATURAL PROBLEMS

Four taxonomic and nomenclatural problems are discussed first to provide background for the scientific names used in the *Flora of Thailand* account.

A. The *Argyreia splendens* (Hornem.) Sweet problem

In herbaria the name *Argyreia splendens* has been applied to at least four distinct species, all of which share the common features of silvery sericeous leaf undersides and showy flowers of a purplish color. Beyond these generalities, however, botanists in various Asian countries have applied the name in divergent ways. We have been guilty of this as well and as it now turns out, the Chinese and Thai plants G.S. annotated over many years as *A. splendens* are not that species at all. In fact, the typification of the basionym for the name is complicated and it has been necessary to choose a neotype in order to stabilize its use.

As pointed out by Fang & Staples (1995: 318) *Argyreia splendens* has to be based on *Convolvulus splendens* Hornem. (1819) and not on *Lettsomia splendens* Roxb. (1824), as has long been established practice. Typification for Hornemann's name, however, is complex. The protologue, published in a seed catalogue for a botanical garden in Denmark, states that a sterile plant ("Florentem non vidi") cultivated in Copenhagen was the source for the brief description. Only a single sheet was located in C (Fig. 1) that is bona fide material from the historic Hornemann Herbarium. This sheet could be original material for *Convolvulus splendens* Hornem. On closer inspection, the sheet does not have the Hornemann name on it, it has no date or provenance linking it to the protologue, and it is labeled "*Ipomoea splendens*", a name that was not published until 1824, five years after Hornemann's publication of *C. splendens*. Furthermore, the specimen on the sheet—one detached leaf and one detached flower—does not match the protologue closely either. The flower is that of *Ipomoea mauritiana* Jacq. and because the protologue specifically says "Florentem non vidi" the flower has to be excluded as original material. The leaf, which is vaguely trilobed in shape, is glued on the sheet so that the underside is hidden; this makes it impossible to see if the leaf matches the protologue, which states: "foliis ovato-lanceolatis acuminatis subtus nervosis sericeis." It is the final three words that are crucial: foliage of *I. mauritiana* is typically glabrous, whereas several *Argyreia* spp. have leaves that are silvery sericeous underneath. Also, leaves of *Argyreia* spp. are typically entire, never lobed, whereas leaves of *I. mauritiana* vary from entire to shallowly lobed to deeply digitately divided. On balance, what is visible of this leaf suggests that it came from a plant of *I. mauritiana* Jacq. and is not an *Argyreia* at all. Thus, the only specimen now extant in Copenhagen that belonged in Hornemann's herbarium has to be excluded as original material for the name *Convolvulus splendens* Hornemann, and a neotype must be chosen to typify this name. The following nomenclatural summary does so.

***Argyreia splendens* (Hornem.) Sweet**, Hort. Brit. Ed. 1. 289. 1826.—*Convolvulus splendens* Hornem., Hort. Bot. Hafn. suppl. 123. 1819. Type: India, Calcutta, cultivated in Hort. Bot. Calcutta, 8 Dec. 1814, [*F. Buchanan-Hamilton* sub] *Wallich Cat.* 1361.B (K-W, neotype, chosen here, barcode K000197075). Fig. 2.—*Lettsomia splendens* Roxb., Fl. Ind. 2: 75. 1824. Type: India, Calcutta, cultivated in Hort. Bot. Calcutta, [*Roxburgh* sub] *Wallich Cat.* 1361.1

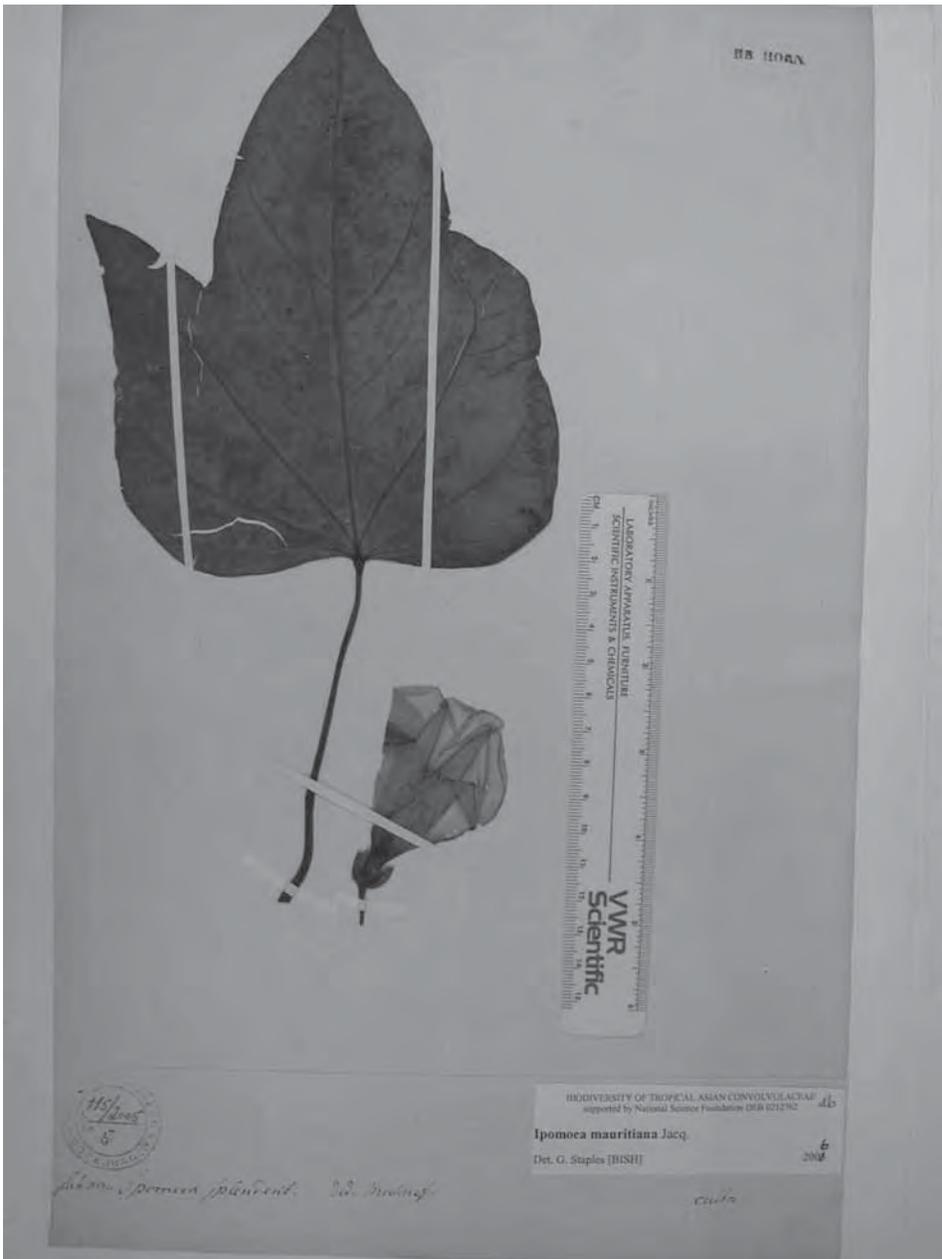


Figure 1. Sheet labeled “*Ipomoea splendens*” from Herbarium Hornemann (C). This has been rejected as original material for *Convolvulus splendens* Hornem.

(**K-W**, lectotype, chosen here, barcode K000197074).—*Ipomoea splendens* (Roxb.) Sims, Bot. Mag. 53: tab. 2628. 1826. Fig. 3.

The two specimens above are both the same species and may have originated from the same plant in the Calcutta Botanic Garden. Sheet 1361.1 bears an annotation in the bottom right corner "*Convolvulus (Lettsomia) splendens* Roxb HBC" that may be in Roxburgh's own hand; this specimen is the best choice as lectotype for *L. splendens* Roxb. The sheet labeled 1361.B has a handwritten ticket at top left in Francis Buchanan-Hamilton's handwriting that dates it in 1814; this sheet is old enough to pre-date the Hornemann name and is chosen as neotype for *C. splendens*. Hornemann's protologue notes that the plant grown in Copenhagen was introduced there in 1818 and the habitat is "in Ind. orient. ad Chittagong"—identical with Roxburgh's entry from both *Hortus Bengalensis* (Roxburgh 1814) and *Flora Indica* (Roxburgh 1824), which raises the possibility that Roxburgh, or his successor and literary editor, Wallich, sent seeds to Hornemann from the plant growing in the Calcutta Botanic Garden. The Buchanan-Hamilton specimen at 1361.B predates Hornemann's acquisition of the seeds from Calcutta and may well have been made from the same plant that provided that seed.

