

## REINSTATEMENT OF BEGONIA LEPIDA BLUME

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Deden Girmansyah. 2012. Menerima kembali jenis *Begonia lepida* Blume. *Floribunda* 4(4): 88–92. — Berdasarkan analisa karakter morfologi dari jenis *B. lepida* dan *B. bracteata* mempunyai ciri-ciri morfologi yang spesifik sehingga dengan mudah dapat dibedakan. Oleh sebab itu, *B. lepida* Blume dikembalikan statusnya sebagai jenis.

Kata kunci: *B. bracteata*, *B. lepida*, *Begoniaceae*, karakter.

Deden Girmansyah. 2012. Reinstatement of *Begonia lepida* Blume. *Floribunda* 4(4): 88–92. — Based on a morphological characters analysis, the typical individuals of *B. lepida* and *B. bracteata* are easily distinguished. Consequently, *B. lepida* is reinstated as species level.

Keywords: *B. bracteata*, *B. lepida*, *Begoniaceae*, characters.

Based on their shape and size of habit, leaves, flowers and fruits. Backer & Bakhuizen van den Brink (1968) listed *Begonia lepida* Blume as a synonym of *B. bracteata* Jack. Van Steenis (1972) described *B. bracteata* briefly in his account of the Mountain Flora of Java but used the colour picture of *B. lepida* to illustrate it. Whereas, the type of *B. bracteata* was lost when the ship which carrying Jack herbarium samples from Bengkulen have been burned. In the time, Jack have published *B. bracteata* as new species in 1834 at Journal of Botany. After burning, there is no Herbarium collection of *B. bracteata* as a type specimen. There is only description on the Jack publication.

During a floristic study in Sumatra from 2009–2011 supported by Royal Botanical Gardens Edinburgh in collaboration with Herbarium Bogoriense, several *Begonia* specimens were collected from this trip. Some new species included neotypification of *B. bracteata* were published (Hughes & Girmansyah 2011).

In the present study, a detailed study of morphological characters was conducted to clarify the confusion. The result of the study show that the specimens named by Blume as *B. lepida* is strikingly distinct from *B. bracteata* and *B. lepida* Blume is reinstated as species level.

### MATERIALS AND METHODS

The study was based on a morphological characters analysis of living plants as well as dry herbarium specimens and material preserved in alcohol 70% from BO and L.

### RESULTS

A detailed study of morphological characters of specimens named by Blume as *B. lepida* show that it is strikingly different from *B. bracteata* in its leaf margin, flower, fruit and seed. Recent collections confirm these differences as listed in table 1. For this reason, *B. lepida* is reinstated as a distinct species.

### IDENTIFICATION KEY

- a. Stem with long erect translucent hairs, stipule hairier, leaves bullate, tepals pure white, fruit green hairy. .... *B. bracteata*
- b. Stem with appressed, matted, red hairs, stipule reddish glabrescens, leaves plain, tepals reddish white, fruit red glabrous. .... *B. lepida*

***Begonia lepida* Blume (Figure 1)**

*Begonia lepida* Blume, Enum. Pl. Javae. 1 (1827) 98; Koorders, Exkurs. Fl. Java 2: 650. 1912; A.D. Candolle, Prodr., 15(1): 321. 1864. Synonym: *Diploclinium lepidum* (Blume) Miquel, Fl. Ned. Ind. 1(1): 686. 1856. Type: Blume s. n. Java (Lectotype BO, here designated)

Stem green to reddish green, woody, densely bristly, rather harsh hairs, reddish brown, nodes thickened, erect, unbranched, forming clumps, 15–25 cm tall, 0.3–0.6 cm thick; without a tuber. Stipules green to reddish green, oblanceolate, 0.8 x 1.5–1.8 cm, margin toothed with hairs, setose, persistent. Leaves distant, held almost horizontally; petiole green to reddish green, densely bristly, 0.5–4 cm long; lamina not oblique, plain

