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A revision of *Damrongia* (Gesneriaceae) in Thailand

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ABSTRACT

The genus *Damrongia* Kerr ex Craib is revised. We recognise eight species in Thailand, including one newly described. This account includes an identification key, species descriptions, photographs of several species, and IUCN conservation assessments.

KEYWORDS: New species, taxonomy, revision, limestone, Loxocarpinae.

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INTRODUCTION

The genus *Damrongia* Kerr ex Craib was first proposed by Kerr, to accommodate a plant (*Kerr 2196*) he collected in Thailand and defined as somewhat close to *Didymocarpus*. It was named after H.H. Prince Disakumara Krom Phraya Damrong Rachanuphap (1862–1943) of Thailand (Triboun & Middleton, 2010). It was, however, only formally published by Craib (1918) with the type species *Damrongia purpureolineata* Kerr ex Craib. *Damrongia* was later synonymised into *Chirita* Buch.-Ham. (Wood, 1972, 1974) due to the affinity of *D. purpureolineata* to *Chirita lacunosa* (Hook.f.) B.L.Burtt. At that time *Chirita* was a large genus which included a broad range of morphological variation. Its unifying feature was the "chiritoid" stigma, i.e. a bilabiate stigma with one lip reduced and the other well-developed and usually bilobed. The status of *Chirita* as a natural group was questioned by Burtt (2001) on morphological grounds and subsequently by Möller *et al.* (2009, 2011) and Wang *et al.* (2011) using molecular data. This led to the resurrection of *Damrongia* (Triboun & Middleton, 2010) and the dismemberment of *Chirita* into several other genera, including the synonymisation of the type species of *Chirita*, and hence the genus, into *Henckelia* Spreng. (Weber *et al.*, 2011). The newly defined *Damrongia* included a number of the species formerly placed in *Chirita* sect. *Chirita*.

Further studies on the phylogeny of the group (Puglisi *et al.*, 2016) led to the inclusion in *Damrongia* of the three Asian species of *Streptocarpus* Lindl. and of the Chinese species *Boea clarkeana* Hemsl. This introduced new morphological features into *Damrongia*, such as a caulescent habit and a twisted capsule, making the genus difficult to succinctly distinguish from several other genera of Asian Gesneriaceae. Characters that are common to all species of *Damrongia* are the chiritoid stigma and the tubular to funnel-shaped corolla, which can be white to purple or blue.

The Thai species *Petrocosmea kerrii* Craib also has a combination in *Damrongia* as *D. kerrii* (Craib) Pellegrin (Pellegrin, 1930) but this is a good species of *Petrocosmea* Oliv. (Wang, 1985; Burtt, 2001).

MATERIALS AND METHODS

This revision is based on a study of the specimens from the herbaria A, AAU, ABD, BK, BKF, CMU, CMUB, E, K, L, P, PH, QBG, SING (Thiers *et al.*, continuously updated). All specimens have been seen unless otherwise noted. In addition to the herbarium material, a few species were studied in the wild in Thailand, from the living collection at the Royal Botanic Garden Edinburgh, and from pickled flowers. The vast majority of the floral

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measurements were taken from rehydrated herbarium material. When available, measurements of fresh or pickled flowers were added to the descriptions. Fruits and vegetative parts were only measured from dry specimens. The fine measurements were taken with a microruler and should be considered accurate to 0.05 mm.

TAXONOMIC TREATMENT

Damrongia Kerr ex Craib, Bull. Misc. Inform. Kew 1918: 364. 1918.— Type species: *Damrongia purpureolineata* Kerr ex Craib

Caulescent or acaulescent herbs. *Leaves* petiolate, phyllotaxis opposite in plants with internodes, obscure in acaulescent species. *Inflorescence* cymose, axillary or scapose. *Calyx* 5-partite, lobes highly variable in size and shape, free or partly fused into a tube. *Corolla* white to purple or blue, sometimes with lateral and ventral longitudinal stripes, with an extended tube, campanulate to funnel-shaped; upper lip with two lobes, lower lip with three. *Stamens* 2, ventral, anthers coherent and glabrous; staminodes 3. *Disk* annular and 5-lobed. *Ovary* narrow, ovoid to cylindrical, unilocular with parietal placentation; stigma chiritoid. *Fruit* ortho- or plagiocarpic, bivalved, valves straight or twisted. *Seeds* small, many.

Damrongia includes 11 species distributed from China to Sumatra. Of the eight species recognised in Thailand, seven are endemic.

KEY TO THAI SPECIES OF *DAMRONGIA*

1. Caulescent herb; flowers pendulous; fruit twisted **5. D. orientalis**
1. Acaulescent herb; flowers erect to nodding, never obviously pendulous; fruit not twisted
  2. Corolla 10–15(–22) mm long, predominantly whitish or yellowish, sometimes with purplish patches or with a very pale blue or purplish hue
    3. Calyx bilabiate and fused into a tube for 6–10 mm of length **6. D. purpureolineata**
    3. Calyx divided almost to base **2. D. fulva**
  2. Corolla (20–)25–52 mm long, predominantly deep bluish or purplish
    4. Calyx tube absent or < 4 mm long
      5. Calyx lobes < 3 times as long as wide, apex acute to acuminate
        6. Petioles with villous brown indumentum; leaf blade with short and fine hairs above and long and brown hairs beneath **4. D. lacunosa**
        6. Petioles hairy but not villous; leaf blade with a white indumentum, hispid above **7. D. tribounii**
      5. Calyx lobes ≥ 5 times as long as wide, apex caudate **1. D. cyanea**
    4. Calyx tube > 5 mm long
      7. Leaf margin entire or subentire; bract 4–6 mm long; plant drying green **3. D. integra**
      7. Leaf margin crenate or serrate; bract 6.5–19 mm long; plant drying blue-green **8. D. trisepala**

1. Damrongia cyanea (Ridl.) D.J.Middleton & A.Weber, Taxon 60: 777. 2011.— *Didymocarpus cyaneus* Ridl., J. Bot. 38: 68. 1900.— *Chirita cyanea* (Ridl.) B.L.Burtt, Notes Roy. Bot. Gard. Edinburgh 26: 267. 1965.— Type: Thailand, [Phangnga], Kasoom, Nov. 1896, cultivated in Penang Botanic Garden and collected between June and Sept. 1897, *Curtis, s.n.* (lectotype **SING** [SING0117730], designated here; isolectotypes **SING** [SING0202280], [SING0202279], [SING0202277], [SING0202278], [SING0202276]).

Acaulescent lithophytic herb to ca 20 cm tall. *Leaf arrangement* obscure; petiole 0.8–8 cm long, 1.5–2 mm diameter, with long, orange-brown eglandular hairs; blade thinly papery when dry, green above, paler beneath, lanceolate, elliptic or oblanceolate, 1.8–18.5 × 1–6.5 cm, 1.8–3.1 times as long as wide, apex broadly acute to obtuse, base more or less shortly attenuate, sometimes unequal, margin serrate, indumentum above of eglandular hairs of different lengths, beneath of sparser eglandular hairs, abundant only along the veins, margin ciliate, secondary veins flat above and beneath, 4–8 pairs. *Inflorescences* scapose, 1–many-flowered, short to over 20 cm long and often compound; peduncles 1.9–2.5 cm long, ca 0.5 mm diameter, with patent eglandular hairs; bracts green, ligulate, 5–8 × ca 0.6 mm, apex acute, sessile, margin subentire, with a dense eglandular indumentum on both sides; pedicels 15–30 mm long, with long and short eglandular hairs. *Calyx* actinomorphic, green, with long eglandular hairs outside, inside glabrous basally and hairy apically; sepals divided to base, narrowly triangular, 7–10.5 × 0.6–1 mm wide, apex caudate, margin entire. *Corolla* 27–40 mm long, purple to blue; tube ca 25 mm long; upper lip ca 2.5 mm long,

