

Begonia bataiensis Kiew, a New Species in Section *Leprosae* (Begoniaceae) from Vietnam

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Abstract

Begonia bataiensis Kiew with long, cylindric, fleshy fruits is the fourth species to be described in the largely Chinese section *Leprosae*.

Introduction

The great majority of *Begonia* species have dry capsular fruits that are conspicuously winged and that dehisce to release the seeds. The only Asian sections with berries (fleshy fruits that do not dehisce) are sect. *Sphenanthera* and sect. *Leprosae*, which differ primarily in fruit shape - turbinate in sect. *Sphenanthera* and narrowly cylindric in sect. *Leprosae*. This new species, *Begonia bataiensis* Kiew, with its cylindric, fleshy, indehiscent fruit therefore falls within sect. *Leprosae*.

Begonia sect. *Leprosae* accommodates, besides this new species, three others, *B. leprosa* Hance, *B. longicarpa* K.Y.Guan & D.K.Tian and *B. cylindrica* D.R.Liang & X.X.Chen (Shui *et al.*, 2002). Apart from *B. longicarpa*, which has been collected from the Lao Cai Province, in the extreme north of Vietnam, just across the border from China, the other two are confined to southern China (Shui *et al.*, 2002). This new species therefore extends the distribution of this section much further south to Kien Giang Province in southwest Vietnam.

While sharing the character of the fleshy, narrowly cylindric fruit, it is quite unlike the other three species in habit - the other three attain a

much larger size and are plants with rhizomes, leaves with a ferruginous indumentum and dichasial inflorescences that are shorter than the leaves as compared with *B. bataiensis*, which is stemless, has a basal tuber that produces just one or two or up to five small leaves with scattered translucent hairs, and racemose inflorescences longer than the leaves (Plate 1A). In addition, its fruit is not clavate as are those of *B. leprosa* and *B. longicarpa*, but instead are narrowly tapered distally.

It is probable that this section is artificial and that this fruit type has evolved more than once. Indeed, in its habit (stemless with a tuber), its almost symmetric leaves and its racemose inflorescence, this new species more closely resembles species in sect. *Diploclinium* III of Doorenbos *et al.* (1998) than other species in sect. *Leprosae*.

***Begonia bataiensis* Kiew, sp. nov.**

Differt a *Begonia leprosa* tuberiformis (nec rhizomatis), foliis 5–6 cm longis (nec (4–)7.5–15 cm longis) et inflorescentia racemosa (nec dichasia).

Typus: Vietnam, Ba Tai Hill, Kien Giang Province. *J.J. Vermeulen 2586* (spirit collection 2610) October 2004 (holo HCMC, iso HN, SING).

Tuberous begonia without a stem. **Tuber** turbinate, mature ones smooth, brown and glabrous, *c.* 10 x 12 mm; young ones white, ellipsoid, *c.* 6 x 12 mm, shoot apex covered in many erect, fleshy stipules, narrowly triangular 3–4 x 1 mm. **Leaves** 1 or 2 or up to 5 per tuber. Petiole pale red, glabrous, 1.5–3.5 mm long, terete. Lamina not oblique, held horizontally; upper surface plain dark green or pale green and flecked by the many raised white hair bases, darker around the margin with white teeth and with a red patch at the base above the junction with the petiole (Plate 1B), the lower surface paler and scintillating or the upper surface brownish red and the lower surface pale rosy purple, in life thin and slightly fleshy, hairs erect on a raised hair base, translucent, uniseriate, *c.* 0.25 mm long, glabrous beneath, ovate, symmetric except that the basal lobes are sometimes unequal, 4.5–6 x 5–6.5 cm, base deeply cordate, basal lobes equal or unequal, not overlapping, 0.5–2 cm long, margin doubly crenate, each tooth tipped by a hair *c.* 0.5 mm long, apex acute to acuminate; venation basically palmate with 1–2 pairs of veins at the base and *c.* 2–3 pairs of fine veins along the midrib, and 1–2 veins in the basal lobes, veins branching *c.* half-way to the margin, slightly impressed above, slightly prominent beneath, glabrous on both surfaces.