As will be immediately clear from Fig. 2 and 3, the true *A. splendens* has a distinctive aspect that is evident from herbarium sheets: ovate-lanceolate leaves, dark green above and silvery hairy below; long peduncles (several times longer than the subtending leaf petiole) bearing crowded, even capitate, cymose clusters of showy flowers; sepals that are equal in length, broadly elliptic to subcircular in shape, and densely silvery hairy on the backs; funnellform, dark colored corollas with a vaguely 5-lobed limb. This plant, originating from Bangladesh, looks nothing like what has been called *A. splendens* in SE Asia and tropical China. Unfortunately, we have long misinterpreted *Argyreia splendens* and many specimens we have annotated as such are all wrongly named. The Thai plants, in part, agree more closely with *A. laotica* Gagnep., and in part, with a narrowed concept for *A. mollis*, discussed next. It will be necessary to re-examine the Chinese material to evaluate its correct taxonomic status and the name for it.

B. The re-separation of *Argyreia mollis* (Burm.f.) Choisy and *A. obtecta* (Choisy) C.B. Clarke

Van Ooststroom (1943) and Van Ooststroom & Hoogland (1953) applied *Argyreia mollis* in a broad sense that encompassed plants from Burma to China and southward through Thailand and Malesia as far as Bali. Van Ooststroom included as synonyms *A. obtecta* (Choisy) C.B. Clarke, among others. Study by the second author in her M. Sc. dissertation disclosed that Thai plants can readily be separated into two entities based on a variety of morphological characters. The first author has compared these to type specimens for several of the names synonymized by Van Ooststroom and found that these two entities correspond to *A. obtecta* and *A. mollis* in a narrowed sense (e.g., Staples & Jacquemoud 2005). The following table enumerates the characters useful for distinguishing these two from *A. laotica* and genuine *A. splendens*, which does not appear to occur in the Flora of Thailand area (see A above).

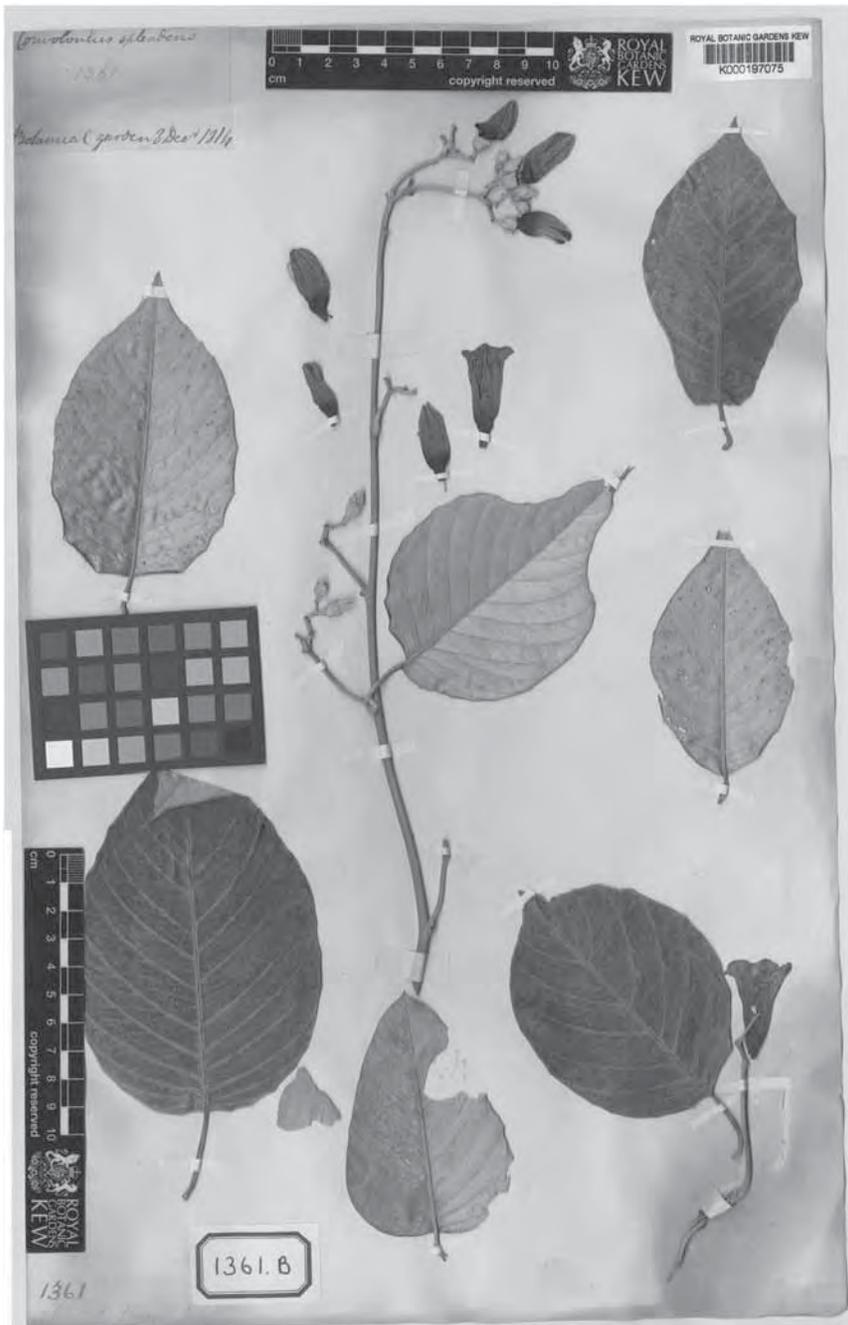


Figure 2. Wallich Cat. 1361.B, *Argyreia splendens*, (K-W). This sheet is chosen as neotype for *Convolvulus splendens* Hornem. Image reproduced with permission of the Board of Trustees, Royal Botanic Gardens, Kew.



Figure 3. Wallich Cat. 1361.1, *Argyreia splendens*, (K-W). This sheet is chosen as lectotype for *Lettsomia splendens* Roxb. Image reproduced with permission of the Board of Trustees, Royal Botanic Gardens, Kew.

Table 1. Comparison of four similar and often confused species of *Argyrea*.

Characters	<i>A. obtecta</i>	<i>A. laotica</i>	<i>A. mollis</i>	<i>A. splendens</i>
indumentum of leaf upper side	Appressed strigose	Glabrous	Glabrous	Glabrous
Indumentum of leaf underside	Sericeous but not shining	Shining silvery to coppery sericeous	Shining silvery sericeous	Shining silvery or whitish sericeous
Blade shape	Often obovate (widest above midpoint)	Ovate, elliptic, lanceolate (widest at or below midpoint)	Ovate to elliptic (widest at or below midpoint)	Ovate to broadly elliptic (widest at or below midpoint)
No. 2° veins/side	7–9	10–12	10–12	12–16
2° vein prominence	Leaf surface smooth (veins not evident)	Veins prominent above	Veins prominent above	Veins prominent above
Corolla shape	Campanulate	Funnelform	Funnelform	Funnelform
Calyx	Sepals subequal outer 2 < inner 3	Sepals unequal outer 2 >> inner 3	Sepals subequal inner 3 smaller	Sepals equal (or outer longer than inner)
Sepals	Ovate to broad ovate, inner with dark glabrous margins	Elliptic to lanceolate, outer 2 with undulate apex	Elliptic, apex obtuse	Orbicular to broadly elliptic
Sepal pubescence	Inner sepal margins glabrous, drying dark	All sepals hairy out to margins	All sepals hairy out to margins	Outer sepals hairy to margins (inner not visible)
Stem	Robust	Slender	Slender	Robust
Peduncle length	Short	Short	Short	Long

Given these clear morphological differences, we have taken up the name *A. obtecta* for a widespread species in Thailand, Burma, peninsular Malaysia, and possibly ranging across Indochina to southeastern China. *Argyrea mollis*, as used here, is a species ranging from western Thailand southward through Malaysia into the Indonesian islands. The name *A. splendens*, as used in the past by Staples in herbarium annotations and in publications, corresponds in part to *A. laotica* and in the greater part to *A. mollis* as defined here. Likewise the specimens cited by Traiperm in her M.Sc. thesis as *A. splendens* are a mixture of *A. laotica* and *A. mollis*. A list of all Thai specimens in this complex of four species, with

corrected determinations, will be made available on-line via the BRAHMS Projects website (<http://herbaria.plants.ox.ac.uk/bol/databases/default.aspx>) when the full account of the family is published in the Flora of Thailand.

