



Medinilla vexillifer (Melastomataceae: Dissochaeteae), an elegant new species from the Philippines

Che-Wei LIN^{1,*}, Rosario Rivera RUBITE²

1. The Herbarium, Taiwan Forestry Research Institute, No. 53, Nan-Hai Road, Taipei 100, Taiwan.

2. Department of Biology, College of Arts and Sciences, University of the Philippines Manila, Padre Faura, Manila, Philippines.

*Corresponding author's email: varalba@gmail.com

(Manuscript received 22 October 2019; Accepted 13 February 2020; Online published 24 February 2020)

ABSTRACT: *Medinilla vexillifer* C.W. Lin & Rubite (Melastomataceae) from the Philippines is a new species described and illustrated. It most resembles *M. calcicola* Merr., but differs in its shorter petioles that are 0.2–0.8 (vs. 1–2) cm long, lanceolate to ovate (vs. obovate) leaf lamina, cordate (vs. acute to acuminate) leaf base, upper leaf surface that is densely covered with brownish-yellow stellate and dendroid trichomes (vs. glabrous leaf surfaces), terminal or axillary (vs. only axillary) inflorescences, to 15 (vs. 2–2.5) cm long, and 4- or 5-merous (vs. 5-merous) flowers. This exquisite species has hairy leaves and apendulous inflorescence with bright pink bracts and white petals. The bracts are long-persistent and last for about five months, which may result in its high horticultural potential.

KEY WORDS: Dissochaeteae, *Medinilla*, Melastomataceae, Luzon, new species, Philippines.

INTRODUCTION

Medinilla Gaudich. (Trib. Dissochaeteae, Melastomataceae) is a genus widely distributed from Africa and Asia to Oceania and including almost 380 spp. (Bodegom and Veldkamp, 2001; Mabberley, 2017; Fernando 2018). Among them, the Philippines is one of the most biodiverse regions with some 80 species, 90% of which are endemic (Regalado, 1995). This genus is very attractive in vegetative and floral morphology with great commercial importance in ornamental horticulture. A few species are commonly found in tropical gardens and greenhouses across the world. In the flower markets of Southeast Asia, different species of *Medinilla* are commonly sold without specific locality information. Some of these plants include species that do not exactly match any description of known species. Therefore it is possible that yet other undescribed taxa are already in the horticultural trade.

Based on the revision by Regalado (1995), Philippine *Medinilla* are divided into 12 informal species groups. Based on a combination of vestiture types, leaf, stem, and inflorescence characters, and within each group additional details or characters to delimit species.

In October 2014, an unknown species of *Medinilla* was collected from Jiew-Hoe Tan's nursery in Singapore. About ten living specimens were legally imported through international trade, with the label describing the origin as a plant market in Manila, Philippines, but however lacking in specific locality information. Under careful observations, the *Medinilla*'s characteristics are quite consistent with Group 10 in Regalado's system, it is assignable to the group based on the hairy stem, leaf lower surface pubescent, setose or stellate-tomentose,

hypanthium pilose, setose or tomentose and bracts furfuraceous, which includes fifteen species.

The unidentified *Medinilla* sp. lacks locality data and our initial study shows it does not match any known taxa of *Medinilla* in the Philippines. We further analysed and compared relevant literatures, specimens, and cultivated plants of *Medinilla* sp. from neighbouring countries (Bakhuizen van den Brink, 1943; Chen and Renner, 2007; Maxwell, 1978; Nguyen, 2003; Regalado, 1990) and the species was found not to belong to any known taxon in these regions. Therefore, we thus conclude that conclusion that this *Medinilla* is indeed taxonomically novel.

In addition to the taxonomic description, we provide color plate, line drawing, an appendix of the herbarium specimens examined and comparison with morphologically similar species to aid in identification.

TAXONOMIC TREATMENT

Medinilla vexillifer C.W. Lin & Rubite, *sp. nov*

Figs. 1, 2.

Type: PHILIPPINES. Original locality not known; possibly from Luzon Island. Type specimen pressed from plants purchased from a floral market in Manila, Philippines and cultivated in a nursery in Taiwan, 25 Nov. 2018, C. W. Lin 676 (holotype PNH!; isotype SING!, TAIF!).

Scandent multi-branched shrub up to 80 m long. Stem terete, internodes to 10 cm long, shorter on the distal branches; nodes rather thickened, knobby, with densely covered with brownish-yellow dendroid trichomes, glabrescent, bark becoming striate on older stems; young stems about 3 mm in diameter, green.