lower lip ca 10.5 mm long; lobes white to purple or blue, glandular hairy outside, glabrescent inside, elliptic, very slightly spreading, upper lobes ca 4.5 × 7 mm, lateral lobes ca 5.5 × 7.5 mm, lower lobe ca 3 × 8.5 mm. *Stamens* included in tube, inserted ca 11 mm from corolla base; filaments 10–10.5 mm long, 0.3–0.7 mm diameter, straight, slightly swollen in the middle, pale green-yellow, glabrous; anthers white, 1.5–2 × 0.6–1 mm, thecae divergent; staminodes 3, the lateral two ca 4 mm long, arising ca 9 mm above the corolla base, the central ca 1 mm long, arising ca 10.5 mm above the corolla base. *Disk* ca 1 mm high, 5-lobed, lobes deeply divided but forming a continuous ring. *Pistil* ca 23.5 mm long; ovary ca 9.5 × 1 mm, densely glandular hairy; style ca 11 × 0.4 mm, sparsely glandular hairy; stigma lower lip ca 2.5 mm long, bilobed. *Capsule* 2.5–4.2 cm long, ca 3 mm wide, covered in fine glandular hairs, orthocarpic, valves straight. *Seeds* maroon, elliptic, ca 0.4 × 0.2–0.3 mm.

Thailand.— UNKNOWN ORIGIN: *Unknown collector s.n.*, with a letter from Raffill to Hemsley dated 17/10/1907 (**K**); *Curtis s.n.,* probably cultivated (**K**); PENINSULAR: Phangnga [Kasoom [Kasum], Nov. 1896, cultivated in Penang BG and collected between June and Sept. 1897, *Curtis, s.n.* (**SING** 5 specimens)]; Surat Thani [Khirirat, Khao Phra Rahoo [Khao Phra Rahu], ca 200 m, 20 Sept. 1963, *Smitinand & Sleumer 1151* (**BKF**, **E**, **K**, **L**, **SING**)]; Krabi [Mueang Krabi, near Khao Penom Bencha [Khao Phanom Bencha] National Park, Ban Huay To, 60 m, 17 June 2006, *Williams et al. 1807* (**A**, **BKF**, **E**); Khao Phanom Bencha, Khao Look Chang [Khao Luk Chang] Area, 13 Oct. 2002, *Palee 562* (**CMUB**)].

Distribution.— Endemic to Thailand.

Habitat and Ecology.— On limestone cliffs in shade of surrounding vegetation.

Proposed IUCN Conservation Assessment.— Endangered (EN B1ab(iii), B2ab(iii)). From the known localities in southern Thailand the Extent of Occurrence (EOO) is less than 5000 km^2 and Area of Occurrence (AOO) is calculated to be 12 km^2 at three localities (although note that no plants have been recently collected in Phangnga). Not all of these localities are in protected areas, the distribution is fragmented, and many limestone areas in the region are subject to human disturbance, possible mining for cement, and changes in the microclimate due to conversion of surrounding forest to agricultural land.

Notes.— The original publication only cites a Curtis specimen collected "in the Siamese territory at Kasum". Burtt (1965: 267) cites "Curtis (holo)". Wood (1974) suggested the type specimen is in Kew but noted that he had not seen it and we were unable to trace any material there. The only original material traced is in SING, one specimen of which has been lectotypified.

Burtt described the fruit of the *Unknown collector s.n.* (**K**), a specimen also annotated "Bot Mag 8204", as "slightly but distinctly twisted". The very little fruiting material examined has inconsistent and almost imperceptible twisting of the valves as was also observed in other straight-valved species and is not, therefore, a useful character to distinguish this species.

This species is most easily recognised by the long corolla, the brownish indumentum on young leaves and petioles, and the calyx lobes long and very narrow.

2. Damrongia fulva (Barnett) D.J.Middleton & A.Weber, Taxon 60: 777. 2011.— *Chirita fulva* Barnett, Nat. Hist. Bull. Siam Soc. 20: 15. 1961 [Mar. 1961].— Type: Thailand, Surat Thani, Ban Kawp Kep [Kop Kaep], ca 50 m, 5 Aug. 1927, *Kerr 13171* (lectotype **K** [K000545590], designated by Barnett (1961: 253)). Fig. 1.

Acaulescent herb to ca 15 cm tall. *Leaf arrangement* obscure; petioles 0.6–2.5 cm long, 1–1.5 mm wide, densely covered in long, brownish, eglandular hairs; blade papery when dry, pale to mid-green above, paler beneath, lanceolate, elliptic or oblanceolate, 3–14.7 × 1.9–6.3 cm, 1.8–2.7 times as long as wide, apex acute, base acuminate, margin crenulate to serrulate, indumentum of eglandular hairs above and beneath, hairs predominantly short above, longer and denser along the veins beneath, secondary veins slightly raised beneath, 4–6 pairs. *Inflorescences* scapose, 1–6-flowered; peduncles 0.5–1 cm long, indumentum as on petioles; bracts linear, 4–6 × 0.5–1 mm, apex acute, sessile, margin entire to crenate, tomentose; pedicels 9–15 mm long, indumentum as on petioles. *Calyx* pale green, divided almost to base, outside densely eglandular tomentose, inside hairy; tube 0.3–0.7 mm long; lobes narrowly

lanceolate to triangular, unequal, 5–11 mm long, 0.8–1.3 mm wide, apex narrowly acute to acuminate, margin entire. *Corolla* 10–15(–22) mm long, pale green outside, white inside, outside with a glandular indumentum; tube 11–12 mm long; upper and lower lip lengths not measurable in available material; lobes round to elliptic, upper lobes ca 2 × 2 mm, lateral lobes ca 3 × 2.5 mm, lower lobe 3.3–3.5 × 2.3–3.5 mm. *Stamens* probably slightly exserted from tube, inserted at ca 4.5 mm from corolla base; filaments ca 5 × 0.1–0.2 mm, apically bent, glabrous; anthers ca 2 × 0.5–1 mm, thecae strongly divergent; staminodes 3, the lateral ca 1 mm long, arising ca 6 mm above the corolla base, the central not measured, arising ca 6.5 mm above the corolla base. *Disk* 0.1–0.4 mm high, annular, irregularly lobed, lobes divided to base. *Pistil* 10–14 mm long; ovary 2.8–4 × ca 1.5 mm, densely covered in fine glandular hairs; style 7–10 mm long, ca 0.3 mm diameter, with the same indumentum as the ovary, but becoming glabrescent apically; stigma with an expanded 1 mm long lower lip, bilobed. *Capsule* ca 0.85 cm long, ca 2 mm wide, plagiocarpic, valves straight. *Seeds* not seen.

Thailand.— PENINSULAR: Surat Thani [Koh Samui, Khao Ma Ngan [Khao Ma Ngaen], 26 June 1966, *Sakol 1119* (**BK**); Nasan, Ban Kawp Kep [Ban Kop Kaep], ca 50 m, 5 Aug. 1927, *Kerr 13171* (**K**)]; Nakhon Si Thammarat [Lan Saka, ca 100 m, 25 Apr. 1928, *Kerr 15390* (**K**); Thung Song, Kao Chem [Khao Chaem], 21 July 1929, *Rabil 138* (**BKF**, **K**); Thung Song, Khao Tham Long, 50 m, 31 Aug. 1982, *Shimizu et al.T-28990* (**BKF**); Thung Song, Ban Khlong Yai, 11 Sept. 2010, *Middleton et al. 5393* (**BKF**, **E**)].

Distribution.— Endemic to Thailand.

Habitat and Ecology.— On limestone.

Proposed IUCN Conservation Assessment.— Endangered (EN B1ab(iii), B2ab(iii)) (Middleton, 2012a). The EOO is < 4700 km^2 and the AOO is about 24 km^2. The populations are fragmented and mostly do not occur in protected areas. Many limestone areas in the region are subject to human disturbance, possible mining for cement, and changes in the microclimate due to conversion of surrounding forest to agricultural land.