C. The *Argyreia confusa* situation

There is a considerable confusion among several named species of *Argyreia* from the Indian subcontinent, involving plants called *A. thomsonii* (C.B.Clarke) Babu or *A. nasirii* D.F.Austin, *A. setosa* (Roxb.) Choisy or *A. strigosa* (Roth) Roberty, *A. hirsutissima* (C.B.Clarke) Raizada, *A. peguensis* Ridl., *A. capitata* (Vahl) Choisy, and probably others, as well as numerous infraspecific taxa. In the *Flora of China* (Fang & Staples 1995) I (GS) speculated that *Ipomoea hirtifolia* R.C.Fang & S.H.Huang was actually an *Argyreia* and I now believe this Tibetan plant is part of this same species complex. Whatever name is applied to them, the plants have a distinctive facies: herbaceous climbers with all parts more or less appressed-setose; ovate leaves 2.5–9 cm long with cordate bases; axillary inflorescences on peduncles shorter than the subtending petioles, cymosely 1–3-flowered; bracts 2 or 3, oblong to spatulate, persistent; pedicels 0–3 mm long; corollas tubular to narrowly funnellform, deep purple-red (or white?); corolla setose outside on the midpetaline bands. A full description of the Thai plants will be provided in the flora account; the foregoing diagnostic characters will permit recognition of the plants anywhere they occur; in particular the persistent bracts at top the rather short peduncle and (sub)sessile flowers/fruits are immediately recognizable. One member of this complex reaches the edge of its range in northern Thailand and a few specimens of it have been seen, scattered in various herbaria.

Several botanists who published on Indian Convolvulaceae (Roxburgh 1824; Wallich 1832; Choisy 1834; Clarke 1883) tried to rationalize and stabilize the use of names in this complex, without much success. Mostly they seem to have misunderstood the species delimitation and further confused the situation by frequent misapplication of names. Prain (1894: 92–96) attempted to rationalise this muddle of misapplications and superfluous names, while providing names for three species of this complex that range into Burma. However, his explanation of the taxonomic ideas of his predecessors, and their nomenclatural consequences, makes little sense without access to type material for all the names involved. Unfortunately these types are widely scattered, where they are known to exist at all, and several are conserved in herbaria that do not loan historic specimens, making a full resolution of this situation impractical at this time. For purely utilitarian reasons—the need for a name that can be used for the Thai plants—we have followed Kerr (1954) in the choice of epithet for plants found in northern Thailand, Myanmar, and also southwestern China. Only a careful revision that takes into account all the type material will be able to sort out how many species there are and what is the correct name for each. To our eyes there may be only a single variable species that has been named many times based on slight morphological variants (primarily indumentum density, color, and type, which have proven to be unreliable characters) and geopolitical considerations. When such a study is completed the name *A. confusa* (Prain) Raizada will surely be displaced by one of the older epithets; for now we are taking it up for the Thai flora.

Argyrea confusa (Prain) Raizada, Ind. Forester 93: 754. 1967.— *Lettsomia confusa* Prain, J. Asiatic Soc. Bengal 63(2): 96. 1894; Kerr, Fl. Siam. 3: 32. 1954. Type. Myanmar. Shan Hills, King's Collector s.n. (syntype, **CAL**, n.v.), Makhoye Hill, King's Collector s.n. (syntype, **CAL**, n.v.).

Thailand.— NORTHERN: Chiang Mai [Mae Rim distr., Mae Rim to Samueng road, secondary dry dipterocarp forest, 400 m, 7 Sept. 1989, *Pooma* 329 (**BKF**), Bo Luang, in disturbed dry dipterocarp forest, 1000 m, 7 June 1973, *Geesink et al.* 5829 (**BKF**, **L**), Doi Suthep, deciduous jungle, 350 m [1100 ft], 20 Nov. 1910, *Kerr* 1564 (**BM**), same locality, 26 Aug. 1911, *Kerr* 1976 (**BM**), same locality, 5 Oct. 1912, *Kerr* 1976A (**BM**)]; Phrae [Me Ban, 29 Sept. 1929, *Franck* 384 (**C**, **P**)]; Phitsanulok [Pong Pa Forest, 300 m, 28 Dec. 1965, *S.P.* s.n. (**BKF** 47989); Nakhon Sawan. Wang-chao, 14 Oct. 1904, *Hosseus* 116 (**BM**, **E**, **L**, **P**)]; NORTHEASTERN: Phetchabun [Nam Nao National Park, Pha Daeng cliff, open grassy slope, 900–960 m, 26 Dec. 1982, *H. Koyama et al.* T-31725 (**BKF**)].

Distribution.— Myanmar, China (Yunnan), Thailand.

D. The continental Asian moonflowers (*Ipomoea*)

The Asian night-flowering species of *Ipomoea* (moonflowers) have not been taxonomically studied in the same degree of thoroughness as their tropical American counterparts (e.g. Gunn 1972). With less than 10 taxa, this distinctive night-flowering group of Asian *Ipomoea* would make a suitable project for a master's thesis student to undertake. Moonflowers are night-flowering species with a distinctive suite of floral characters: salverform corolla, white in color, sweet fragrance, often exserted stamens and stigma. These conform to a nocturnal moth pollination syndrome that appears multiple times in the genus *Ipomoea*; thus, it is quite possible that moonflower species are not closely related *inter se*. The following discussion resolves the name to be used for one of the indigenous Thai moonflowers, until such time as a revision clarifies the relationships among the Asian-Malesian species.

Since 1985, attempts to identify Thai specimens in the moonflower group led to some anomalous results. Specimens are easily dealt with for *Ipomoea aculeata* Blume, *I. alba* L., *I. muricata* (L.) Jacq., and *I. violacea* L.—the keys in *Flora Malesiana* (Van Ooststroom & Hoogland 1953) working very well to identify them. Yet a few Thai specimens keyed out intermediate between *I. aculeata* and *I. trichosperma* Blume, fitting neither species in respect to critical details of floral morphology. Aside from the morphological ill-fit, there is the astonishing biogeographic disjunction to consider: *I. trichosperma* is known from several Indonesian islands—Java, Celebes, and the Lesser Sunda Islands and previous reports of it from the Asian continent have been dismissed as incorrect. Van Ooststroom (1940: 580) ruled out the presence of genuine *I. trichosperma* on the Asian mainland, stating the Clarke (1883: 198) had misapplied the name to specimens of *I. aculeata* and that Gagnepain & Courchet (1915) had also misapplied the name to some other species, which Van Ooststroom did not identify.

Having no other names available, I nonetheless called these anomalous Thai plants *I. trichosperma*, and that name was used for them in the recent checklist of Thai Convolvulaceae (Staples et al. 2005). Further research has now brought to light more information and it is possible to provide an unambiguous name for them.

In 2005 I had the opportunity to study the original material belonging to J.D. Choisy that he used to prepare the *Convolvulaceae Orientale* (Choisy 1834, 1837); the specimens bearing Choisy's autograph names are mostly now conserved in the De Candolle Herbarium at Geneva (G-DC), Choisy having donated his personal herbarium to Augustin Pyramus de Candolle when the latter was amassing what became the *Prodromus Herbarium*. Choisy had acquired a very complete set of the *Convolvulaceae* specimens from the East India Company's herbarium after a visit to London ca 1830, at which time Nathaniel Wallich was working on the Numerical List (Wallich 1828–1849) that is usually referred to simply as the "Wallich Catalogue" and preparing to distribute sets of duplicates. Choisy may well have studied all the specimens in the East India Company herbarium during his visit and a comprehensive set of the *Convolvulaceae* was either given to him then, or sent to Geneva soon thereafter. These East India Company (or "Wallich") specimens formed the foundation for the *Convolvulaceae Orientale*, and many of the specimens became the types for Choisy's new species.