Table 1. Diagnostic characters differentiating *B. lepida* and *B. bracteata*

Character	<i>B. lepida</i>	<i>B. bracteata</i>
Leaf margin	entire to sparsely serrulate	distinctly biserrate
Stipules	caducous	persistent
Female flowers tepals	entire	serrulate
Style & stigmas	U shape	Y shape
Male tepals	plain	stripe
Stament	1.2–2.1 mm length	c. 0.9 mm length
Fruit in outline	obconical	broadly ovoid
Fruit shape	oblong	ellipsoid
Wing shape	obovoid with almost truncate at the apex	broadly ellipsoid
Seed	broadly ovoid, 0.25–0.3 x 0.2–0.25 mm	ellipsoid, 0.3–0.4 x 0.2–0.25 mm
Collar cell	a quarter of length	a half of length

dull dark green above and pale green beneath, above with scattered hooked reddish bristly hairs between veins, thin in life, papery when dried, narrowly obovate, slightly asymmetric, 5–11 x 2.5–7 cm, broad side 1.5–4 cm, base narrowed, margin toothed and hairy, apex acuminate, venation pinnate with 10–12 pairs of veins, branching close to margin, veins deeply impressed above, beneath prominent. Inflorescences terminal, lax cyme, peduncle shorter than 10 cm long, clustered with one female flower and two male flowers, densely hairy, protogynous. Bracts greenish, oblanceolate, margin toothed, hairs, persistent c. 0.5–0.8 cm. Male flowers with reddish pedicel c. 0.5–0.6 cm long; tepals 4, glabrous, outer two pink or reddish, oval, 1.1 x 0.8 cm, tip rounded, inner two narrowly oval, 1 x 0.25 cm, tip slightly pointed; stamens many, cluster globose, 0.3 cm across, oblong, c. 4 mm long, filament pale yellow 1 mm long, anther 3 mm long, tip notched, opening by slits. Female flowers with red pedicel 0.6 cm long; ovary red, oblong c. 0.5–1 cm long, glabrous, wings 3, subequal, locules 3, placentas 2 per locule; tepals 5, red to reddish white in the middle, rounded, broadly ovate, margin entire, tip rounded, 1.1 x 0.5 cm; styles 3, styles and stigma yellow, Y-shaped, persistent, 0.5 cm. Fruit with pedicel 1–1.3 cm long; capsule broadly oblong, 0.5–0.8 x 1.3–1.5 cm; locules 3, wings 3, equal, oblong, tip rounded, thinly fibrous. Seed barrel-shaped, 0.3–0.4 mm, collar cell a quarter of the seed length.

Distribution. West Java

Habitat. Humid forest and on river banks at 500–1500 m altitude.

Specimens examined. JAVA: Bojongmanik Koorders 41697 $\beta$  (BO), Buitenzorg Halliersn (BO), Cadas Malang RC Bakhuizen v/d Brink