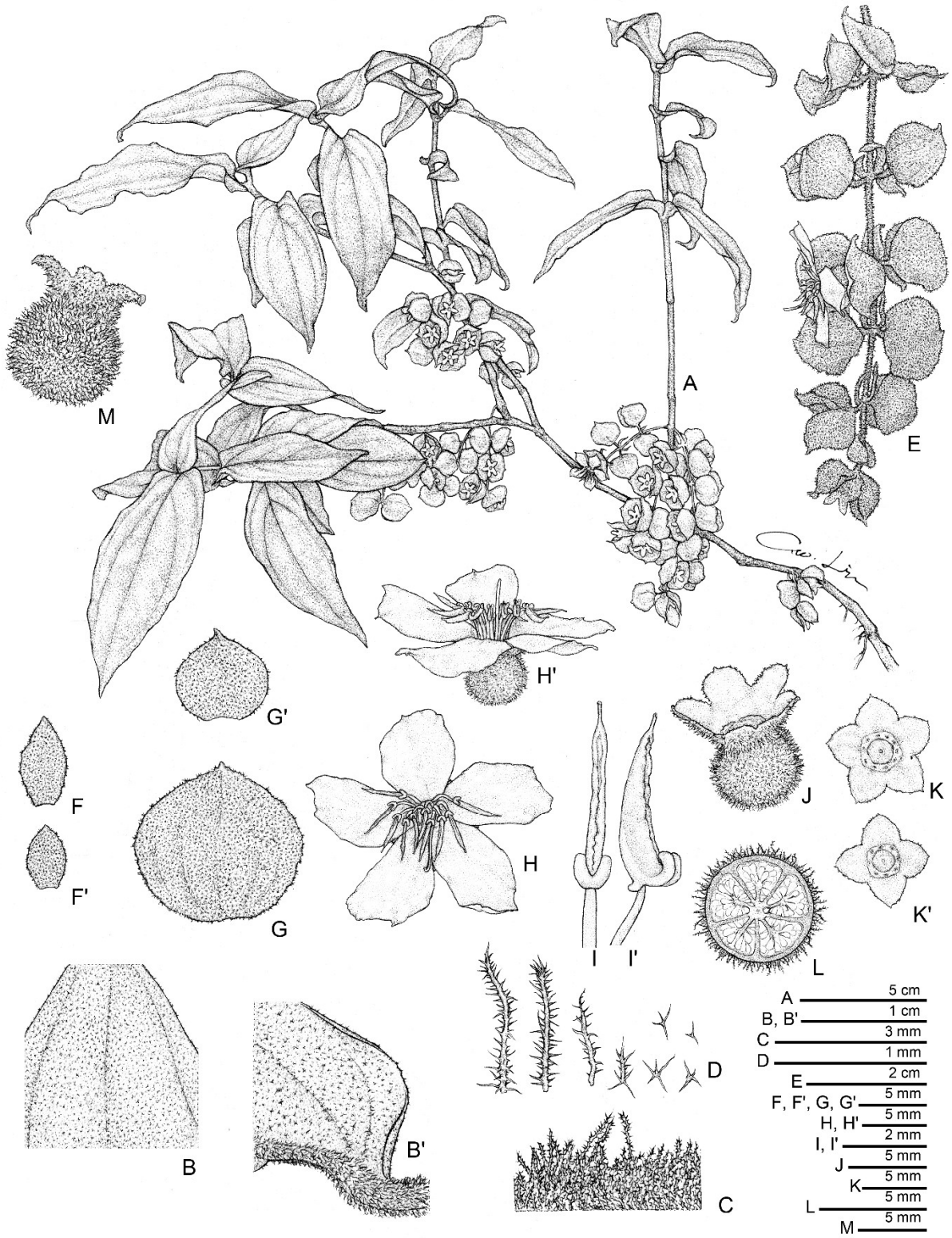


Fig. 1. *Medinilla vexillifer* C.W. Lin & Rubite. **A.** Habit; **B, B'.** Part of leaf, adaxial and abaxial surfaces; **C.** Vestiture of stem; **D.** Stellate and dendroid trichomes; **E.** Inflorescence; **F, G.** Bracts and secondary bracts; **H, H'.** Flower, face and side views; **I, I'.** Stamens, ventral and side views; **J.** Hypanthium; **K, K'.** Calyx, showing 4 and 5-merous conditions; **L.** Cross section of an immature fruit; **M.** Fruit. All from C.W. Lin 676 (TAIF).



Fig. 2. *Medinilla vexillifer* C.W. Lin & Rubite. **A, B, C.** Habit; **D.** Stem; **E.** Leaf; **F.** Portion of leaf adaxial surface, showing stellate trichomes; **G.** Portion of leaf abaxial surface, showing dendroid trichomes; **H.** Dendroid trichomes; **I.** Secondary bracts; **J, K.** Calyx and secondary bracts; **L.** Flower; **M.** Hypanthium and secondary bracts; **N.** Cross section of an ovary; **O.** Seeds. B-O from C.W. Lin 676 (TAIF).