Notes.— This species is recognisable by the short corolla and fruit, the mostly crenulate leaf margin and the orange indumentum of the petioles.

3. Damrongia integra (Barnett) D.J.Middleton & A.Weber, Taxon 60: 777. 2011.— *Chirita integra* Barnett, Nat. Hist. Bull. Siam Soc. 20:16. 1961 [Mar. 1961].— Type: Thailand, Krabi, Panom Bencha [Phanom Bencha], 27 Mar. 1930, *Kerr 18684 (*lectotype **K** [K000545589], designated by Barnett (1961: 254); isolectotypes **ABD** (2 specimens), **K**, **BKF** [BKF257922]).

Acaulescent herb to 30 cm tall. *Leaf arrangement* obscure; petiole 1–17 cm long, delicate, with an indumentum of long, brownish multicellular hairs; blade thick papery, ovate to rounded, 4–17 × 3–7.7 cm, 1.3–2.3 times as long as wide, apex acuminate to acute, base rounded or to 1 cm peltate, often unequal, margin entire to subentire (very finely serrate), with sparse long, white hairs above, beneath with the same indumentum found on the petioles, abundant

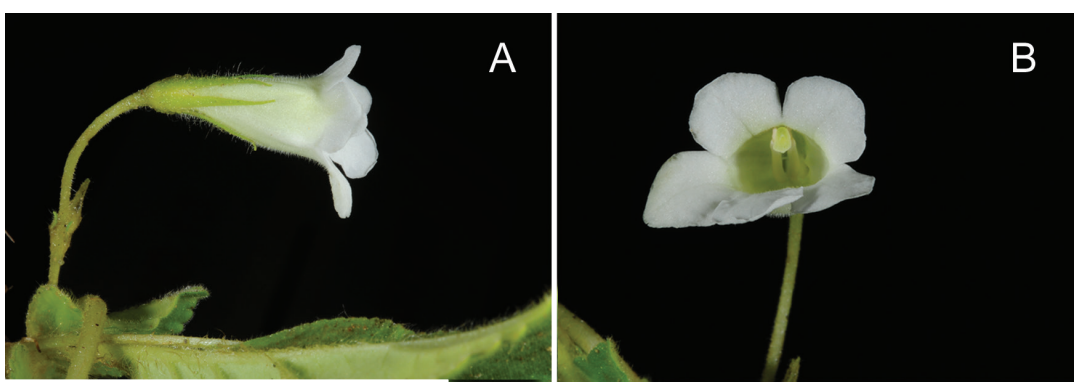

Figure 1. *Damrongia fulva* (Barnett) D.J.Middleton & A.Weber. A. Flower from side; B. Flower from front. Photos by Preecha Karaket.

only along the venation, secondary veins flat on both surfaces in dry material, 2–6 pairs. *Inflorescences* scapose, 2–4 flowered; peduncles 10–13.5 cm long, ca 1 mm diameter, with the same indumentum present on the petioles; bracts extremely reduced to absent, if present ca 1 × 0.2 mm; pedicels 3–10 mm long, with long brownish eglandular hairs. *Receptacle* slightly plagiotropic. *Calyx* bilabiate, green, densely eglandular hairy outside, glandular inside; tube 5–8 mm long, lobes lanceolate to triangular, the upper ca 5 × 2.5 mm, the lower 7.5–8 × 2.8–3 mm, apex broadly acute to obtuse, margin entire. *Corolla* 33.5–42.5 mm long, purple outside, lobes white inside, throat with purple and white stripes and a yellow patch, eglandular hairy outside, with sessile glands inside; tube ca 27.5 mm long; upper lip ca 6 mm, lower lip ca 11 mm; lobes elliptic to ovate, upper lobes ca 7.5 × 10 mm, lateral lobes ca 8 × 7.5 mm, ventral lobe ca 9.5× 8 mm. *Stamens* included, inserted ca 10 mm from corolla base; filaments 7.5–10 mm long, ca 1 mm diameter, straight, glabrous; anthers ca 2.6 × 1.8 mm, thecae slightly subparallel and apically confluent; staminodes 3, the lateral well developed, ca 8 mm long, arising ca 11 mm above the corolla base, with globular antheroids, apically coherent, the central ca 1.5 mm long, arising ca 12 mm above the corolla base. *Disk* 0.2–1 mm high, annular, deeply 5-lobed or irregular. *Pistil* ca 25 mm long; ovary 6.5–8 mm long, ca 2 mm diameter, densely eglandular and glandular hairy, less so at the base, and with sessile glands; style pale green, ca 15 mm long, ca 1 mm diameter, decreasingly glandular hairy from base to top; stigma not measured. *Capsule* shorter than the persistent calyx, ca 1 cm long, plagiocarpic, valves straight. *Seeds* not seen.

Thailand.— PENINSULAR: Krabi [Panom Bencha [Phanom Bencha], 27 Mar. 1930, *Kerr 18684* (**ABD** (2 specimens), **BKF**, **K** (2 specimens)); ibid., trail from Ban San to top of Khao Penom Bencha [Phanom Bencha], 1000 m, 20 June 2006, *Williams et al. 1995* (**BKF**, **E**)].

Distribution.— Endemic to Thailand.

Habitat and Ecology.— Lower montane forest.

Proposed IUCN Conservation Assessment.— Critically Endangered (CR B1ab(iii)). This species is only known from Khao Phanom Bencha National Park which is around 50 km^2 in total. Although it is in a National Park the area is subject to considerable tourist pressure. It was previously listed as Data Deficient by Middleton (2012b).

Notes.— This species can be recognised by the combination of entire or subentire leaf margin, peltate or rounded leaf base, and sub-umbellate inflorescence.

4. Damrongia lacunosa (Hook.f.) D.J.Middleton & A.Weber, Taxon 60: 777. 2011.— *Didymocarpus lacunosus* Hook.f., Bot. Mag. 118: t. 7236. 1892.— *Chirita lacunosa* (Hook.f.) B.L.Burtt, Notes Roy. Bot. Gard. Edinburgh 26: 267. 1965.— Type: Thailand, Tarutao Island, Aug. 1888, *Curtis 1655* (lectotype **K** [K000438736], first step designated by Wood (1974: 151), second step designated here; isolectotypes **SING** [SING0117722, SING0117721]).

Acaulescent herb to 20 cm tall. *Leaf arrangement* obscure; petiole 1–11 cm long, robust, ca 2.5 mm diameter, densely eglandular hairy; blade thin when dry, green above, pale green beneath, lanceolate, elliptic or ovate, 2.5–13.5 × 2–8 cm, 1.2–2(–3.8) times as long as wide, apex broadly acute, base shortly attenuate, obtuse or slightly auriculate, sometimes unequal, margin serrate, indumentum above of short and fine eglandular hairs, beneath of longer and brown eglandular hairs, especially abundant along the veins beneath, veins sunken above, raised beneath, 5–8 pairs of secondary veins. *Inflorescences* scapose, can be wide and with a well-developed compound cyme, 2–10-flowered; peduncles 6–15+ cm long, 1–2 mm diameter, densely eglandular hairy; bracts lanceolate to narrowly so, ca 6 × 1.5–2 mm, apex acute, base sessile, margin entire, covered in the same indumentum as the peduncles; pedicels 4–9 mm long, with the same indumentum as the peduncles. *Calyx* bilabiate, with sparse, long eglandular hairs outside, glabrous inside; tube 3–3.5 mm dorsally, 3 mm laterally and ventrally, lobes triangular or lanceolate, upper lobe ca 8 mm long, lateral lobes ca 7 mm, ventral lobes ca 5.5 mm, 0.7–1.4 mm wide, apex acuminate, margin entire. *Corolla* (20–)34.5–37.5 mm long, blue or purplish, tube narrow at base, then broadening, slightly pouched ventrally, finely glandular hairy outside, glabrous inside; tube (18–)31.5 mm long; upper lip ca 1.5 mm, lower lip ca 8.5 mm; lobes elliptic, upper lobes (1.7–)3 × (3.6–)6.5 mm, lateral lobes (3.1–)5.5 × (2.8–)5 mm, lower

lobe (3.4–)6 × (3.9–)7 mm. *Stamens* included, inserted (9.7–)17 mm from corolla base; filaments 9–11 mm long, 0.7–1.3 mm diameter, straight for ¾ of their length, swollen in the middle, then sharply bent, with a 1–1.2 mm long projection at the anther insertion, glabrous; anthers ca 2.3 × 1 mm, thecae divergent; staminodes 3, the lateral 3–6 mm long, arising (8–)14 mm above the corolla base, the central ca 4.5 mm long, arising (8–)14 mm above the corolla base. *Disk* ca 0.5 mm high, annular, deeply 5-lobed. *Pistil* 25–30 mm long; ovary 10–14 mm long, 0.6–1.2 mm diameter, densely glandular hairy; style 10–12 mm long, ca 0.5 mm diameter, glandular hairy; stigma ca 3.5 mm long, linguiform, shallowly bilobed. *Capsule* 2.7–6 cm long. *Seeds* not seen.

