

Begonia hongkongensis (Begoniaceae), a new species from Hong Kong

Fu-Wu Xing^{1*}, Fa-Guo Wang¹, Hong-Feng Chen¹ & Lawrence K. C. Chau²

¹ South China Institute of Botany, South China Botanical Garden, The Chinese Academy of Sciences, 510650 Guangzhou, China (*e-mail: xinfw@scib.ac.cn)

² Kadoorie Farm and Botanic Garden, Hong Kong

Received 31 May 2004, revised version received 3 Sep. 2004, accepted 4 Jan. 2005

Xing, F.-W., Wang, F.-G., Chen, H.-F. & Chau, L. K. C. 2005: *Begonia hongkongensis* (Begoniaceae), a new species from Hong Kong. — *Ann. Bot. Fennici* 42: 151–154.

Begonia hongkongensis F.W. Xing *sp. nova* (Begoniaceae) is described and illustrated. It is most similar to *B. tsoongii*, but differs primarily in its horizontal rhizome, bigger leaves with long-attenuate apices and irregularly shallowly 1–4-lobed margins, styles with only basal parts connected, and capsules with a longer pedicel and wings. It is known only from Jiuqing Mountain in Hong Kong.

Key words: *Begonia*, Begoniaceae, new species, taxonomy

Begonia is the largest genus of Begoniaceae and includes about 1400 species widely distributed in tropical and subtropical areas, especially in central and southern America (Barkley *et al.* 1974, Smith *et al.* 1986, Doorenbos *et al.* 1998, Ku 1999). There are about 150 species native to China, with the area stretching from SE Yunnan to SW Guangxi having the highest diversity of species (Ku 1999, Shui 2002, Shui *et al.* 2002, Tebbitt *et al.* 2002, Tian *et al.* 2002).

The Hong Kong Special Administrative Region of the People's Republic of China has a total land area of 1095 km² and is situated on the country's southeast coast, adjacent to Guangdong Province. Although urban development in Hong Kong was very rapid in the past decades, some vegetation types, such as south subtropical evergreen broad-leaved forest ("fun shui" woods) are conserved well by local villagers (Xing *et al.* 1999). During our biodiversity survey of Hong Kong, we collected a peculiar specimen of *Begonia*, growing in a valley of Jiuqing Mountain

(ca. 200 m alt.). Upon critical study it turned out to be a species new to science. With the addition of this species the flora of Hong Kong contains four species of *Begonia*.

Begonia hongkongensis* F.W. Xing, *sp. nova (section *Platycentrum*) (Figs. 1 and 2)

Species affinis B. tsoongii C.Y. Wu, *sed rhizomate elongato, foliis basalibus 7–13.6 cm longis, 2.3–4.5 cm latis, apex longi-attenuatis 2.3–3.3 cm longis, margine irregulariter leviter 1–4-lobatis, foliis caulinis presentibus, inflorescentiis axillaribus, pedicellis capsularum longioribus, stylis 2, non nisi prope basin connatis, alis majoribus et longioribus differt.*

TYPE: China. Hong Kong, Tunmen, Jiuqing Mountain, alt. 150–350 m, in the ravine, on moist rocks, 11.XII.1997 Xing *et al.* 9972 (holotype IBSC; isotype, two sheets, IBSC). — PARATYPE: China. Hong Kong, Kadoorie Farm and Botanic Garden, introduced from Hong Kong, Shenjin, Dalan Coun-