TABLE 1. Comparison of *Medinilla vexillifer*, *M. calcicola* and *M. ternifolia*.

	<i>M. vexillifer</i>	<i>M. calcicola</i>	<i>M. ternifolia</i>
Stem vestiture	stellate and dendroid trichomes	stellate and dendroid trichomes*	setose
Leaf	opposite-decussate	opposite-decussate	ternate
petiole length (mm)	2–8	10–20	5–10
shape	lanceolate to ovate	obovate*	elliptic-ovate
base	cordate	acute to acuminate	cordate
vestiture			
adaxial surface	stellate and dendroid trichomes	glabrous	glabrous
abaxial surface	stellate and dendroid trichomes	stellate and dendroid trichome*	setose
Petiole			
length (cm)	0.2–0.8	1–2	0.5–1
vestiture	stellate and dendroid trichome	stellate and dendroid trichome*	setose
Inflorescence	terminal or axillary	axillary	axillary
length of whole (cm)	to 20	2–2.5	10–15
Flower	4- or 5-merous	5-merous	4-merous
hypanthium			
vestiture	stellate and dendroid trichomes	stellate and dendroid trichomes*	setose
calyx lobes	persistent	persistent	deciduous

* according to type specimen *Weber 1574*

Leaves simple, decussate, isomorphic, sometimes dimorphic in each pair, petioles 2–8 mm long, 1.5–2.5 mm across, with dense brownish-yellow dendroid trichomes; lamina lanceolate to ovate (occasionally panduriform-obovate), 4–14 cm long, 1.3–6.5 cm wide, base cordate, margin entire, revolute, apex attenuate to acute, thick chartaceous; venation acrodromous, 7-plinerved, with 1 primary vein and 2 pairs of suprabasal secondary veins, often symmetrical at union with midvein, the first pair produced 1–3 mm from the leaf base, a second pair produced 3–12 mm from the first pair, veins slightly depressed on the adaxial surface and prominent on the abaxial surface, secondary and tertiary veins inconspicuous (in dried specimens visible only on the abaxial surface, indistinct adaxially); adaxial surface dusky green, abaxial surface pale green, with brownish-yellow stellate and dendroid trichomes on both surfaces, densely adaxial veins. **Inflorescences** terminal or arising from leafless nodes, sometimes near the stem base, or from leafy nodes; pendulous racemes of cymes arranged in whorls on the main axis to 15 cm long, usually solitary, or sometimes two per node; all parts with dense brownish-yellow stellate and dendroid trichomes; subsessile or with peduncle to 3.5 cm long, reddish, bracteate, bracts green to dark pink, ovate to widely ovate, 2–7 × 2–5 mm, with brownish-yellow stellate and dendroid trichomes on both of surfaces; flowers up to 12 pairs or more per inflorescence; secondary bracts magenta, sometimes greenish tinge toward the margin, orbicular to very widely ovate, boat-shaped, 8–13 × 10–15 mm, with dense stellate and dendroid trichomes throughout; total inflorescence length to 20 cm. **Flowers:** 5-merous (rarely 4-merous); hypanthium spherical, green, ca. 5 × 5 mm, with densely stellate and dendroid trichomes; calyx lobes persist, white to pinkish, widely ovate, ca. 3 × 2.5 mm, connate into a rim, abaxially with densely stellate and dendroid trichome; apex apiculate; petals oblique, glabrous, obovate to widely oblong, 8–11

mm × 4.5–6 mm wide, white, apex mucronate; stamens 10 (rarely 8), isomorphic, usually positioned above the style, filaments slightly flat, ca. 4.5 mm long, white, narrowly lanceolate, apex attenuate, ventrally curved, ca. 4 mm long, purplish to pink, with a yellow dorsal spurlike appendage 0.3 mm long on the connective and a pair of partly joined stout, ventral appendages at the base of the anther sac; style terete, ca. 8 mm long, white; **Fruit** a globose berry, ca. 6 × 6 mm, green when young and with pale pink to bright pink calyx rim, entirely purplish-black when ripe. **Seeds** numerous, embedded in pulpy tissue, obovoid in lateral view, rounded-triangular in ventral view, ca. 0.7 × 0.4 mm, beige.

Distribution and ecology: The exact collection locality of *Medinilla vexillifer* is unknown; according to Mr. Tan (pers. comm., 2018), the new species has been imported to the Singapore from Manila in 2013 so we assume it originated Luzon Island in the Philippines.

Etymology: The specific epithet refers to the many colorful and pendeulous inflorescences, resembling countless flag.