Thailand.— UNKNOWN ORIGIN [but probably Tarutao]: Cultivated in Penang, flowered on 30 July 1891, fruited on 25 Sept.1891, *Unknown collector s.n.* (**K**); PENINSULAR: Satun [Tarutao Island, Apr. 1892, *Curtis 1655* (**K**, **SING** (2 specimens)); ibid., Aug. 1888, *Curtis 1655* (**K**); ibid., *Curtis s.n.* (**SING**)].

Distribution.— Peninsular Malaysia.

Habitat and Ecology.— On limestone rocks, in shade or semi-shade

Proposed IUCN Conservation Assessment.— Least Concern (LC). The distribution of this species in Thailand is restricted to Ko Tarutao. However, it is fairly widespread in Peninsular Malaysia, where it is recorded from Kelantan, Terengganu, Pahang, Perak and Kedah.

Notes.— The flower measurements in brackets in the description above are estimates based on a smaller flower which was observed but could not be measured beyond its overall length.

The only Thai collections are the various *Curtis 1655* specimens from Tarutao. There are three distinct sets of material which have been associated with the type:

1. *Curtis 1655*, collected in Aug. 1888. There are three duplicates, one in Kew, two in Singapore. The Kew specimen has been chosen as the lectotype.

2. *Curtis 1655*, collected in Apr. 1892. This collection postdates the protologue and is therefore to be excluded from the original material. Specimens: **K** [K000438735], **SING** [SING0117723, SING0117724, SING017725].

3. K000438737 with label information: "Type of Bot. Mag. T. 7236!, Penang – Curtis, From J. Veitch & Sons, Flower July 30, Fruit Sept. 25. 1891". This specimen includes the same line drawings that are in the protologue. It would not make a suitable lectotype due to the provisions of Art. 8.2 of the ICN (McNeill *et al.*, 2012).

5. Damrongia orientalis (Craib) C.Puglisi, Taxon 65: 285. 2016.— *Streptocarpus orientalis* Craib, Bull. Misc. Inform. Kew 1911: 432. 1911.— Type: Thailand, Chiang Mai, Doi Sutep, 1800 ft, 29 Aug. 1909, *Kerr 769* (lectotype **K** [K000545610], first step by Hilliard & Burtt (1971: 371), second step by Puglisi *et al.* (2016: 285); isolectotypes **ABD**, **K** [K000545611], [K000545612], **PH** [PH00029114]). Fig. 2.

Caulescent herb to 1 m tall. *Leaves* opposite; petiole 0.5–8 cm long, with an indumentum of mixed short glandular and long eglandular hairs; blade softly herbaceous, mid to dark green above, paler beneath, ovate to trullate or round, 3–14 × 1.3–10 cm, 0.8–2.3 times as long as wide, apex broadly acute to rounded, base broadly acute to rounded, often unequal, margin crenate to serrate or dentate, indumentum of eglandular hairs above and, more sparsely, beneath, secondary veins only slightly raised beneath and often inconspicuous above, 3–5 pairs. *Inflorescences* subterminal, often elongated, cymose or sometimes with a thyrse of reduced cymes, few to many-flowered; peduncles 5–18 cm long, with an indumentum of mixed glandular and eglandular hairs; bracts green, oblanceolate, 5–9 × 1.7–3.5 mm, apex broadly acute, base sessile to attenuate, margin entire, with an indumentum of mixed glandular and eglandular hairs on both sides; pedicels 6–40 mm long, with the same indumentum observed on the peduncles. *Calyx* actinomorphic, green, densely glandular hairy on both sides, the upper three lobes joined at base for ca 0.4 mm; lobes narrowly lanceolate or triangular, 4–7.5 × 0.4–1.3 mm, apex acute, margin entire. *Corolla* (18–)23–36 mm long, purple-violet with dark purple fine stripes on throat and lobes, pendulous, trumpet-shaped and slightly reflexed upwards, with the lower lip longer than the upper, inside with two ridges of tissue arising between the upper lobes and surrounding the style, each ca 5 mm long and ca 1 mm wide, outside glandular hairy, inside minutely glandular hairy; tube