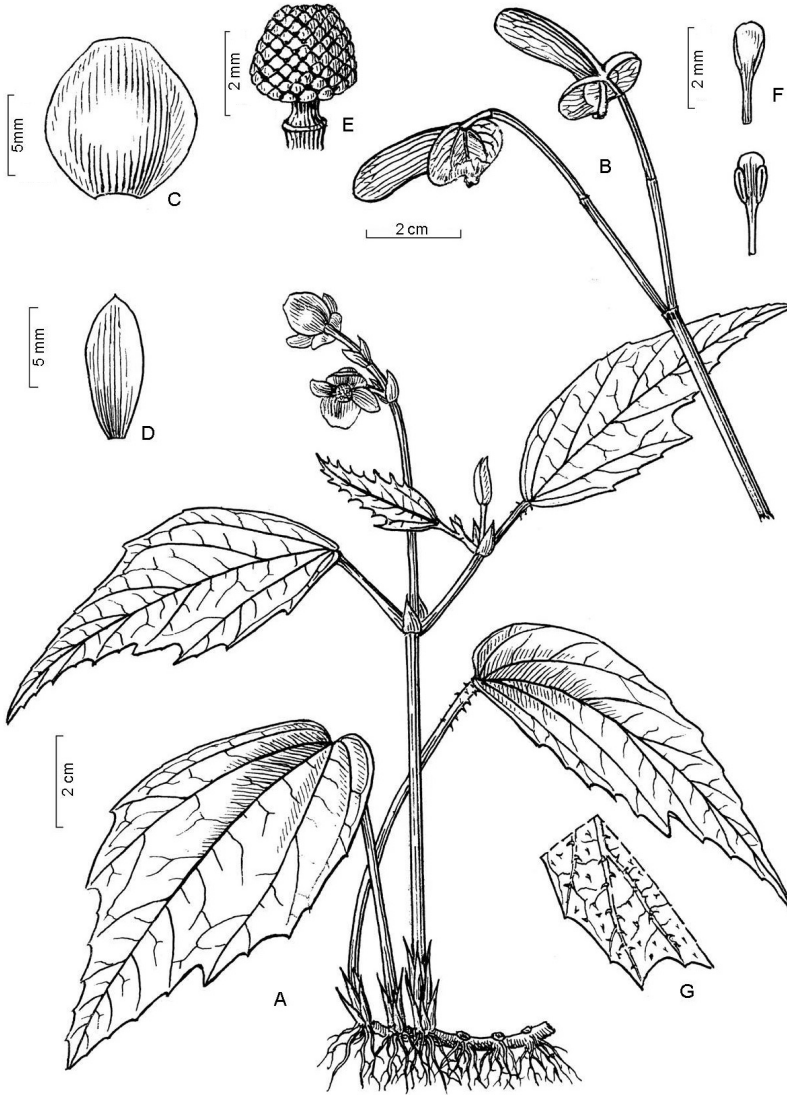


Fig. 1. *Begonia hongkongensis* (from holotype, drawn by Yu Hanping). — **A:** Habit. — **B:** Part of infructescence. — **C:** Exterior perianth segment. — **D:** Interior perianth segment. — **E:** Androecium. — **F:** Stamens. — **G:** Abaxial surface of leaf.

try park, alt. ca. 150 m, 20.VIII.2004 Xing et al. 15248 (IBSC).

Rhizomatous perennial herbs; rhizome horizontal, 1–4.3 cm long, ca. 3 mm in diameter, rooting at nodes covered with brown, membranous, persistent stipules; stem 10.3–21 cm long, sulcate. Basal leaves 5–6, oblong-ovate to rhombic-ovate, slightly asymmetric, 7–13.6 × 2.3–4.5 cm, apex long-attenuate 2.3–3.3 cm long, base cuneate to broad-cuneate, slightly oblique, margin irregularly and remotely serrate and shallowly 1–4-lobed, adaxial surface glabrous, with sparse, brown, short hairs along

the veins; veins 5–6 palmate, prominent on both surfaces, secondary veins clearly visible; petiole 5.2–9.4 cm, with sparse, remote, short hairs near apex; stipule persistent, membranous, lanceolate, 1–2 cm long, 2–2.5 mm wide; cauline leaves 2–3, similar to basal leaves in outline, 4.5–9 × 1.7–5.3 cm; petiole 2.8–8.2 cm long, stipule membranous, lanceolate, ca. 8.5 × 3 mm, apex aristate, ca. 2 mm long, glabrous. Inflorescence a dichotomous cyme, axillary, unisexual; bract membranous, long-ovate, ca. 7 mm long, glabrous. Peduncle ca. 5 cm long at fruiting, striate and glabrous; staminate flowers 2–4, pedicel 7–14 mm long, perianth segments 4,