Of particular relevance in this case is the type material for Choisy's *Calonyction asperum*, based on a De Silva specimen made in Sillet (now Sylhet, in Bangladesh). The specimens in G-DC occupy three sheets and the material is an excellent match with the Thai specimens I previously called *I. trichosperma*. The following nomenclatural summary sets out the relevant synonymy, and detailed discussion follows.

Ipomoea aspera (Choisy) Vatke, *Linnaea* 43: 508. 1880–82, as to type but not as to specimens cited.—*Calonyction asperum* Choisy, *Mém. Soc. Phys. Genève* 6: 442. [Conv. Or. 60] 1834. Type: [Bangladesh] Sillet, *F. de Silva* sub *Wallich Cat.* 1388 (3 sheets, **G-DC!**).—Misapplied: *I. trichosperma sensu* authors: Staples *et al.* 179. 2005; Gagnep. & Courchet in H.Lecomte, *Fl. Indo-Chine* 4: 287. 1915; non Blume, *Bijdr.* 13: 710. 1824.

Choisy (1834) based *C. asperum* solely on the de Silva collection from Bangladesh but later (Choisy 1845) cited an additional specimen collected by Bojer from the Comoros that he thought was conspecific; the latter is not type material for the name and coincidentally is a specimen of *I. violacea* L., the beach moonflower. Clarke (1883) reduced *C. asperum* to synonymy with *I. grandiflora* (= *I. violacea*) without comment; the name has not been used in Asia since. Vatke (1882) in combining the epithet *asperum* in *Ipomoea*, did so without having seen the type, but instead compared a Madagascan specimen with a duplicate of Bojer's Comoros material. In this way, the name *I. aspera* came to be associated with a plant from the African region rather than an Asian one; as an aside, *I. aspera* is not dealt with in the recent Madagascan flora account (Derooin 2001) nor is it mentioned in twentieth century floras for the Indian subcontinent: Bangladesh (Khan 1985); Assam (Clarke 1939); Bhutan (Mill 1999); nor for Indochina (Gagnepain & Courchet 1915).

Further research, including study of all relevant type material, may prove that *I. aspera* is conspecific with the Malesian *I. trichosperma*, but the type specimen for that name has been missing for a long time (Van Ooststroom 1940: 579, in footnote) and remains so today (G. Thijssen, pers. comm. 2007). Resolution of this matter must await revisionary study of the Asian moonflower complex. For the time being, the pragmatic course is to take up the name *I. aspera* for the continental Asian moonflower species with markedly unequal sepals, giving the Thai plants an unambiguous name.

Thailand.— NORTHEASTERN: Loei [Phu Kradung National Park, 11 Sept. 1990, *Chantharanonthai et al.* 90/58 (**K, TCD**)]; SOUTHWESTERN: Kanchanaburi [Thong Pha Phum distr., Pilok, 10 Jan. 1985, *H. Koyama et al.* T-48995 (**BKF**), same locality, 17 Nov. 1985, *Staples & Wanthaniyakun* 292 (**A, AAU, BKF, K**)]; CENTRAL: Saraburi [Sam Lan, 13 Oct. 1973, *Maxwell* 73–482 (**AAU**)]. Myanmar.— Yangon Division [Yangon (Rangoon), Nov. 1937, *Dickason* 6691 (**L, SING**)]; Thaninthanyi Division [Mergui Distr., Sindin, 8 m [25 ft], 21 Nov. 1929, *Sukoe* 10144 (**RAF**, 3 shts)].

II. NEW COMBINATIONS & REDUCTIONS TO SYNONYMY

A. *Argyreia breviscapa* (Kerr) Ooststr., *Blumea* 7: 178. 1952.— *Lettsomia breviscapa* Kerr, Bull. Misc. Inform. Kew 1941: 13. 1941; Fl. Siam. 3: 29. 1954. Type. Thailand. Nakhon Sawan, Hua Wai, 27 Aug. 1931, *Put* 4045 (isotypes **BM!**, **E!**, **K!**, **P!**, **TCD!**).— *Argyreia calcicola* (Kerr) Ooststr., *Blumea* 7: 178. 1952, **synon. nov.**— *Lettsomia calcicola* Kerr, Bull. Misc. Inform. Kew 1941: 14. 1941; Fl. Siam. 3: 29. 1954. Type. Thailand. Kanchanaburi, Khao Tong, 31 Aug. 1930, *Kerr* 19658 (isotypes **BK!**, **BM!** [2 sheets], **P!**, **TCD!**).— *Ipomoea bracteosa* Gagnep., Notul. Syst. (Paris) 3: 143. 1915, **synon. nov.**; Gagnep. & Courchet in H.Lecomte, Fl. Indo-Chine 4: 264. 1915; Nguyen Thi Nhan in Averyanov, Vasc. Pl. Synop. Vietn. Fl. 178. 1990. Type. Vietnam. Phan-rang à Daban, 25 Nov. 1911, *Lecomte & Finet* 1476 (holotype, **P!**).

Kerr compared each of his two new species to others in *Lettsomia*, but did not compare them to one another. Though Kerr had a good eye for recognizing novelties and had the benefit of field knowledge of the plants, in this case he seems to have over-split the taxa. His detailed pencil drawings on the BM isotypes disclose that these two “species” are extremely similar, even when first described. The only points of difference between the two protologues are summarized in the following table:

Table 2. Purported differences between protologues for *A. breviscapa* and *A. calcicola*.

Character	<i>A. breviscapa</i>	<i>A. calcicola</i>
Bract shape	Ovate	Ovate
Bracts size	Up to 3.8 by 3.5 cm	Up to 2.5 by 2.0 cm
Bract indumentum	Strigose with bulbous bases + softer whitish crinkled hairs (on both sides?)	Densely appressed pubescent outside
Corolla size	ca 5 cm long	ca 3.5 cm long
Corolla color	White	White
Corolla indumentum	Glabrous outside	Sparsely hairy on backs of corolla lobes

Now that more specimens are available, the degree of intergradation between these slight differences is complete and we find it impossible to maintain both species. It should be noted that the oldest name for this species is *I. bracteosa* Gagnep., but this epithet is preoccupied in *Argyreia* by *A. bracteosa* (C.B. Clarke) Raizada. We then have to choose between Kerr's two epithets, which were published simultaneously. In Thai herbaria, the name *A. breviscapa* has been more widely used than *A. calcicola*, so we are choosing to maintain the former. Evidently the corolla color varies, because a number of specimen labels report corollas that are purplish or pinkish as well as white.

B. *Argyreia hylophila* (Kerr) Staples & Traiperm, *comb. nov.*—*Ipomoea hylophila* Kerr, Bull. Misc. Inform. Kew 1941: 17. 1941. Type. Thailand. Nakhon Sawan: Raheng, Ban Pa Yang, 16 Nov. 1920, *Kerr* 4579 (isotypes **A!**, **BK!**, **E!**, **K!**, **TCD!**).

When Kerr named this species he wrote “When mature fruit is known, it is possible that this species, probably also *I. nana*, may have to be transferred to *Lettsomia*. Both species have rather the facies of that genus.” Finally a specimen with mature fruits has been matched with the type and proven Kerr's surmise correct. There is a considerable distance between the two localities where *A. hylophila* has been collected and it is to be hoped that some populations of this endemic species may yet survive in this now heavily developed area.

Thailand.—EASTERN: Ubon Ratchathani [Khong Chiam district, ca km 51.5 along Rte. 2134 in mixed dipterocarp scrub forest on sandy soil, 29 Nov. 1985, *Staples & Wongprasert* 364 (**A**)].

C. *Argyreia melvillei* (S. Moore) Staples, *comb. nov.*—*Lettsomia melvillei* S. Moore, J. Bot. 43: 144. 1905. Type. Myanmar. Shan State: Pyinsamben, *Melville* 36 (holotype **BM!**).—*Argyreia maymyo* (W.W.Sm.) Raizada, Indian Forester 93: 754. 1967.—*Lettsomia maymyo* W.W.Sm., Rec. Bot. Surv. India 6: 38. 1914, *synon. nov.* Type. Myanmar. Maymyo plateau, *Lace* 4275 (holotype **CAL**, n.v., isotype **K!**).—*Argyreia* sp. 3 of Traiperm, Tax. Study *Argyreia* Thailand p. 90, fig. 29, pl. 10 h, i. 2002.