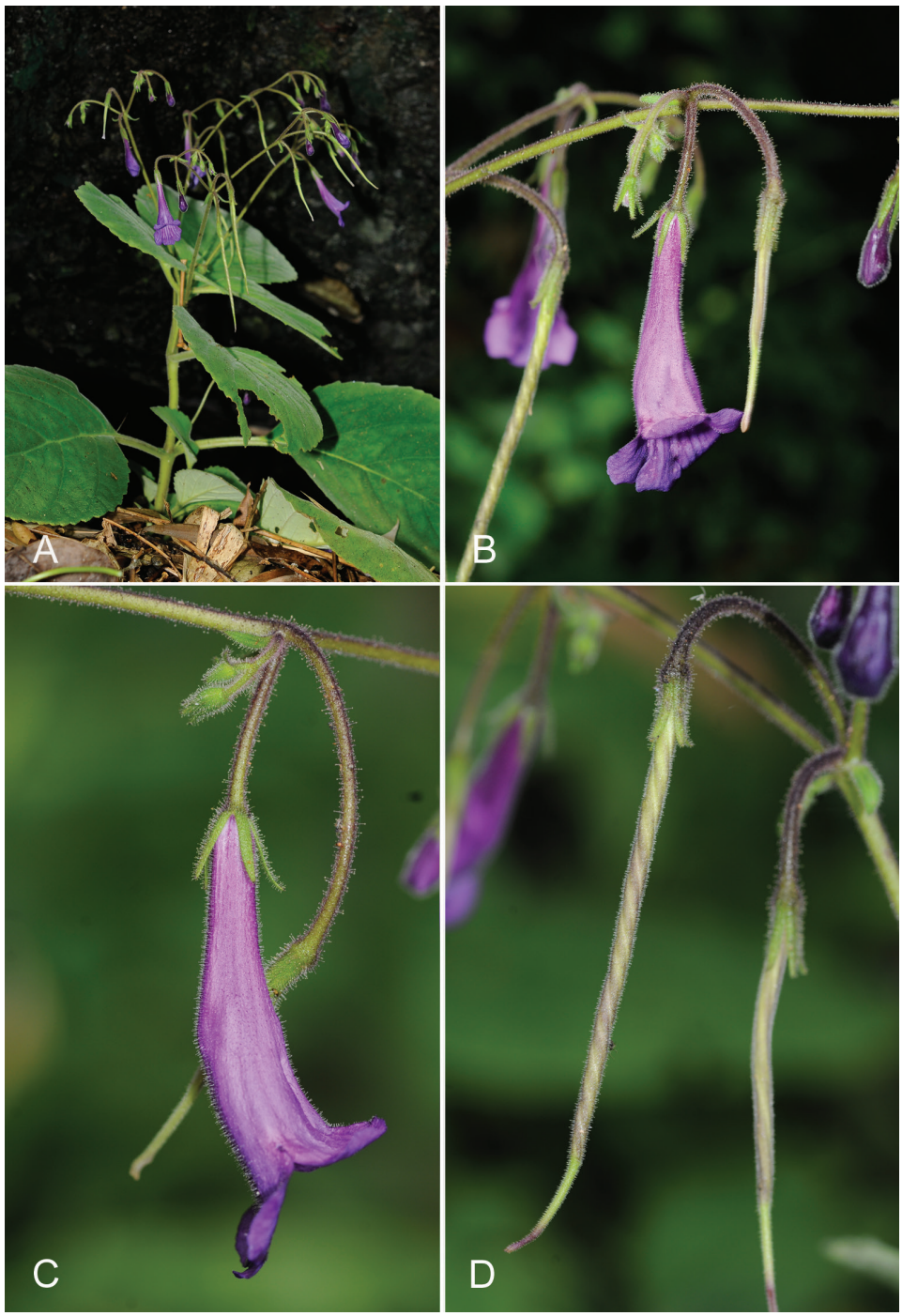

Figure 2. *Damrongia orientalis* (Craib) C.Puglisi. A. Habit; B. Inflorescence; C. Flower; D. Fruit. Photos by Preecha Karaket (A, B) and Pramote Triboun (C, D).

17.5–29 mm long; upper lip 2–6 mm, lower lip 6.5–9.5 mm; lobes elliptic, upper lobes 2.5–5 × 3.5–5.5 mm, lateral lobes 3.5–4.5 × 2.8–4.9 mm, lower lobe 2–4 × 2–4.5 mm. *Stamens* included, inserted 16–18.5 mm from corolla base; filaments 6–10 mm long, 0.3–1 mm diameter, slightly geniculate in the middle, with sparse glandular hairs or glabrescent; anthers 2–2.5 × ca 0.7 mm, thecae divergent; staminodes 3, sparsely glandular hairy, the lateral 3.5–6 mm long, arising 14–17 mm above the corolla base, the central ca 5 mm long, arising ca 20.5 mm above the corolla base. *Disk* 0.9–1.5 mm high, annular, shallowly 5-lobed. *Pistil* ca 28 mm long (probably still immature); ovary 13–20 mm long, 1–1.3 mm diameter, densely glandular hairy; style 8–14 mm long, 0.5–0.7 mm diameter, densely glandular hairy; stigma 2–2.5 mm long, lobed for half length, lobes ca 1 × 0.7 mm, triangular. *Capsule* 2–6 cm long, 0.8–1.2 mm diameter, orthocarpic, valves twisted, glandular hairy. *Seeds* maroon, elliptic, acuminate, 0.3–0.4 × 0.1–0.2 mm.

Thailand.— NORTHERN: Chiang Mai [Cult. Hort. Kew from seeds received from A.F.G. Kerr from the type locality, 30 vii 1913 (**K**); "type of Bot. Mag. T. 8526", 31 Mar. 1913 (**K** (2 specimens)); Chom Tong [Chom Thong], Mae Soi Valley, above Du Bo cave, 475 m, 30 Sept. 1991, *Maxwell 91-803* (**E**, **L**, **P**); Hot, Op Luang Nature Park, Doi Op Luang, Mae Jam [Mae Chaem] River, 550 m, 23 Oct. 1987, *Maxwell 87-1272* (**L**); Hot, Ob Luang [Op Luang] National Park, 23 Nov. 2005, *Pooma et al. 5816* (**BKF**); Doi Sutep, 1800 ft, 29 Aug. 1909, *Kerr 769* (**ABD**, **K** (3 specimens), **PH**); Mueang Chiang Mai, Doi Sutep, East side, 950 m, 17 Sept. 1988, *Maxwell 88-1098* (**L**); Mae Rim, Pong Yaeng, Pong Taa Hoen [Pong Ta Hoen], 8 Sept. 1995, *Nanakorn et al. 4181* (**E**, **QBG**); Mae Rim, Pong Yaeng, Mon Long, 25 Aug. 1998, *Serm 104* (**QBG**); Mae Rim, Queen Sirikit Botanic Garden, 15 Aug. 1994, *Nanakorn et al. 1339* (**E**, **QBG**); Mae Rim, Pong Yaa Sai, 10 Sept. 1997, *Nanakorn et al. 9612* (**QBG**); Namtok Mae Klang, 10 Nov. 1965, *Sangkhachand 26* (**BK**)]; Lampang [Hang Chat, Doi Kuhn Dahn [Doi Khun Tan] National Park, Waw Cayo, Mar Pry Station area, 550 m, 30 July 1994, *Maxwell 94-833* (**L**)]; Tak [Lan Sang National Park, ca 400 m, 23 Nov. 1965, *Hennipman 3117* (**E**, **L**); Lan Sang National Park, ca 200 m, 12 Jan. 1970, *Smitinand 10775* (**E**); Mae Sot, Khao Phra War [Khao Phra Wo], 700–850 m, 12 Oct. 1979, *Shimizu et al. T-18504* (**L**); Ban Tak, Nam Tok Kaeng Ghuai Forest Park, 255 m, 7 Nov. 2010, *Pooma et al. 7616* (**E**); Sam Ngao, Bhumibol Dam, 23 Aug. 2010, *Norsaensgri 7149* (**QBG**)]; Phetchabun [Nam Nao National Park, Tham Pha Hong, 4 Sept. 2014, *Maknoi 7190* (**QBG**)]; Phitsanulok [Thung Salaeng Luang National Park, Kaeng Sopa Waterfall, 22 Oct. 1984, *Murata et al. T-38620* (**QBG**)]; Sukhothai [Khiri Mat, Ram Kham Haeng National Park, Khao Luang,10 Sept. 2010, *La-ongsri & Norsaensgri 1153* (**QBG**); ibid., 462 m, 24 Oct. 2014, *Middleton et al. 5847* (**BKF**, **SING**); ibid., 960 m, 24 Oct. 2014, *Middleton et al. 5839* (**BKF**, **SING**); ibid., 760 m, 11 Aug. 2012, *Middleton et al. 5561* (**BK**, **BKF**, **E**); Muang Gow, 4 Nov. 1971, *Maxwell 71-665* (**AAU**, **BK**)]; NORTH-EASTERN: Loei [Phu Kradueng, 1300 m, 5 Sept. 1969, *Pinnin et al. 30* (**E**, **K**, **L**, **P**); Phu Krading [Phu Kradueng], ca 1300 m, 4 Sept. 1948, *Dee 233* (**E**); Phu Kradueng, 1 Sept. 1969, *Phusomsaeng & Nimanong 16* (**BK**); Phu Kradueng, 29 Aug. 1969, *Sangkhachand 2025* (**BK**); Naa Haew [Na Haeo], ca 700 m, 3 Sept. 1995, *Nanakorn et al. 4134* (**E**, **QBG**); Na Haeo, Hua Hom, Phu Suan Sai National Park, 8 July 2008, *Maknoi 2474* (**QBG**); ibid., 1 Sept. 2008, *Maknoi 2678* (**QBG**)].

Distribution.— Currently endemic to Thailand but likely to occur in Myanmar and Laos.

Habitat and Ecology.— Deciduous forest.

Proposed IUCN Conservation Assessment.— Least Concern (LC). The species is common and widespread in the Northern and Northeastern provinces of Thailand. Although the thresholds for EOO and AOO are not met to fall into one of the threat categories, and several collections sites fall within protected areas, there is an overall risk of habitat loss in the region and the situation should continue to be monitored.

Notes.— This species can be distinguished by the combination of its caulescent habit, long and pendulous corolla, and pendulous and strongly twisted fruit.

6. Damrongia purpureolineata Kerr ex Craib, Bull. Misc. Inform. Kew 1918: 364. 1918.— *Chirita purpureolineata* (Kerr ex Craib) D.Wood, Notes Roy. Bot. Gard. Edinburgh 31: 371. 1972.— Type:

Thailand, gorge below Ban Kaw [Ban Ko], ca 195 m, 24 Oct. 1911, *Kerr 2196* (lectotype **E** [E00627731], designated by Wood (1974: 152); isolectotype **K** [K000545607]). Fig. 3.