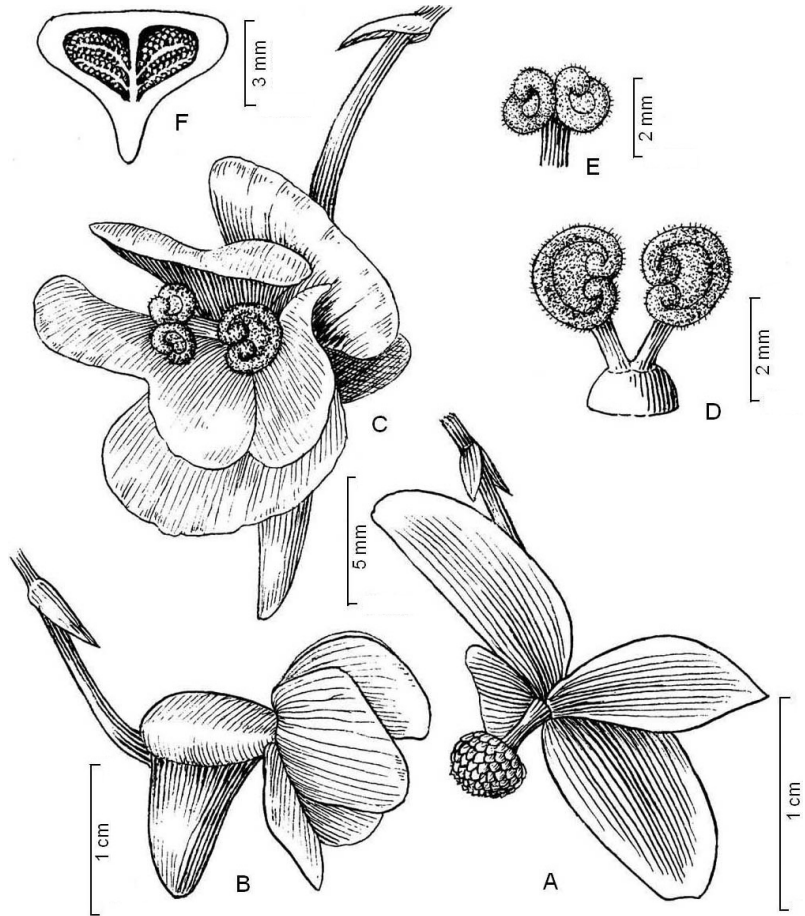


Fig. 2. *Begonia hongkongensis* (from paratype, drawn by Yu Hanping). — **A:** Staminate flowers. — **B:** Pistillate flowers, lateral view. — **C:** Pistillate flowers, face view. — **D:** Style. — **E:** Style, lateral view. — **F:** Cross section of ovary.

white, exterior 2 larger, broadly ovate or oblong, ca. 10×9 mm, apex rounded, base shallowly cordate, interior 2 smaller, ovate, ca. 8×4 mm, apex acute; stamens numerous; filaments free, 1.1–1.4 mm long, attached to a torus, anthers oblong or obovate, 1–1.3 mm long; carpellate flowers: pedicel pinkish white, 2–2.5 cm long, tepals 5, white, $0.7\text{--}1.2 \times 0.6\text{--}1.2$ cm, apex rounded or repand, with a little pinkish spot; ovary ovate, 2-locular, styles 2, ca. 3 mm long, yellow, only basal part connate, stigma spirally twisted like a corkscrew. Infructescence often 2–4-fruited; peduncle 10.2–16 cm long, striate and glabrous; capsules nodding, 2-locular, oblong in outline, 18–29 mm long, ca. 17 mm in diameter, subglabrate, wings 3, unequal, the larger one long-ligulate, 16–28 mm long, base 8.5 mm wide, apex obtuse, 6 mm wide with clear striae, glabrous, the remaining 2 subequal, 7–10 mm long, pedicels 3–5.8 cm long. Seeds

numerous, oblong, light-brown. Flowering from July to September; fruiting from October to December.

ECOLOGY AND DISTRIBUTION. Grows on moist rocks by stream in evergreen secondary forests on granite mountains at 150–350 m above sea level. It is associated with *Clerodendrum cytophyllum*, *Blechnum orientale*, *Litsea rotundifolia*, *Scutellaria formosana*, *Commelina paludosa*, *Arundinaria cantori*, *Caesalpinia crista*, *Pterolobium punctatum*, *Diospyros vaccinioides*, *Colysis elliptica*, etc. Known only from the type locality in Hong Kong.