The oldest name for this widespread species had yet to be taken up in *Argyreia* and that combination is made here. The change of epithet is regrettable.

D. *Argyreia popahensis* (Collett & Hemsl.) Staples, *comb. nov.*—*Ipomoea popahensis* Collett & Hemsl., J. Linn. Soc., Bot. 28: 95. 1890. Type. Myanmar: “upper Burma” sine loco, Oct. 1888, *Collett* 905 (holotype, **K!**, isotype **BM!**).—*Argyreia stenophylla* (Kerr) Staples & Traiperm, Thai For. Bull. (Botany) 33: 42. 2005.—*Lettsomia stenophylla* Kerr, Bull. Misc. Inform. Kew 1941: 16. 1941, *synon. nov.* Type. Thailand. Chiang Mai: Mae Taeng, 30 Oct. 1922, *Kerr* 6490 (isotypes **BK!**, **BM!**, **K!**).—*Argyreia lineariloba* C.Y.Wu, Yunnan Trop. Subtrop. Flor. Res. Rep. 1: 134. pl. 38, fig. 1. 1965, *synon. nov.* Type. China. Yunnan: Cho Mo Hsian, Chu Hsiung, 16 Sept. 1938, *M.K. Li* 0007 (holotype **KUN!**).

The Thai specimens have slightly broader sepals in flower and in fruit but are otherwise identical with the Burmese plants that formed the basis of *I. popahensis*. I can

find no characters worthy to recognize two species here. Based on the description and type specimen photo, I likewise reduce the Chinese species, which falls within the range of variation for this species.

E. *Merremia thorelii* (Gagnep.) Staples, **comb. nov.**—*Ipomoea thorelii* Gagnep., Notul. Syst. (Paris) 3: 1915. Types: Vietnam. Ti-Tinh, *Thorel* s.n. (syntype, **P!**, 2 sheets). Laos. Khong, *Thorel* s.n. (syntype, **P!**).—*Merremia collina* S.Y.Liu, Guihaia 4: 199. 1984, **synon. nov.** Type: China, Guangxi, Yongning Xian, 5 Oct. 1983, *S.Y. Liu* 002112 (holotype, **GXCM** n.v.; isotypes **IBK** n.v., **KUN** n.v.).

The protologue and original illustration leave no doubt that the Chinese plant is conspecific with the Indochinese species first named as *I. thorelii*.

III. NEW SPECIES

Two species identified by Traiperm in her unpublished M.Sc. thesis (Traiperm 2002) have been rigorously checked by Staples and proven to be undescribed. They are described and given scientific names here.

A. *Argyreia variabilis* Traiperm & Staples, **sp. nov.**, simillima *A. kerrii* sed lamina angustior, basin non cordatis, duplo facies confertim brunneopilosis institiae, et sepalis latior obovatis orbicularis, totius glabris differt. Type: Thailand. Phetchaburi: Kaeng Krachan National Park, 1 Sept. 2001, *Traiperm* 31 (holotype **BKF**; isotypes—to be distributed—**A, BCU, K, KKU**). Fig. 4 & Fig. 6.

Woody climber, stems to 30 m tall, terete, densely brown pubescent to hirsute, internodes 1–11 cm long. Leaves ovate or ovate-lanceolate, 10–24 by 4–10 cm, base obtuse or rounded, rarely truncate, margins entire, apex acute to acuminate, chartaceous; upper surface densely brown hirsute; lower surface densely brown pilose; lateral nerves 14–16 pairs, prominent beneath; petiole 1.5–5.0 cm long, grooved, densely brown-pubescent. Inflorescences axillary, lax, several-flowered cymes; peduncles 2–3.5 cm long, terete, densely brown-strigose; pedicels 5–10 mm long, densely brown-strigose; bracts lanceolate to elliptic-lanceolate, 15–25 by 5–8 mm, apex acute to acuminate, densely brown pubescent outside, glabrous inside, persistent. Flower sepals subequal, entire, broadly obovate to orbicular, 15–17 by 11–13 mm, glabrous on both sides; corolla fleshy, campanulate, 6–7 cm long and 3.2–3.5 cm diameter, pink to dark purple, tube paler inside, limb entire to shallowly 10-lobed, reddish pink, completely glabrous outside; stamens included, equal, 32–35 mm long, filament bases dilated and hairy, anthers 6–7 mm long; pistil included, disk cupular, 5-lobed, almost enclosing ovary, ovary glabrous, 2-celled, style 33–40 mm long. Fruits not seen.

Thailand.— SOUTHWESTERN: Phetchaburi [Kaeng Krachan National Park, 1 Sept. 2002, *Traiperm* 31 (**A, BCU, BKF, K, KKU**), Kaeng Krachan National Park, along road from Ban Krang camp to Khao Phanoen Thung ranger substation, 12 Aug. 2002, *Middleton et al.* 998 (**A, BISH, BKF**)].

Distribution.— Known only from the south-western region of Thailand in Phetchaburi province, collected twice in Kaeng Krachan National Park.

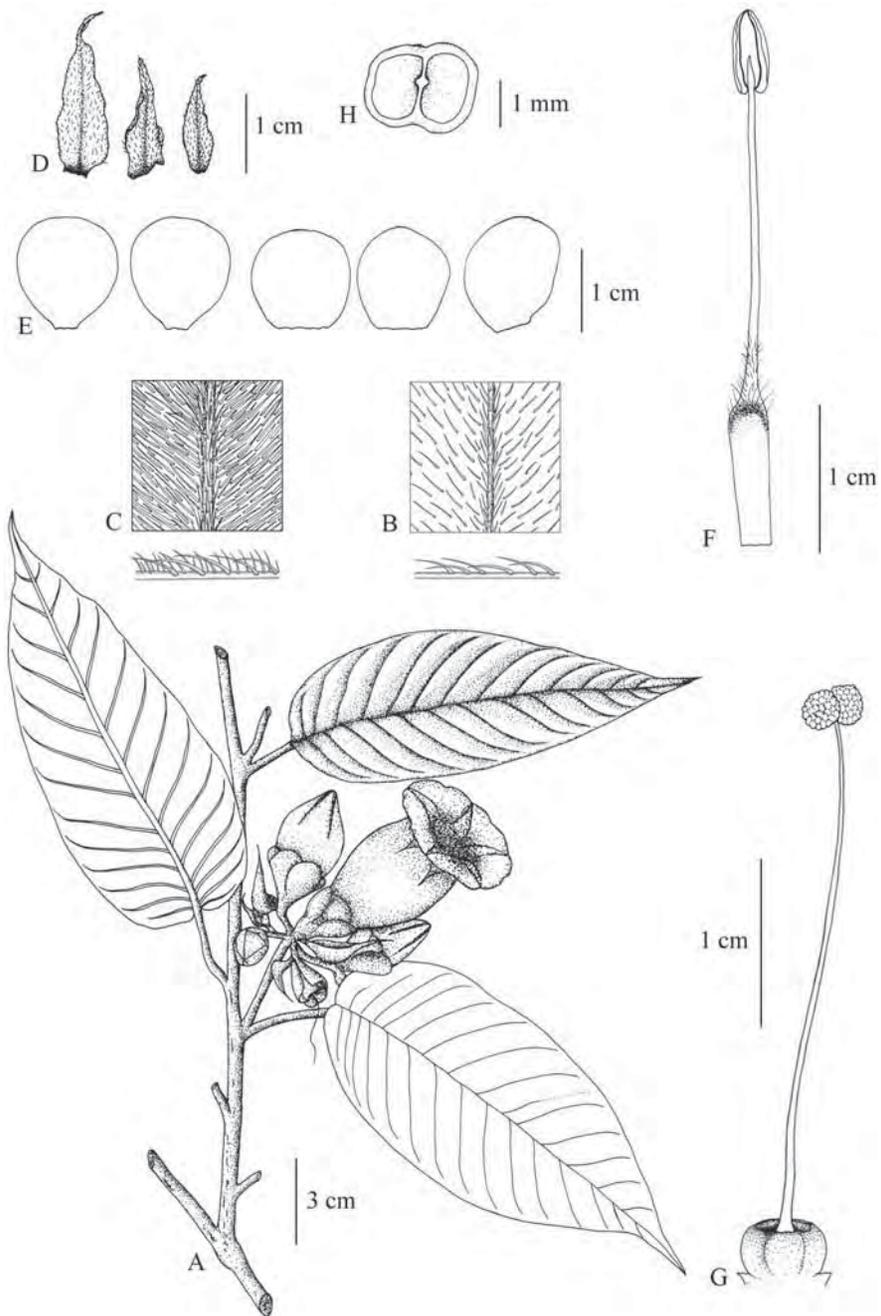


Figure 4. *Argyreia variabilis* Traiperm & Staples: A. habit; B. upper leaf surface; C. lower leaf surface; D. bracts; E. sepals; F. stamen; G. pistil; H. ovary (x-section). All from *P. Traiperm* 31 (BKF). Drawn by P. Traiperm (A, D–H) and Pajaree Inthachub (B, C).