Acaulescent herb to 15 cm tall. *Leaf arrangement* obscure; petiole 0.5–9 cm long, slender, covered in stiff rusty brown, eglandular hairs; blade papery when dry, mid green above, paler beneath, elliptic, 1.3–13 × 0.8–7 cm, 1.3–2.3 times as long as wide, apex more or less broadly acute, base acute to shortly attenuate, often unequal, margin serrate to dentate, indumentum above of hispid, white, eglandular hairs, beneath of similar but rusty brown hairs, secondary veins raised beneath, 4–5 pairs. *Inflorescences* scapose, dense, 2–15-flowered; peduncles 4–11 cm long, slender, covered in rusty brown eglandular hairs; bracts green, lanceolate, 9–25 × 4–10 mm, apex acute to acuminate, base acute to shortly attenuate, margin subentire to finely serrate, sessile or with petiole 1–4 mm long; pedicels 1–6 mm long, with the same indumentum as the peduncles. *Calyx* bilabiate, pale green, eglandular hairy inside and outside; tube 9–10 mm long dorsally, 6–9 mm ventrally and laterally; lobes triangular, strongly unequal, upper lobe 7–10 mm, lateral lobes ca 6 mm, lower lobes 6–9 mm, apex acute, margin subentire to dentate or serrate. *Corolla* ca 16 mm long, base pale green; tube 10–12.5 mm, whitish to pale purple with four dark purple lines inside and a paler line on the dorsal surface, all visible as pale purple lines outside; upper and lower lips not measured; lobes white, sometimes corolla entirely white, glabrous outside and inside except for some glandular hairs on the lower lobe and between the upper lobes; lobes lanceolate and spreading, upper lobes ca 3.5 × 2.5 mm, lateral lobes ca 6 × 2.8 mm, lower lobe ca 6 × 3.5 mm. *Stamens* borne at the throat, inserted ca 6 mm from corolla base; filaments ca3.5 mm long, ca 0.2 mm diameter, straight, white or purple, glabrous; anthers white, not measured (only damaged anthers seen), thecae slightly divergent; staminodes 3, the lateral ca 1.5 mm long, arising ca 7 mm above the corolla base, the central ca 1 mm long, arising ca 8 mm above the corolla base. *Disk* ca 0.5 mm high, annular, deeply 5-lobed. *Pistil* 18–20 mm long; ovary pale green, 8.5–9 mm long, 1.3–2 mm diameter, glabrous in the bottom half, finely eglandular hairy above; style pale green, ca 9 mm long, ca 0.2 mm diameter, finely eglandular hairy; stigma shallowly multilobed (not bilobed). *Capsule* 0.4–1 cm long, ca 1.5 mm wide, orthocarpic, valves straight. Seeds light brown, elliptic, 0.2–0.4 × 0.1–0.2 mm.

Thailand.— NORTHERN: Lamphun/Tak boundary [gorge below Ban Kaw [Ban Ko], *Kerr 2196* (**E**, **K**)]; Lamphun [Li, Mae Ping National Park, gorge in Mae Ping River, 300 m, 9 Sept. 2009, *Middleton & Triboun 4812* (**BKF**, **E** (2 specimens), **SING**)]; Tak [Bhumibol Dam, near Ping River, 4 Oct. 2007, *Sukhamta s.n.* (**BKF**)].

Distribution.— Endemic to Thailand.

Habitat and Ecology.— On limestone in deciduous forest.

Proposed IUCN Conservation Assessment.— Near Threatened (NT) (Middleton, 2012c). This species is only known from gorges in the Mae Ping on the border between Lamphun and Tak. It was once speculated to be extinct due to the construction of the Bhumibol Dam and the submergence of the type locality (Smitinand, 1969). Although this did undoubtedly cause loss of this and possibly other populations the current known populations are isolated and in protected areas and not under immediate threat of extinction. However, the range is very small and should be monitored.

Notes.— This species is distinguishable by the combination of slender petioles, large bracts, and a mostly white and short corolla.

7. Damrongia tribounii C.Puglisi **sp. nov.**

Most similar to *Damrongia lacunosa* and *D. trisepala* in habit, corolla shape and corolla colour. Differs from *D. trisepala* in the shorter calyx tube and the narrower and more pubescent calyx lobes, and from *D. lacunosa* in the indumentum of the petioles (villous in *D. lacunosa*, pubescent in *D. tribounii*) and leaf blades (leaf with short and fine hairs above and long and brown hairs beneath in *D. lacunosa* and leaf with a white indumentum, hispid above in *D. tribounii*) and in the longer calyx lobes.— Type: Thailand, Surat Thani, Khao Sok, coll. in 2013, cultivated at TISTR, vouchered in 2014 as *Triboun 6601* (holotype **BKF**). Fig. 4.

Acaulescent herb to 20 cm tall. *Leaf arrangement* obscure; petiole 1–12 cm long, covered in eglandular hairs; blade thick papery, mid to dark green above,

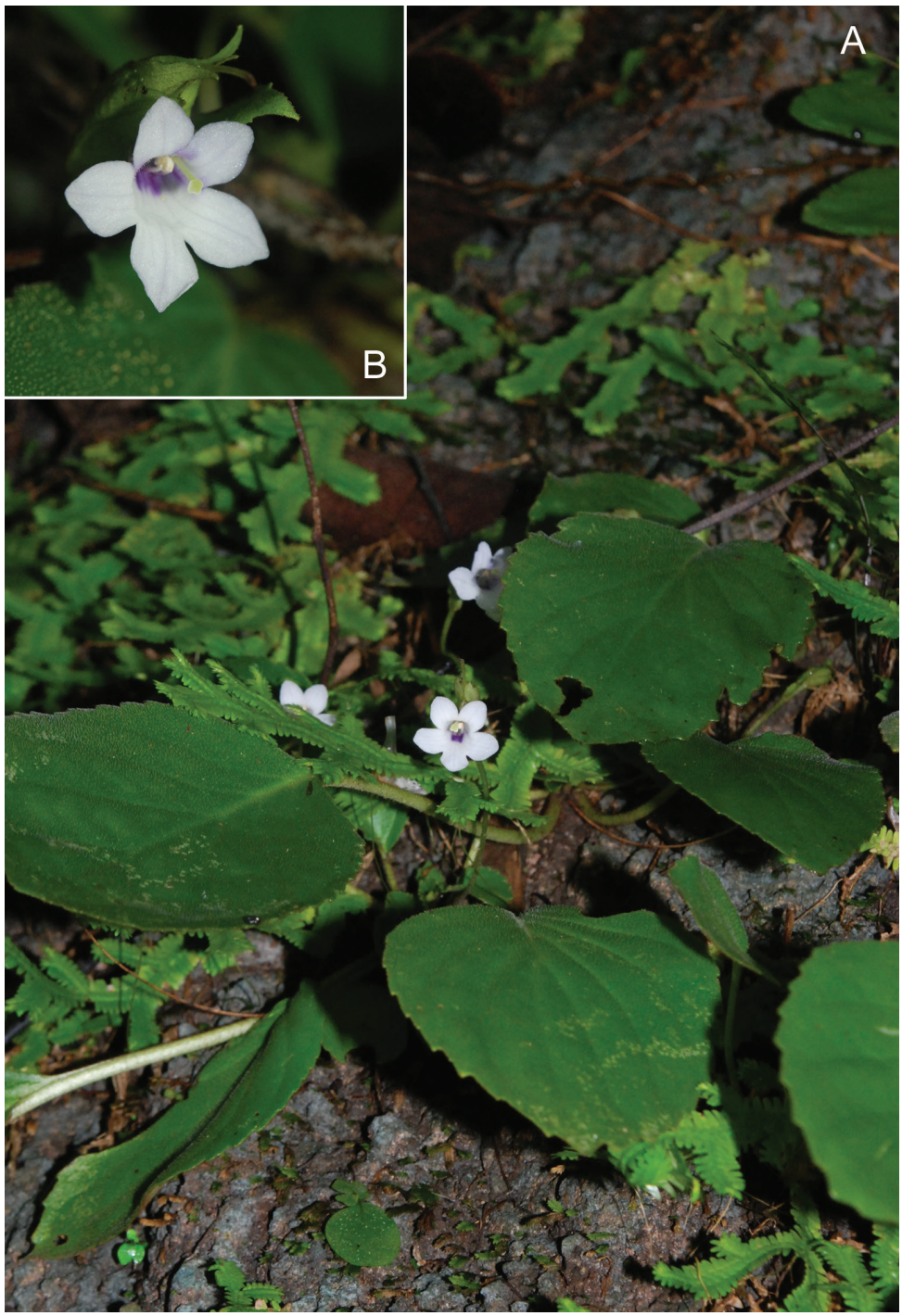

Figure 3. *Damrongia purpureolineata* Kerr ex Craib. A. Habit; B. Flower from front. Photos by David Middleton.