1380 (BO), Cadas Malang Winkel 84 $\beta$  (BO), Cadas Malang, Cidadap, Cibeber WF Winkel 1173 $\beta$  (BO), Cadas Malang, Cidadap, Cibeber WF Winkel 14 $\beta$  (BO), Cadas Malang, Cidadap, Cibeber WF Winkel 84 $\beta$  (BO), Cibeber Backer 22761 (BO), Cibuntu by Kalapa Nunggal, Buitenzorg CA Backer 5839 (BO), Cidadap By Cibeber RC Bakhuizen v/d Brink 1421 (BO), Cidadap, Cibeber WF Winkel 14 $\beta$  (BO), Cieseh, Megamendung V Steenis 2235 (BO), Cikaniki Hoover et al 30727 (BO), Cikaniki Hoover et al 31307 (BO), Cikaniki Hoover et al 32198 (BO), Cikaniki Hoover et al. 32155 (BO), Cikaniki Hoover et al. WSH 22120 (BO), Cikaroem, Cibeber Dr. van Leuweun 2388 (BO), Cimonte by Cidadap, Cibeber Backer 23051 (BO), Cisaroea Scheffer 6098 (BO), G. Bodas, Halimun National Park Hoover et al 1005 (BO), G. Bodas, Halimun National Park Hoover et al. 22142 (BO), G. Butik Biligir, Puncak, Bogor CA Backer 6175 (BO), G. Ciputih Backhuizen 7177 (BO), G. Cisodong Bj Leuwiliang CA Backer 26397 (BO), G. Gede Complex CA Backer 15031 (BO), G. Gede Kramer 124 (BO), G. Gede L.v.d. Pijl 113 (BO), G. Halimun Hoover et al 999 (BO), G. Hanyawang, Puncak, Bogor CA Backer 6062 (BO), G. Karang boven Pandeglang Backer 7371 (BO), G. Karang by Galusur Koorders 41625 (BO), G. Karang Gantungan Backer 6288 (BO), G. Karang, Distr. Tjimanoeck, afd. Pandeglang. Res. Bantam Koorders 40096 $\beta$  (BO), G. Kendeng By Nirmala CA Backer 10975 (BO), G. Kendeng Hoover et al 32866 (BO), G. Kendeng Hoover et al. HW 32774 (BO), G. Kendeng Hoover et al. WSH 904 (BO), G. Liang v Steenis 2386 (BO), G. Maneuh By Jasinga CA Backer 23439 (BO), G. Pancar RC Bakhuizen v/d Brink 6096 (BO), G. Pangerango v.

Schiffner (BO), G. Paniis by Jasinga CA Backer 10429 (BO), G. Paniis By Jasinga CA Backer 9948 (BO), G. Paniisan RC Bakhuizen v/d Brink 1691 (BO), G. Salak above Pasir Pogor CA Backer 9179 (BO), G. Salak Hoover et al. WSH 904 (BO), G. Salak Junghuhn 6070 (BO), G. Salak Noerkas s.n (BO), G. Seseapan Scheffer 6102 (BO), G. Sunarari, Puncak, Bogor CA Backer 6334 (BO), Jasinga de Voogd sn (BO), Java Blume 455 (BO), Java Forbers 223 (BO), Java Forbes 548 (BO), Java Hoover et al. 913 (BO), Java LR Lanjouw 172 (BO), Java LR Lanjouw 197 (BO), Java LR Lanjouw 173 (BO), Kalapa Nunggal Backer 23366 (BO), Megamendung Lam 1727 (BO), Nanggung v. Steenis 17406 (BO), Pasir Karet above Gadog by Bogor CA Backer 32972 (BO), Puncak and Talaga Warna Hallier sn (BO), Puncak, Bogor CA Backer 6288 (BO), Rawa Tjangkuang Scheffer 6096 (BO), Rsearch Station Halimun National Park Hoover et al SH 919 (BO), Situ Gunung bove Sukabumi van Steenis 1610 (BO), Situ Gunung bove Sukabumi van Steenis 1644 (BO), Takoka Koorders 14978 $\beta$  (BO), Talaga Warna Hallier s.n. (BO),

Notes. According to Smith et al. (1986) based on the original description, the leaf base of Sumatran plants of *B. bracteata* is different from that of *B. lepida*. Later, Candolle (1864) described a new variety, var. *gedeana* of *B. bracteata* from Java. He did not include any characters in his description that would distinguish his variety from *B. lepida*. *B. lepida* is unusual and distinctive in its large bracts - a character of this small section with only three species: *B. bracteata*, *B. lepida* and *B. aberrans* Irmscher (the latter two from Sumatra). The type of *B. bracteata* has not been located (Smith et al. 1986), nor have I been able find the type of *B. bracteata* var *gedeana*. However, Sumatran specimens of *B. bracteata* are clearly different from *B. lepida* in having a different leaf base. Later accounts by Koorders (1912), Backer & Bakhuizen (1963) and van Steenis (1986) all described plants of *B. lepida* as *B. bracteata*. The watercolor painting in van Steenis (1986) clearly shows it belongs to *B. lepida*.