Ecology.— In dry evergreen forest. Altitude ca 650 m. Flowering August, September.

Conservation Status.— Possible Near Threatened (NT) (IUCN 2001). *Argyreia variabilis* is known from only two collections from Phetchaburi province and seems to be represented by just a few populations in Kaeng Krachan National Park. Based on the limited evidence available at this time, NT seems the most appropriate conservation status for it.

Etymology.— The epithet, *variabilis*, refers to the corolla color, which varies from pinkish to dark purple with a paler limb.

B. *Argyreia leucantha* Traiperm & Staples, **sp. nov.** similis *A. thorelii*, sed corolla campanulata, alba, ceracea differt. Type: Thailand. EASTERN: Ubon Ratchathani, Pha Taem National Park, 20 July 2002, *Traiperm* 17 (holotype **BKF**; isotypes—to be distributed—**A**, **BCU** (×2), **K**, **KKU**, **L**). Fig. 5.— *A. cf. laotica sensu* Traiperm, Tax. Study *Argyreia* Thailand. 51. Fig. 13, Plate 5 e-f, 2002, non Gagnep. in H. Lecomte, *Notul. Syst.* (Paris) 3: 134. 1915; Gagnep. & Courchet in H. Lecomte, *Fl. Indo-Chine* 4: 276. 1915. Fig. 5 & Fig. 6.

Twining plant, stems terete, sparsely brown-pilose, arising from enlarged, swollen roots; internodes ca 2–8 cm; sap milky. Leaves elliptic, oblong-lanceolate or oblong-elliptic, 6–12 by 1–5 cm, base obtuse, attenuate or rounded, margins entire, apex acute, obtuse, acuminate, or rounded, mucronulate, chartaceous, both sides appressed-pilose; lateral nerves 7–10 pairs on each side of midrib, indistinct but midrib prominent beneath; petiole 5–8 mm long, terete, slightly appressed hirsute. Inflorescences axillary, subcapitate cymes, 2–9-flowered; peduncles 4–9 mm long, brown hirsute; pedicels 3–9 mm long, slightly pilose; bracts elliptic-oblong, 1.5–2 cm long, apex acute, base rounded, yellowish brown-pilose, persistent. Flowers showy; sepals unequal, lanceolate, ovate, or oblong, 2 outer sepals 25–28 by 5–6 mm, base rounded, apex acute, outside densely patent brownish hirsute, inside glabrous, 3 inner sepals smaller, middle densely brown-hirsute, margins glabrous; corolla waxy, campanulate, 5–6 cm long, limb shallowly lobed, white tinged greenish, outside glabrous or glabrescent, inside tube base white or dark purple, glabrous; stamens included, equal, 28–29 mm long, white, filament bases dilated and hairy, anthers 5–6 mm; disk annular, entire, ovary glabrous, 2-celled; style included, 30–33 mm long, jointed above base (or not), white; stigma biglobose. Fruit pendulous, clasped by accrescent calyx until ripe, sepals then wide-spreading, densely golden-hispid outside, glossy tan and glabrous inside, the tips recurved; berry subglobose, 7–8 mm diameter, dark brown when ripe, glabrous, capped by persistent style. Seeds 4 (or less), 5–6 mm long, brownish yellow, glabrous.

Thailand.— NORTHEASTERN: Mukdahan [Mukdahan National Park, on bare sandstone outcrop ca 800 m S of headquarters, 17 Oct. 1998, *Wilkin et al.* 991 (**BKF**, **K**, photo)]; EASTERN: Ubon Ratchathani [Phibun Mangsahan Distr., Phibun Mangsahan, 21 Aug. 2001, *Pooma et al.* 2245 (**L**); Khong Chiam Distr., Pha Taem National Park, 25 July 2001, *Traiperm* 17 (**A**, **BCU**, **BKF**, **K**, **KKU**, **L**); *ibid.*, 20 July 2002, *Traiperm* 29 (**BCU**), same locality, *Boonjaras* 74 (**BCU**); Khong Chiam Distr., about 51.5 km along Hwy. 2134, 29 Nov. 1985, *Staples & Wongprasert* 363 (**A**, **AAU**, **BKF**, **K**, **L**, **P**), Khua Nangnee Falls, 22 Aug. 2001, *Pooma et al.* 2260 (**L**), Phranin Waterfall, 25 Oct. 1998, *Wongprasert et al.* s.n. (**BKF**), Ubon Ratchathani Gene Conservation Station, near Bahai village, 14 Sept. 2001, *Maxwell* 01–403 (**BKF**); Chong Mek distr., Wat Sirindhornwararam, 27 Sep. 2003, *Wongprasert* 039–24 (**BKF**)].

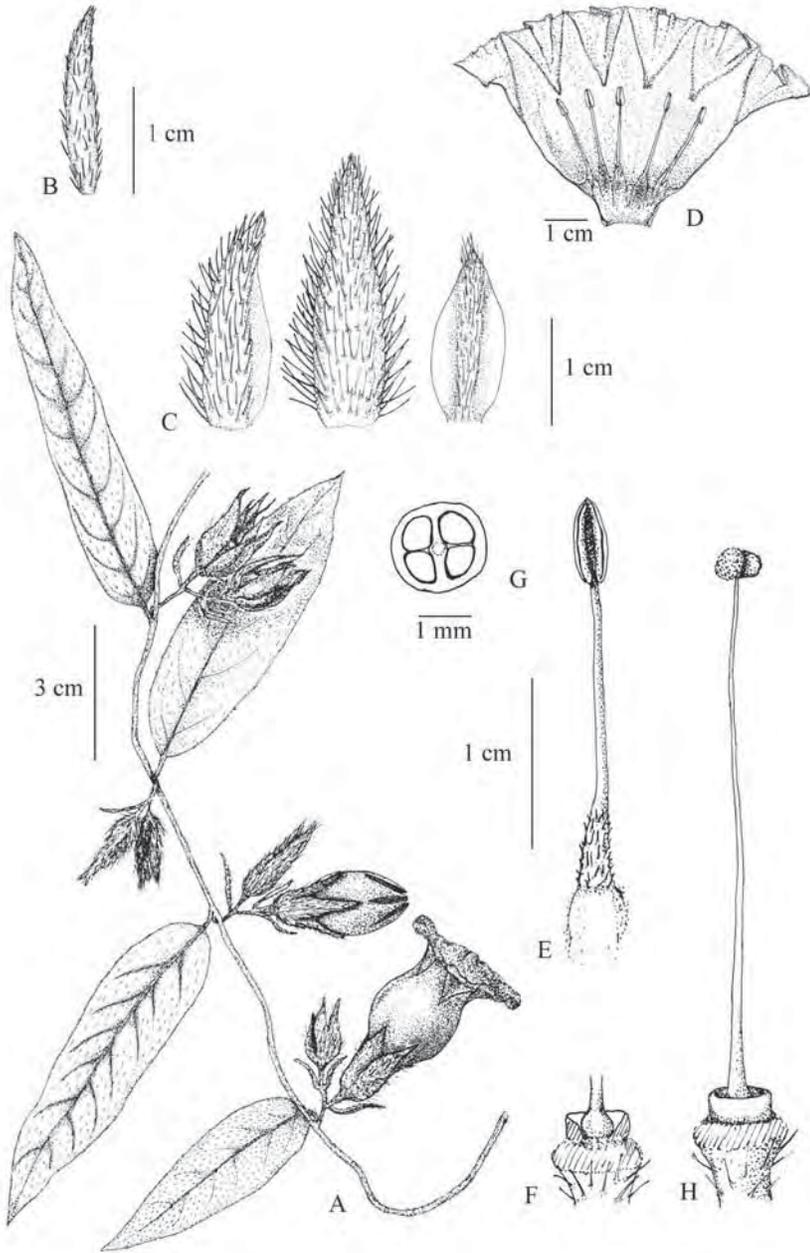


Figure 5. *Argyreia leucantha* Traiperm & Staples: A. habit; B. bracts; C. sepals; D. opened corolla with stamens; E. stamen; F. ovary; H. pistil; G. ovary (x-section). All from *P. Traiperm* 17 (BKF). Drawn by T. Boonjaras.