paler beneath, becoming almost blue-green when dry, lanceolate to broadly elliptic to almost rounded, 1–15 × 0.7–8.5 cm, 1–2.1 times as long as wide, apex broadly acute to acute, base acute, shortly attenuate to obtuse, sometimes unequal, margin minutely crenate or serrate, indumentum above of white, stiff eglandular hairs, uniformly dense, beneath dense only along veins, secondary veins strongly raised beneath, 4–8 pairs. *Inflorescences* scapose, more or less congested, 3–7-flowered; peduncles 5–25 cm long, densely eglandular hairy; bracts green, ensiform to narrowly lanceolate, 5.5–16 × 1.2–2 mm, apex acute, base sessile, margin crenulate to entire, eglandular hairy outside, glabrous inside or hairy towards the apex; pedicels 0.1–6 mm long, densely eglandular hairy. *Calyx* zygomorphic, with the upper lobe larger than the others, green, densely eglandular hairy on both sides; tube 2.5–3.2 mm laterally and

Figure 4. *Damrongia tribounii* C.Puglisi. A. Flower from front; B. Flower from side. Photos by Pramote Triboun.

ventrally, 3.2–4 mm dorsally, lobes triangular to lanceolate, the dorsal 13.5–14 mm long, the lateral 6–12.5 mm, the ventral 5–11 mm, all 1–2.1 mm wide, apex acute to acuminate, margin entire with sporadic denticulations. *Corolla* 30–45 mm long, purple, densely glandular hairy outside, glabrous inside the tube, with sessile glands on the limb, particularly dense on the upper lip and the lower lobe; tube 30–31 mm long; upper lip ca 4 mm long, lower lip 7–9 mm; lobes elliptic, upper lobes ca 4 × 6 mm, lateral lobes ca 5 × 6 mm, lower lobe size not available. Stamens included, inserted ca 18 mm from corolla base; filaments ca 10 mm long, 0.3–1 mm diameter, arched but not bent, swollen in the middle, with a ca 0.3 mm long projection by the anther insertion, brown, glabrous; anthers yellow, ca 2 × 0.5 mm, thecae fully divergent; staminodes 3, the lateral ca 5 mm long, arising ca 14 mm above the corolla base, the central ca 2 mm long, arising ca 11 mm above the corolla base. *Disk* 0.8–1 mm high, annular, more or less lobed. *Pistil* developing much later than the stamens, ca 25 mm long; ovary green, ca 16 mm long, ca 0.8 mm diameter, glandular hairy; style pale green, ca 7 mm long, ca 0.5 mm diameter, glandular hairy; stigma lower lip ca 1.5 mm long and shallowly bilobed. *Capsule* not seen. *Seeds* not seen.

Thailand.— PENINSULAR: Surat Thani [Phanom, Khao Sok National Park, Khao Phan Thurat, 80–100 m, 28 Aug. 1982, *Shimizu et al. T-28888* (**BKF**); Khao Sok, coll. in 2013, cult. at TISTR, vouchered in 2014, *Triboun 6601* (**BKF**)].

Distribution.— Endemic to Thailand.

Habitat and Ecology.— On limestone, in shade.

Proposed IUCN Conservation Assessment.— Data Deficient (DD). This species has only been collected in the wild twice and its distribution and population size are unknown. Khao Sok National Park has extensive limestone, much of which is difficult to explore.

8. Damrongia trisepala (Barnett) D.J.Middleton & A.Weber, Taxon 60: 777. 2011.— *Chirita trisepala* Barnett, Nat. Hist. Bull. Siam Soc. 20:18. 1961 [Mar. 1961].— Type: Thailand, Kao Sabap, 6 July 1927, *Put 905* (lectotype **K** [K000545608], designated by Barnett (1961: 255); isolectotypes **ABD**, **BKF** [BKF257925]). Fig. 5.

— *Damrongia cyanantha* Triboun, Thai For. Bull. (Bot.) 38: 109. 2010.— Type: Thailand, Kamphaeng Phet, Klong Lan waterfall, 16 June 2009, *Triboun & Yothakaew 4289* (holotype **BK**; isotypes **BKF**, **E**).

Acaulescent herb to 40 cm tall. *Leaf arrangement* obscure; petiole 2.5–18 cm, fleshy, green, densely eglandular strigose; blade papery when dry, dark green and shiny above, pale green beneath, characteristically acquiring a blue-green colouration when dry, elliptic, 4–20.4 × 1.5–10 cm, 1.5–2.9 times as long as wide, apex acute to acuminate, base acute, sometimes unequal, margin irregularly crenate-serrate, eglandular hirsute to glabrescent above, more densely hirsute beneath, especially along the veins, veins slightly raised beneath, 4–9 pairs, tertiary venation visible. *Inflorescences* scapose, sub-umbellate, 3–7-flowered; peduncles pink to brown, 0.5–31 cm long, sparsely hairy; bracts green, paired, lanceolate to cordate, 6.5–19 × 4–14 mm, sparsely hairy to glabrescent, apex broadly acute, base sessile, each pair joined at the base, margin slightly serrate-crenate; pedicels 1–25 mm long, sparsely hispid. *Calyx* tripartite, the upper three sepals partially or fully fused, dark green, eglandular hairy to glabrescent outside, glabrous inside; tube 7–13 mm; lobes lanceolate, the upper 3 larger than the 2 lower, 5–10 mm long, 4–7.5 mm wide, apex acute, margin irregularly and shallowly serrate. *Corolla* purple with darker markings ventrally, 25–52 mm long, outside and inside with sessile and stalked glands, sometimes glabrescent, inside with small glands at the base of the lobes, particularly abundant on the ventral lobe; tube 31–39 mm; upper lip 8–13 mm, lower lip 15–19 mm; lobes elliptic, upper lobes ca 9 × 11–12 mm, lateral lobes ca 10 × 10–12 mm, lower lobe 8–10 × 9–14 mm. *Stamens* included, inserted 16–19 mm from corolla base; filaments 11–13 mm long, 0.3–0.7 mm diameter, straight, swollen in the upper half, glabrous; anthers 2.5–3 × 0.5–1.5 mm, thecae completely divergent; staminodes 3, the lateral 2.3–3.5 mm long, arising 8–14 mm above the corolla base, the central 1.1–1.3 mm long, arising 11–12 mm above the corolla base. *Disk* pale yellow, 0.9–2.4 mm high, annular, shallowly 5-lobed. *Pistil* 33–37 mm long; ovary green, 6–13 mm long, 1–1.5 mm diameter, densely covered in sessile and shortly stalked glands; style purple, 20–27 mm long, ca 0.7 mm diameter, densely glandular hairy; stigma pale purple, lip shallowly bilobed, 1.2–2 mm long. *Capsule* 1.3–2 cm long, ca

3 mm wide, more or less plagiocarpic, valves straight. *Seeds* brown, elliptic, ca 0.3 × 0.1 mm.