### *Begonia bracteata* Jack (Figure 2)

Pl. Jungh. 417 ('1855', 1857); Candolle, Prodr. 15 (1): 316. 1864; Golding, Phytologia 54(7): 494. 1984. *Diploclinium bracteatum* (Jack) Miq., Fl. Ned. Ind. 1(1): 688. 1856. Tipe: Sumatra, Bengkulu Province, Gunung Bungbuk, 3°35'3"S 102°25'24"E, 610m, 15 Aug 2010, D. Girmansyah & M. Hughes Deden 1495 (neotype here designated

BO; isoneotypes ANDA, E, K, SING).

Stem green to brownish green, woody, very villous, shaggy, nodes thickened, suberect, branching, forming clumps, 12–35 cm tall, 0.2–0.3 cm thick in dry condition; without a tuber. Stipules pale green, translucent, narrowly triangular, 0.5–1.5 × 0.3–0.5 cm, margin entire cover with long hairs, pilose, persistent. Leaves distant, held almost horizontally, alternate; petiole green to brownish green, cover with long hairs, 0.5–2 cm long; lamina rather oblique, dark green above and pale green beneath, above with scattered bristly hairs, thin in life, papery when dried, oval to narrowly ovate, asymmetric, 9–12 × 3–5.5 cm, broad side 1.5–3.5 cm, base narrowed at the other side, margin biserrate with long hairs, apex acuminate, venation pinnate with 6–7 pairs of veins, branching close to margin, veins deeply impressed above, beneath prominent. Inflorescences opposite with leaves, generally supported by a smaller leaf, racemose, peduncle 2–5 cm long, covered by many bract, clustered with one female flower and more than 2 male flowers, densely hairy, protogynous. Bracts greenish, ellipticus, margin with long hairs, entire, persistent c. 0.9 × 0.5 cm; bracteole a pairs under the flower, triangular, hairy, 0.5–0.3 cm. Male flowers with white pedicel c. 0.7–1 cm long; tepals 4, glabrous, outer two white, oval, 1.4 × 1 cm, tip rounded, inner two oblong, 1 × 0.4 cm, tip slightly pointed; stamens many, cluster globose, 0.3 cm across, narrowly oblong, 0.4–0.5 mm long, filament pale yellow 2 mm long, anther 0.2–0.3 mm long, tip rounded, opening by slits. Female flowers with white pedicel 0.7–1 cm long; ovary green, elliptic, 0.5–1.5 × 0.5–0.9 cm long, sparsely hairs, wings 3, equal, locules 3, placentas 2 per locule; tepals 5, white, oblong to broadly obovate, margin entire, tip rounded, 0.9–1 × 0.3–0.4 cm; styles 3, styles and stigma yellow, Y-shaped, persistent, 0.5 cm. Fruit with pedicel 0.7–1 cm long; capsule broadly oblong, 1 × 1.2–1.9 cm; locules 3, wings 3, equal, oblong, tip rounded, thinly fibrous. Seed barrel-shaped, 0.2–0.3 mm, collar cell more than a half of the seed length.

Distribution. West Java and South Sumatra

Habitat. Humid; umbrageous forested slopes of mountains at 1500–1700 m alt.; next to streams.

Specimens examined. Sumatra, Bengkulu Province, Gunung Bungbuk

Notes. This species has been considered a synonym of *B. lepida* Blume from Java (Koorders 1912; Backer & Bakhuizen 1963; Steenis 1972), but is a much hairier plant; Jack's description as

‘shaggy’; it differs in having much longer, erect, translucent hairs on the stem (not reddish appressed hairs), hairier stipules, noticeably bullate leaves and also lacks any red colouration on the stems, leaves and young tepals. which differs in having appressed, matted, red hairs rather than erect, translucent hairs on the stem; differences between this taxon.