Inflorescences axillary, reddish purple, glabrous, erect and longer than the leaves; racemes 6–12 cm long with peduncles 5.5–9 cm long, cymules spaced 1–1.5 cm apart, lower two cymules comprising one male and one female



Plate 1. *Begonia bataiensis* Kiew. A. Plants in nature with male flower and fleshy cylindric purple fruits, B. Protandrous raceme with the first male flower open, C. Female flower. *J.J. Vermeulen*

flower or a short branch *c.* 2 mm long with three flowers (one female and two male flowers), upper cymules with male flowers only, protandrous. Bract pair broadly ovate, recurved, *c.* 2.5 x 2 mm; bracteoles ovate, *c.* 4 x 1 mm or linear, *c.* 1 mm long. **Male flowers** with pale reddish purple pedicels up to 10 mm long; tepals 4, in bud greenish white and minutely hairy outside, at anthesis glabrous and pure white, margin entire, apex rounded to slightly acute, outer two broadly ovate to circular, 5–6 x 5.5–7 mm, inner two elliptic to slightly obovate, 4.5–5 x 1.75–2.5 mm; stamens *c.* 30–40, cluster hemispherical 2.5–3 mm diam., joined at base for *c.* 0.5 mm, filament 0.5–1 mm, anther pale yellow, obovoid, *c.* 1 mm long, apex emarginate, opening by lateral slits. **Female flowers** with reddish purple pedicel 1.5–2 mm long; ovary deep reddish purple, narrowly cylindric, 7–16 x 1.5 mm, glabrous, locules 3, placentas fleshy and bifid; tepals (4 or) 5, pure white, margin entire, glabrous, apex rounded or slightly acute, outer two broadly ovate to circular, 4–8 x 3–5 mm, inner (two or) three narrowly obovate, 3.5–7 x 1.75–4 mm; styles and stigmas yellow, 2–3.5 mm long, styles 3, almost free to the base, bifid and webbed, stigmas horizontal and sigma-shaped. **Fruit** a fleshy pendent berry, pedicel 1.5–2 mm, stout; berry slender, smooth and cylindric, tapered at both ends, 25–30 x 2–2.5 mm, glabrous, without wings or ribs, indehiscent. **Seeds** truncate, brown and sculptured, *c.* 0.3 mm long, collar cells *c.* half the seed length.

Distribution: Endemic to Ba Tai Hill and Bai Voi (Mo So) Hill, 3 km NNW of Hon Chong, Kien Giang Province, SW Vietnam.

Habitat: Rooting in soil pockets in clefts in limestone rock, well shaded, at *c.* 50 m altitude.

Specimens examined: Ba Tai Hill *J.J. Vermeulen 2587* (spirit collection 2611) (SING); Bai Voi (Mo So) Hill *Truong Quang Tam MS 056* (HCMC).

Notes: This species was discovered by the first author in October 2000 on the Ba Tai and Bai Voi Hills. It takes its name from Ba Tai Hill. Both are limestone karst hills and Bai Voi Hill is scheduled for quarrying with about two thirds of the hill to be exploited for cement production. *Begonia bataiensis* is therefore highly endangered, because its narrow distribution and small population size make it vulnerable to extinction.

The racemose inflorescence produces female flowers only in the two lowermost cymules. In these cymules, the male flowers open first and have fallen before the female flower opens. Thereafter, a series of cymules is produced that are comprised of only male flowers.

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References

- Doorenbos, J., M.S.M. Sosef and J.J.F.E. de Wilde. 1998. The sections of *Begonia* including descriptions, keys and species lists. *Wageningen Agricultural University Papers*. **98-2**: 1–266.
- Shui, Y.M., C.L- Peng and C.Y. Wu. 2002. Synopsis of the Chinese species of *Begonia* (Begoniaceae), with a reappraisal of sectional delimitation. *Botanical Bulletin of Academia Sinica*. **43**: 313–327.