Thailand.— NORTHERN: Kamphaeng Phet [Khlong Lan National Park, Khlong Lan waterfalls, 200 m, 4 Nov. 2010, *Pooma et al. 7461* (**BKF**); ibid., 20 Sept. 2015, *Tanming 887* (**QBG**); ibid., 14 Aug. 2012, *Sirimongkol et al. 419* (**BKF**); ibid., 16 June 2009, *Triboun & Yothakaew 4289* (**BK**, **BKF**, **E**)]; Tak [Mae Sot, Mae La Mao, Ban Huai Pla-Lod, 22 Aug. 2010, *Norsaensgri 7136* (**QBG**)]; Uttaradit [Nahm Baht [Nam Pat], Phu Miang, 16 Oct. 2005, Palee 816 (**A**, **CMUB**)]; EASTERN: Chaiyaphum [Ban Lui Lai, 700 m, 25 May 1974, *Geesink et al. 6955* (**BKF**, **K**, **L**); Khon Sarn [Khon San], Wat Pa Thum Thepnimit, Doi Khitchakut, 634 m, 12 Sept. 2014, *Tetsana et al. 842* (**BKF**, **SING**)]; SOUTH-EASTERN: Chanthaburi [Khao Khitchakut National Park, Khao Phra Bhat, 650 m, 17 Aug. 2008, *Phonsena 6167* (**BKF**); ibid., 950 m, 27 Aug. 2012, *Middleton et al. 5676* (**BKF**, **E** (2 specimens)); Khao Kitchakut National Park, road to Khao Phra Bhat [Khao Phra Bat], 600 m, 7 July 2002, *Palee 531* (**CMUB**, **L**); Khao Khitchakut National Park, 24 Sept. 2003, *Palee 623* (**CMUB**); Khao Sabap, 21 Aug. 1966, *Larsen et al. 1626* (**BKF**); ibid., 6 July 1927, *Put 905* (**ABD**, **BKF**, **K**)]; Nakhon Nayok

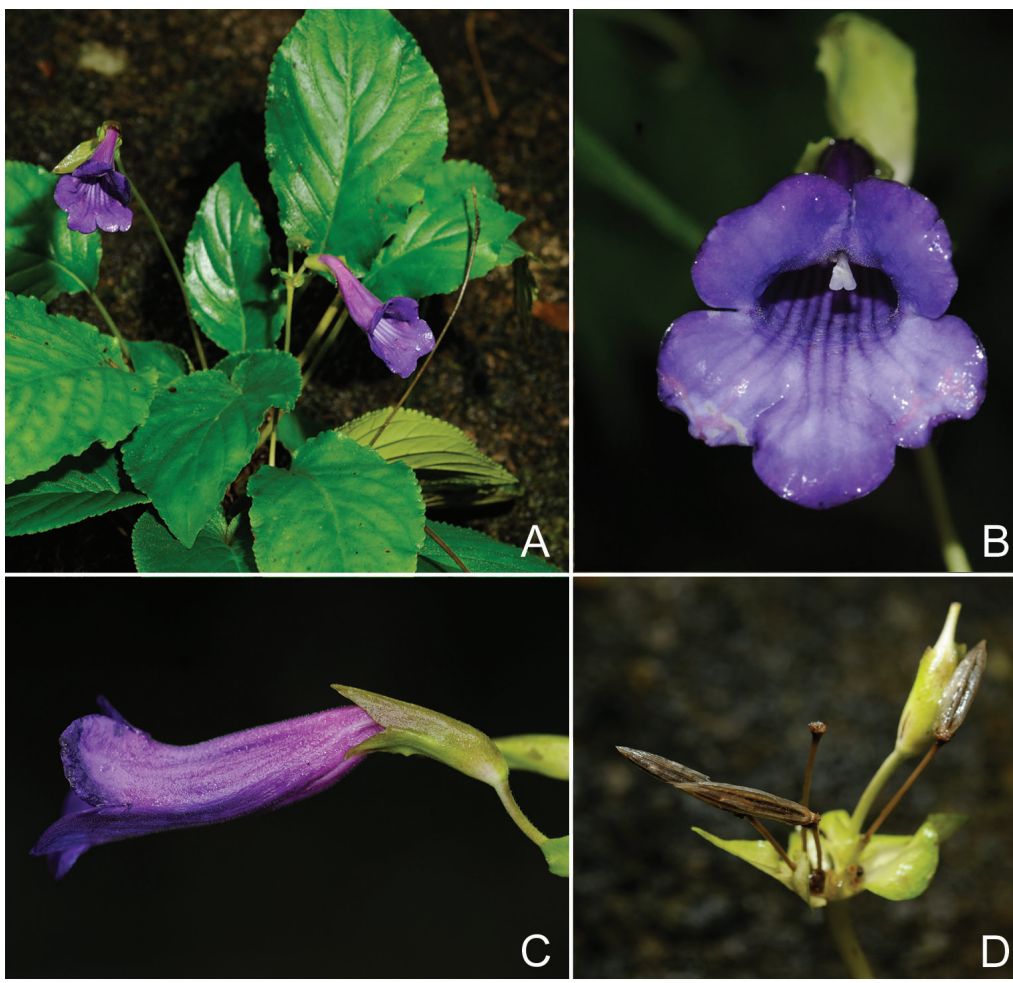

Figure 5. *Damrongia trisepala* (Barnett) D.J.Middleton & A.Weber. A. Habit; B. Flower from front; C. Flower from side; D. Fruit. Photos by Preecha Karaket (A, D) and Pramote Triboun (B, C).

[Mueang Nakhon Nayok, Nang Rong Falls, 150 m, 18 July 1975, *Maxwell 75-704* (**BK**, **L**); ibid., 13 Aug. 1968, *Larsen et al. 3355* (**BKF**, **K**, **L**, **P**, **SING**)]; Prachinburi [Na Di, Khao Yai National Park, trail to Heo Narok waterfall, 400 m, 20 Aug. 2012, *Middleton et al. 5626* (**BKF**, **E** (2 specimens))]; SOUTH-WESTERN: Prachuap Khiri Khan [Kaeng Krachan NP, Pa La-u, 220 m, 14 Sept. 2006, *Phonsena et al. 5232* (**BKF**)]; PENINSULAR: Phangnga [Si Phangnga National Park, Namtok Tamnang, 8 July 2007, *Maknoi 1613* (**QBG**); Takua Pha, Ban Kukkak, Pi Sairoong Fall, ca 100 m, 27 Aug. 2007, *Wongprasert 078-45* (**BKF**)]; Trang [Huai Yot, Khao Phu-Khao Ya [Khao Pu-Khao Ya] National Park, Nam Tok Ton Khran, 100 m, 14 June 2006, *Williams et al. 1732* (**A**, **BKF**)]; Phatthalung [See Bahn Pote [Si Ban Pot], Kao Boo-Kao Yai [Khao Pu-Khao Ya] National Park, Riang Tong Falls, 300 m, 25 Sept. 1986, *Maxwell 86-737* (**BKF**, **CMU**, **L**)].

Distribution.— Endemic to Thailand.

Proposed IUCN Conservation Assessment.— Least Concern (LC). The species is widespread across much of Thailand and, although there is an overall risk of habitat loss, several collections sites fall within protected areas.

Notes.— This species is characterised by the dark blue-green colour of the dry specimens, the rough leaves, the long corolla tube and the large calyx lobes.

EXCLUDED SPECIES

Damrongia kerrii (Craib) Pellegr., Fl. Indo-Chine 4: 556. 1930. = *Petrocosmea kerrii* Craib, Bull. Misc. Info. Kew. 1918: 365. 1918. Type: Thailand, Chiang Mai, Doi Suthep, 1560 m, 6 Sept. 1914, *Kerr 3361* (lectotype **K**, designated by Wang (1985: 66); isolectotype **ABD**).

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