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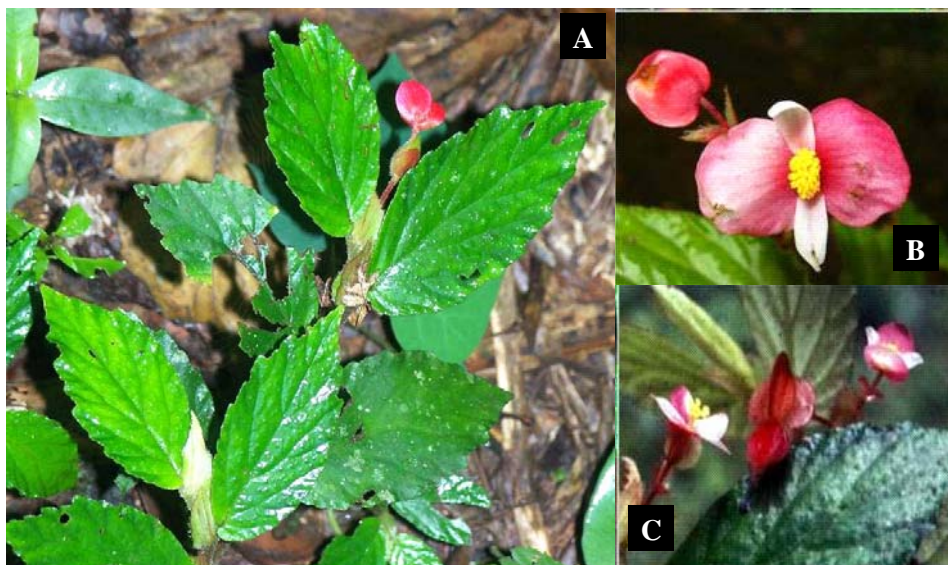


Figure 1. *B. lepida* Blume A. habit; B. male flower; C. female and fruit (Fotograph. Deden Girmansyah)

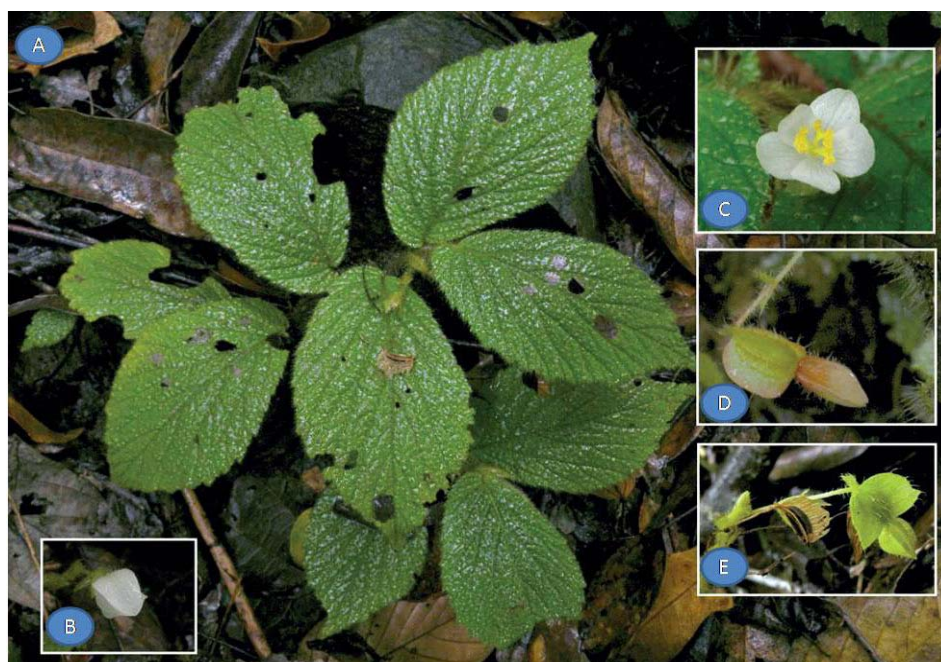


Figure 2. *B. bracteata* Jack. A. habit. B. male flower; C. female; D. ovary; E. fruits (Fotograph M. Hughes)

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