Note: *Medinilla vexillifer* is entirely covered in trichomes. It belongs to Group 10 of Regalado (1995), which is characterized by hairy stem, leaf lower surface pubescent, setose or stellate-tomentose, hypanthium pilose, setose or tomentose and bracts furfuraceous. Based on its dense stellate trichomes on the stem and 5-merous flowers crowned with persistent calyx lobes, it most resembles *Medinilla calcicola* Merrill (1913) from Luzon Island. *Medinilla vexillifer* can be readily distinguished by its shorter petioles that are 0.2–0.8 (vs. 1–2) cm long, lamina lanceolate to ovate (vs. obovate, according to lectotype specimen *Weber 1574*), base cordate (vs. acute to acuminate), upper surface densely covered with brownish-yellow stellate and dendroid trichomes (vs. glabrous), inflorescence terminal or axillary (vs. only axillary), to 20 (vs. 2–2.5) cm long, and 4- or 5-merous (vs. 5-merous) flowers. The new species



is also similar to *Medinilla ternifolia* Triana (1871) in its lax racemes and 5-merous flowers, but differs in its stem, petiole and inflorescence densely covered with brownish-yellow stellate and dendroid trichomes (vs. setose), and persistent (vs. deciduous) calyx lobes. A detailed comparison of the three species is presented in Table 1.

ACKNOWLEDGMENTS

The authors are grateful to Jiew-Hoe Tan (president of Singapore Gardening Society), Ruei-Chau Lin, Chia-Yu Hung, Yu-Pin Ang and Chien-Fan Chen for providing research samples and for their help taking photographs. We also sincerely thank Dr. Frank Almeda (California Academy of Sciences) and anonymous reviewers for their valuable suggestions.

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- Appendix 1.** *Medinilla* specimens examined for morphological comparison.
- Medinilla calcicola* Merr., Luzon: Cagaya Province, Abulug River. 1 January 1912, *C.M. Weber 1574* (iso GH 00072533, CAS 0008159, CM 1532, MIN 1001793, F 0063629F)
- Medinilla capitata* Merr., Dinagat: May 1919, *M. Ramos & J. Pascasio, BS35179* (iso A 00072535, K 000867305)
- Medinilla cuernosensis* Elmer, Negros: 1911, *Elmer 10227* (iso A 00072539, L 0484345, MO 313731, NYBG 00228837)
- Medinilla erythroricha* Elmer, Mindanao: Davao Province. 1 May 1909, *A.D.E. Elmer 10537* (iso A 00072550, BISH 1003298, GH 00072549, NYBG 00228846.)
- Medinilla ferruginea* Merr., Dinagat: May 1919, *M. Ramos & J. Pascasio BS 35217* (iso A 00072551, K 000867294)
- Medinilla halconensis* Merr., Mindanao: Oriental Mindoro Province, Mt. Halcon, November 1906, *E. D. Merrill 5642* (iso G 00353706, K 000867303)
- Medinilla inaequifolia* C.B. Rob., Polillo, October 1909, *R.C. McGregor 10264* (iso K 000867295, NYBG 00228852)
- Medinilla lagunae* S. Vidal, Luzon: Albay Province, 1841, *H. Cuming 1333* (holo K 000867308, K 000867307; iso L 0597836; syn MA 398187)
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- Medinilla leytensis* Merr., Leyte: Masaganap, Jaro, 20 September 1914, *C. A. Wenzel 1140* (leco A 00003547; iso NYBG 00228857, GH 00003548)
- Medinilla microcephala* Regalado, Luzon: Laguna Province, Paete, July 1909, *F.W. Foxworthy 8986* (iso K 000867293)
- Medinilla pycnantha* Quisumb. & Merr., Luzon: Nueva Vizcaya Province. Mount Alzapan, 1 June 1925, *M. Ramos & G. E. Edaño BS 45580* (iso A 00072567, NYBG 00228883, BM 000796142)
- Medinilla radicleflora* Quisumb. & Merr., Mindanao: Davao Province, Mt. Mayo. 1 April 1927, *M. Ramos & G. Edano 49544* (iso NYBG 00228884, K 000867312, US00120619)
- Medinilla setigera* (Blume) Miq., Luzon: Sorsogon Province, Bulusan, Mt. Bulusan. October 1915, *A.D.E. Elmer 14368* (syn L 0008984, U 0226549)
- Medinilla ternifolia* Triana, Luzon: Laguna, Mt. Makiling. September 1910, *E.D. Merrill 418* (neo US 1157255), Jun 1917, *A.D.E. Elmer 17518* (US 1237144), 12 May 1968, *M.G. Price s.n.* (US 2553796); Mindanao: Davao Province, Todaya, Mt. Apo. May 1909, *A.D.E. Elmer 10602* (US 917807); Mindoro: Baco River, Apr 1905, *R.C. McGregor 200* (US 854968).
- Medinilla williamsii* C.B. Rob. Mindanao: Zamboanga, Sax River, 9 February 1905, *R.S. Williams 2412* (iso US 707951). Annotated as *Medinilla venosa* (Blume) Blume by J.C. Regalado in 1991.