Distribution.— So far known only from eastern and northeastern Thailand but very likely to occur across the Mekong in adjacent Laos as well.

Ecology.— In dry mixed deciduous/dipterocarp forest, in open areas or under low, broken canopy; always reported on sandstone. Altitude from 150–300 m. Flowering: July–October. Fruiting: September–November.

Conservation Status. — Least Concern (LC) (IUCN 2001). *Argyreia leucantha* is locally common at several sites in Mukdahan and Ubon Ratchathani and may occur elsewhere on suitable sandstone substrates. Based on our current level of field knowledge this seems to be a species of Least Concern.

Etymology.— The epithet, *leucantha*, refers to the shining white corollas.

Notes.— The oblong-lanceolate leaves of *A. leucantha* could be confused with *A. popahensis* or *A. lanceolata*. The habit, foliage and flowering parts are similar to *A. thorelii*, but the corolla shape immediately separates the two: salverform and deeply 5-parted in *A. thorelii*, campanulate and entire to shallowly 10-lobed in *A. leucantha*. The large, waxy white flowers borne in clusters are very beautiful and this species would make an attractive ornamental climber.

IV. NEW DISTRIBUTION RECORDS

Identification of material in herbaria resulted in the discovery of 13 new distribution records for Convolvulaceae in Thailand, eight in *Argyreia*, two in *Merremia*, and one each in *Cuscuta*, *Dichondra*, and *Ipomoea*. These are presented in alphabetical order.

A. *Argyreia fulvocymosa* C.Y.Wu, Yunnan Trop. Subtrop. Fl. Res. Rep. 1: 135. 1965; R.C. Fang & Staples in C.Y.Wu & Raven, Fl. China 16: 320. 1995; Traiperm, Tax. Study *Argyreia* Thailand p. 37. 2002.

First record in Thailand. Although mentioned in the recent checklist of Thai Convolvulaceae (Staples et al., 2005) no supporting specimens were cited to document the occurrence or distribution of *A. fulvocymosa* in Thailand; they are now cited below.

Thailand.— NORTHERN: Phitsanulok [Phu Miang, in light forest, 1200–1650 m, 4 Oct. 1967, *Shimizu et al.* T-11676 (**BKF, L**)]; NORTHEASTERN: Phetchabun [Phu Miang, edge of thicket, 1200–1300 m, 2 Oct. 1967, *Shimizu et al.* T-11320 (**BKF, L**), same locality, along stream in sunny place, *Shimizu et al.* T-11321 (**BKF, L**)]; Loei [vic. Phu Kradueng, edge of evergreen forest, 9 Sept. 1988, *Takahashi & Tamura* T-63458 (**BKF**)]; CENTRAL: Nakhon Nayok [Khao Yai National Park, margins of primary evergreen hardwood forest, 725 m, 6 Sept. 2001, *Maxwell* 01–390 (**A, BKF**), Wang Chumpi area, roadside in seasonal evergreen forest, 740 m, 20 Feb. 1999, *Charoenchai* 751 (**BKF**)].

A sterile collection probably belongs here, based on the leaf and indumentum characters: NORTHEASTERN: Loei [Phu Kradueng National Park, summit of mountain in regrowth of a burned hardwood forest, 2 Dec. 1985, *Staples & Wongprasert* 382 (**A, BKF**)].

B. *Argyreia hookeri* C.B. Clarke in Hook.f., Fl. Brit. India 4: 185. 1883; Ooststr. & Hoogland, Fl. Males. 1(4): 502. 1953; Mill, Fl. Bhutan 7(2): 842. 1999.

First record in Thailand. The two collections seen are both in poor condition but the silky whitish hairs on the inflorescence bracts and sepals are distinctive.

Thailand.—NORTHERN: Tak [between Tak and Ban Dan Lan Hoi, ca 30 km E of Tak, dry deciduous forest, ca 200 m, 24 July 1973, *G. Murata et al.* T-16994 (AAU, L)]; SOUTHWESTERN: Kanchanaburi [Huai Bankan, in mixed deciduous forest, 750 m, 11 Nov. 1971, *van Beusekom et al.* 3673 (BISH, BKF, L)].

C. *Argyreia kunstleri* (Prain) Prain ex Ooststr., *Blumea* 5: 382. 1943; Hoogland, *Blumea* 7: 187. 1952; Ooststr. & Hoogland, *Fl. Males.* 1(4): 505. 1953.—*Lettsomia kunstleri* Prain, *J. Asiat. Soc. Bengal* 63(2,2): 100. 1894; *J. As. Soc. Bengal* 74 (2,2): 327. 1906.—*Lettsomia curtisii* Prain, *J. Asiat. Soc. Bengal* 63(2,2): 100. 1894; *J. Asiat. Soc. Bengal* 74 (2,2): 325. 1906.—*Argyreia curtisii* (Prain) Prain ex Ooststr., *Blumea* 5: 367. 1943.

First record in Thailand. The BKF specimen is in fruit and rather depauperate; it has been compared with authentic material at SING for a number of peninsular Malaysian species. It fits *A. kunstleri* best, given the scrappy material at hand.

Thailand.—PENINSULAR: Nakhon Si Thammarat [Khao Luang, in thicket on mountain slopes, 680–950 m, 19 Jan. 1966, *Tagawa et al.* T-4662 (BKF)].

D. *Argyreia maingayi* (C.B. Clarke) Hoogland, *Blumea* 7: 185. 1952; Ooststr. & Hoogland, *Fl. Males.* 1(4): 502. 1953.—*Lettsomia maingayi* C.B. Clarke in Hook.f., *Fl. Brit. India* 4: 195. 1883.

This is the first report of *A. maingayi* from Thailand. The inflorescence of the specimen has disarticulated but the shape of the sepals and the completely different indumentum on the stems, petioles, leaves, and bracts rule out *A. capitiformis* (Poir.) Ooststr. *Argyreia maingayi* is widespread and common throughout the Malay Peninsula and it is no surprise that it occurs on the Thai side of the border as well.

Thailand.—PENINSULAR: Yala [Bunnang Sata, on slope of hill in deciduous forest, 8 Dec. 1961, *Suvarnakoses* 1776 (BKF)].

E. *Argyreia ooststroomii* Hoogland, *Blumea* 7: 189. fig. 1, a–g. 1952; Ooststr. & Hoogland, *Fl. Males.* 1(4): 504. 1953.

Several collections of an *Argyreia* from peninsular Thailand could not be identified for some years, but eventually were compared with material in SING for peninsular Malaysian species. The Thai collections matched closely with the type specimen of *A. ooststroomii*, but were altogether more robust and larger in floral and fruiting parts than the type specimen. There being no other specimens of *A. ooststroomii* in SING (or anywhere else) for comparison, it proved impossible to assess the variability in size for this species. I could find no characters that warrant naming a distinct taxon and I here include these Thai specimens in *A. ooststroomii*.

Thailand.—PENINSULAR: Narathiwat [Khao Ai Ka Pok, Sukhirin, 150 m, 17 April 1996, *Niyomdham & Puudjaa* 4706 (BKF), Klong I-ga-daeng, Waeng, by stream in tropical

rain forest, 12 Feb. 1997, *Puudjaa* 366 (BKF), Waeng, in evergreen forest, 3 July 1972, *Nitrasirirak* 230 (BKF), same locality, 5 July 1972, *Nitrasirirak* 236 (BKF), same locality, April 1972, *Sangkachand et al.* 1059 (BKF, L), same locality, 1 April 1968, *Phusomsang* 416 (BKF, K, L), Sungei Kolok, evergreen forest, 200 m, 28 Feb. 1974, *Larsen & Larsen* 32729 (AAU, K, S, UPS)].