Begonia hongkongensis resembles *B. tsoongii* (Wu & Ku 1995) from Guangxi Province in having oblong-ovate to rhombic-ovate leaves that are asymmetric, numerous stamens, and oblong capsule. A morphological comparison of *B. hongkongensis* and *B. tsoongii* is given in Table 1.

Table 1. Morphological differences between *Begonia hongkongensis* and *B. tsoongii*.

Diagnostic characters	<i>B. hongkongensis</i>	<i>B. tsoongii</i>
Rhizome	horizontal	erect
Basal leaves	7–13.6 cm long, 2.3–4.5 cm wide, apex long-caudate 2.3–3.3 cm long, margin irregular, remotely serrate and shallowly 1–4-cleft	6–6.5 cm long, 1.9–3 cm wide, apex acuminate or caudately acuminate, margin argute, remotely and shallowly serrate
Cauline leaves	present, 4.5–9 cm long, 1.7–5.3 cm wide	absent
Staminate flowers	pedicel 7–14 mm long, perianth segments 4, exterior 2 larger, ca. 10 mm long, 9 mm wide, apex suborbicular	pedicel 4–12 mm long, perianth segments 4, exterior 2 larger, ca. 8 mm long, 6 mm wide, apex orbicular
Carpellate flowers	tepals 5; styles ca. 3 mm long, only basal part connected	tepals 4–5(?); styles ca. 2 mm long, mostly connected
Capsule	larger wing 16–28 mm long, base 8.5 mm wide, other two narrower, 7–10 mm long; pedicel 3–5.8 cm long	larger wing ca. 13 mm long, base ca. 10 mm wide, other two narrower, 2–3 mm long; pedicel ca. 1.6 cm long

Acknowledgements

We thank Ms. Gloria Siu of Kadoorie Farm for her help during the fieldwork and discovery of the second population; Mr. Kity for cultivating the species in the greenhouse in Kadoorie Farm and Botanic Garden, and Mr. Yu Hanping for preparation of the illustration. This work was partly supported by the National Natural Science Foundation of China (30270122) and Kadoorie Farm & Botanic Garden (20041128).

References

- Barkley, F. A. & Golding, J. 1974: *The species of the Begoniaceae*, 2nd ed. — Northeastern Univ., Boston.
- Doorenbos, J., Sosef, M. S. M. & de Wilde, J. J. F. E. 1998: The sections of *Begonia* including descriptions, keys and species lists (Studies in Begoniaceae VI). — *Wagenin-gen Agric. Univ. Pap.* 2: 1–266.
- Ku, T. C. 1999: Begoniaceae. — In: Ku, T. C. (ed.), *Flora Reipublicae Popularis Sinicae* 52(1): 126–269. Sci. Press, Beijing.
- Shui, Y. M. 2002: A new species of *Begonia* (Begoniaceae) from Mt. Huanglianshan of SE Yunnan, China. — *Acta Bot. Yunnanica* 24: 307–308.
- Shui, Y. M., Peng, C. I. & Wu, C. Y. 2002: Synopsis of the Chinese species of *Begonia* (Begoniaceae), with a reappraisal of sectional delimitation. — *Bot. Bull. Acad. Sin.* 43: 313–327.
- Smith, L. B., Wasshausen, D. C., Golding, J. & Karegeannes, C. E. 1986: Begoniaceae. Part 1: Illustrated key; Part 2: Annotated species list. — *Smithson. Contr. Bot.* 60: 1–584.
- Tebbitt, M. C. & Guan, K. Y. 2002: Emended circumscription of *Begonia silletensis* (Begoniaceae) and description of a new subspecies from Yunnan, China. — *Novon* 12: 133–136.
- Tian, D. K., Guan, K. Y., Zhou, Q. X. & Gu, Z. J. 2002: Chromosome numbers of eight taxa of *Begonia* from Yunnan. — *Acta Bot. Yunnanica* 24: 245–249.
- Wu, C. Y. & Ku, T. C. 1995: New taxa of the *Begonia* L. (Begoniaceae) from China. — *Acta Phytotax. Sin.* 33: 251–280.
- Xing, F. W., Richard, T. C. & Chau, K. C. 1999: Study on the flora of Hong Kong. — *J. Trop. Subtrop. Bot.* 7: 295–307.