F. *Argyreia penangiana* (Choisy) Boerl., *Handl. Fl. Ned. Ind.* 2: 513. 1899; Hoogland, *Blumea* 7: 181. 1952; Ooststr. & Hoogland, *Fl. Males.* 1(4): 500. 1953.— *Moorcroftia penangiana* Choisy, *Mém. Soc. Phys. Genève* 6: 406. 1834.— *Lettsomia penangiana* (Choisy) Miq., *Fl. Ned. Ind.* 2: 592. 1857.

The first report of this peninsular Malaysian species in southern Thailand.

Thailand.— PENINSULAR: Nakhon Si Thammarat [Khao Luang National Park, Nop Phitum, along trail to Krung Ching waterfall, in evergreen forest, 200 m, 12 Feb. 2005, *Williams et al.* 1398 (A, BISH)].

G. *Argyreia sikkimensis* (C.B. Clarke) Ooststr., *Blumea* 7: 178. 1952; Mill, *Fl. Bhutan* 7(2): 840. 1999.— *Lettsomia sikkimensis* C.B. Clarke in *Hook.f., Fl. Brit. India* 4: 194. 1883.

First record in Thailand. The three Thai collections seen are all in fruit while the type material seen (images of syntypes from Khasia, India) has young flower buds or open corollas, nevertheless the leaf blade shape and indumentum, long peduncles, and sepal shape and indumentum are a very close match with the Thai specimens.

Thailand.— NORTHERN: Chiang Mai [Pong Pho, 12 km N of Doi Chiang Dao, 1200 m, 30 July 1968, *Larsen et al.* 2835 (AAU)]; Nan [Amphoe Pua, Phu Kha National Park, near summit in hill evergreen forest, 1500–1700 m, 21 Nov. 1993, *Larsen et al.* 44681 (AAU, 2 sheets), Doi Phu Kha, ca 70 km NE of Nan, 1500–1600 m, 13 Dec. 1990, *Larsen et al.* 41956 (AAU, BKF)].

H. *Argyreia sphaerocephala* (Prain) Hoogland, *Blumea* 7: 183. 1952; Ooststr. & Hoogland, *Fl. Males.* 1(4): 503. 1953.— *Lettsomia sphaerocephala* Prain, *J. Asiat. Soc. Bengal* 73(2): 19. 1904.

This is the first report of *A. sphaerocephala* in Thailand. It evidently flowers while leafless and the long, whip-like peduncles bearing the capitate inflorescences develop from leaf axils on older woody branches (cauliflorous). The large red-purple bracts initially form a spherical head from which the tubular bright red flowers protrude one by one. These colorful bracts persist in fruit and eventually reflex to expose the ripe lavender berries. This is a very showy species that deserves to be cultivated.

Thailand.— PENINSULAR: Songkhla [Ton Nga Chang Wildlife Sanctuary, dry evergreen forest, 250 m, 17 Aug. 1995, *Larsen et al.* 45739 (AAU)]; Narathiwat [Bala-Hala, Waeng, in tropical rain forest, 24 Jan. 1998, *Puudjaa* 460 (BKF), same locality, 300 m, 29 Nov. 1997, *Niyomdham* 5279 (BKF, K), same locality, on hill slope in evergreen forest, Apr. 1968, *Phusomsang* 428 (L), Bala-Hala, without locality, 4 Oct. 1999, *Niyomdham et al.* 5910 (BKF)].

I. *Cuscuta japonica* Choisy in Zoll., Syst. Verz. Ind. Archip. 130, 184. 1854; Gagnep. & Courchet in H.Lecomte, Fl. Indo-Chine. 4: 312. 1915; R.C.Fang et al. in Wu & Raven, Fl. China 16: 323. 1995.

This is the first record of *C. japonica* in Thailand. One of the specimens had been misidentified as *Cassytha filiformis* L. (Lauraceae).

Thailand.—NORTHERN: Chiang Mai [Maerim Distr., Pongyaeng, open area on fence in village, ca 500 m, 20 Oct. 1995, *Pooma* 1163 (BKF)]; Phitsanulok [Nakhonhai Distr., Ban Yaeng, on shrubs in open area by stream, ca 350 m, 26 Dec. 2000, *Wongprasert et al.* 0012–24 (BKF)].

J. *Dichondra micrantha* Urb., Symb. Ant. 9: 243. 1924; Tharp & M.C.Johnst., Brittonia 13: 350. 1961; D.F.Austin, Econ. Bot. 52: 88–106. 1998.

This is the first report for this pantropical weed in Thailand. It is noteworthy that the specimen was collected some distance away from urban or agricultural areas, in a rather remote hill tribe village. It should be sought elsewhere in the Kingdom, as it is very likely more widespread than the single collection would suggest.

Thailand.—NORTHERN: Chiang Mai [Sameung Distr., Mae Kan (Karen) village, in medicinal plant nursery, located in degraded, fire-damaged, seasonally deciduous hardwood and bamboo forest, 675 m, Oct., *Chiapisit* 53 (CMU)].

K. *Ipomoea wangii* C.Y.Wu, Yunnan Trop. Subtrop. Flor. Res. Rep. 1: 118. pl. 35, fig. 2. 1965; R.C.Fang & Staples in C.Y.Wu & Raven, Fl. China 16: 309. 1995; Staples *et al.*, Thai For. Bull. (Bot.) 33: 179. 2005. Type. China. Yunnan, Jenn-yeh Hsien, Meng-la, Nov. 1936, *C.W. Wang* 80769 (holotype KUN!; iso A!).

This species was listed for Thailand without comment in the checklist of species that brought together relevant literature and distribution reports for the Kingdom (Staples *et al.* 2005). At that time, one of us (GS) had seen only a single specimen that appeared, based on the very large sepals, to be *I. wangii*, a species previously known only from the type locality in Yunnan, China. The identification was considered provisional at best. However in the course of writing this paper the second author (PT) produced a number of collections made during her M.Sc. research and among them was a fine collection, with flowers and fruits, that matches well with the type of *I. wangii*. A few additional specimens have been seen from Myanmar, and those are enumerated here to flesh out the scanty knowledge of this species.

Thailand.—NORTHERN: Phitsanulok [Phu Hin Rong Khla National Park, 1250 m, 14 Sept. 2002, *Traiperm* s.n. (BCU, BKF)]; SOUTHWESTERN: Phetchaburi [Kaeng Krachan National Park, ca Km 36 along road to Thor Thip Waterfall, 650–800 m, 4 Dec. 1993, *Larsen et al.* 45017 (AAU)]. Myanmar.—Tenasserim Division [Tavoy Distr., in hills W of Paungdaw power station by river, 650 m [2100 ft], Sept. 1961, *Keenan et al.* 1514 (A, E, K), same locality, Oct. 1961, *Keenan et al.* 1694 (A, E, K, RAF)]; Kayen [=Karen] State [Myawaddi to Kawkaeik Hills, Dec. 1920, *Rock* 699 (US)].

L. *Merremia cissoides* (Lam.) Hallier f., Bot. Jahrb. Syst. 16: 552. 1893.

This is the first record of this weedy tropical American species in Thailand. It will likely increase its range as it has done elsewhere in the Old World tropics.

Thailand.—SOUTHEASTERN: Sa Kaeo [Muang distr., Pang Sida National Park, beside park headquarters building, 220 m, 11 Jan. 2002, *Jaikrasane* 173 (CMU), Pang Sida National Park, 600 m, 31 Jan. 2003, *Jaikrasane* 252 (BCU)].

M. *Merremia poranoides* (C.B. Clarke) Hallier f., Bull. Herb. Boiss. 5: 375. 1897; Staples, Edinb. J. Bot. 61: 91–92. 2006.

This is the first report of *M. poranoides* in Thailand. Staples (2006) documented the species occurrence in India, China, and Vietnam but no Thai collections had been seen up to that time. A single rather scrappy collection has since come to light. The sessile, foliaceous bract at the peduncle apex is distinctive.

Thailand.—NORTHERN: Chiang Mai [Om Koi distr., on the Bo Luang tableland, Mae Tuen Watershed Improvement Station to Nang Kruan waterfall, 950–1100 m, 18 Oct. 1979, *T. Shimizu et al.* T-19201 (BKF)].

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Figure 6. *Argyreia variabilis* Traiperm & Staples: A. plant with lighter colored corolla; B. plant with darker purple corolla; *A. leucantha* Traiperm & Staples: C.–D. Flowering habit; E. fully mature fruits. (A.–B. & E. Photographed by P. Traiperm; C.–D. by Thamarat Phutthai)