**Begonia coptidifolia** (Begoniaceae), a new species from China

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**Abstract.** *Begonia coptidifolia* H. G. Ye, F. G. Wang, Y. S. Ye & C.-I Peng, a new species from Guangdong province, China, is here described and illustrated. Its chromosome number (2n=22) and karyotype are reported. *Begonia coptidifolia* belongs to sect. *Platycentrum* and somewhat resembles *B. hemsleyana* Hook. f., from which it differs by the aerial stems seen only at anthesis (vs. all year round), palmately dissected leaves with pinnately parted lobules (vs. leaves palmately compound with 7-9 peltiulate leaflets) and peioteae grooved on adaxial surface (vs. terete). The new species also resembles *Begonia pedatifida* H. Lév., which, however, has much stouter rhizomes (2-6 cm vs. 0.3-0.5 cm thick), leaves palmatifid with triangular lobules, and terete petioles. *Begonia coptidifolia* is rare, known only from a small ravine in Ehuangzhang Nature Reserve, Yangchun, Guangdong Province.

**Key words:** Begoniaceae; *Begonia coptidifolia*; *Begonia hemsleyana*; *Begonia pedatifida*; China; chromosome number; Ehuangzhang Natural Reserve; Guangdong; karyotype; new species; rare species.

**Introduction**

*Begonia* L. is a large genus of about 1,400 species widely distributed in tropical and subtropical areas, especially in Central and South America (Smith et al., 1986; Doorenbos et al, 1998). About 150 species of *Begonia* are indigenous to China, mainly south of the Yangtze River. The distribution center of Chinese *Begonia* is from southeastern Yunnan to southwestern Guangxi (Ku, 1999; Shui et al., 2002; Tian et al., 2002). Shui et al. (2002) in a synopsis of Chinese *Begonia*, divided the Chinese species into nine sections.

Sect. *Platycentrum* (Klotzsch) A. DC. consists of about 110 species that range from India through central China to southeastern Asia. In China, 63 species have been reported from south of the Yangtze River, from SE Xizang to Taiwan (Shui et al., 2002).

The Ehuangzhang Natural Reserve lies in Yangchun city, southeastern Guangdong, China. It occupies an area of about 15,000 ha, between 21°50’36’’ and 21°58’40’’N and 111°21’29’’ and 111°36’03’’E, and ranges from 50 to 1337.6 m in elevation. It is covered by natural forest and is an important area for biodiversity conservation. Its chromosome number (2n=22) and karyotype are reported. *Begonia coptidifolia* belongs to sect. *Platycentrum* and somewhat resembles *B. hemsleyana* Hook. f., from which it differs by the aerial stems seen only at anthesis (vs. all year round), palmately dissected leaves with pinnately parted lobules (vs. leaves palmately compound with 7-9 peltiulate leaflets) and peioteae grooved on adaxial surface (vs. terete). The new species also resembles *Begonia pedatifida* H. Lév., which, however, has much stouter rhizomes (2-6 cm vs. 0.3-0.5 cm thick), leaves palmatifid with triangular lobules, and terete petioles. *Begonia coptidifolia* is rare, known only from a small ravine in Ehuangzhang Nature Reserve, Yangchun, Guangdong Province.

**Species Description**

*Begonia coptidifolia* H. G. Ye, F. G. Wang, Y. S. Ye & C.-I Peng, sp. nov. — TYPE: China. Guangdong: Yangchun city, Ehuangzhang Natural Reserve, Honghuatan, alt. ca. 600 m, in a ravine, on rocks at streamside, 8 Sep 2002, Hua-Gu Ye 7535 (holotype, IBSC; isotypes, HAST, IBSC).

Haec species affinis *B. hemsleyana* Hook. f., sed folio paltamit trisecto, lobis pinatifidis, stipulis longi-triangulatis, bracteis angusti-trianglatis distinguitur.

Plants monoecious, rhizomatous, internodes short, indistinct, rooting at nodes. Rhizomes slender and short, unbranched, covered with stipules. Stipules brown, membranaceous, glabrous, persistent, triangular, 5-8 × 3-4 mm, margins entire, apex long cuspidate. Erect stem absent when sterile; stem at anthesis 10-15(-30) cm long, unbranched, subtended by 1-3 leaves. Basal leaves 2-5; petiole 5-13 cm, adaxial surface grooved, sparsely setulose; blade ovate to suborbicular in outline, 10-18 × 8-15 cm, palmately 3-cleft to base, sparsely setulose on upper surface and along midvein and secondary veins on lower surface; lobes ovate-lanceolate, 2.7-10.2 × 1.4-4.1 cm, often 2-cleft again to base; lobules narrowly elliptic-lanceolate, 3-9 × 1.5-3.5 cm, pinnately parted; segments oblong-lanceolate, 1.4-5.1 × 0.4-1.1 cm, apex acute, with 2-4 teeth on each side; cauline leaves smaller than basal leaves. Inflorescence axis 5-15 cm, glabrous. Inflorescence a terminal cyme, flowers 1-4; bract narrowly triangular, 10 × 3 mm, apex acute. Peduncle 3.5-4(-7) cm long at fruiting. Staminate flower: pedicel 13 mm long, white; tepals 4, in two whorls, outer two broadly ovate, ca. 12 × 13 mm, base slightly cordate, apex rounded; inner two ovate, ca. 12 × 8 mm; stamens many, filaments fused below into a column.
Figure 1. Begonia coptidifolia H. G. Ye, F. G. Wang, Y. S. Ye & C.-I Peng. A, Habit; B, Staminate flower, face view, B’, Lateral view; C, Carpellate flower; D, Style; E, Capsule; F, Cross section of fruit, G, Stipule, abaxial surface, G’, adaxial surface; H, Segment of lobule, abaxial surface, H’, adaxial surface, I, Hispidulous abaxial surface of lobule; J, Cross-section of leaf petiole. (All but B’ and G-J from Hua-Gu Ye 7535, line drawing by Yun-Xiao Liu; B’, G-J from Peng 19456, line drawing by Shin-Ming Ku)
Figure 2. *Begonia coptidifolia* H.G. Ye, F.G. Wang, Y.S. Ye & C.-I Peng. A, habit, bar = 5 cm; B (inset), staminate flower, bar = 1 cm; C, aerial stem with maturing capsules, bar = 5 cm; D (inset), capsule, bar = 1 cm. All from Peng 19456. (Photos by Ching-I Peng)
Figure 3. *Begonia hemsleyana* Hook. f. A, Habit; B, Leaflet, abaxial surface; C, Segment of leaflet, adaxial surface, C', abaxial surface; D, Stipule, abaxial surface, D', adaxial surface, D'', lateral view; E, Bract, abaxial surface, E', adaxial surface; F, Staminate flower; G, Carpellate flower; H, Capsule; I, Cross section of ovary. All from Peng 18681 (HAST) (Line drawing by Shin-Ming Ku)
Figure 4. Begonia pedatifida H. Lév. A. Leaf; B. Flowering shoot; C. Segment of leaf, adaxial surface, C’, abaxial surface; D, Staminate flower; E. Androecium; F. Stamen; G. Tepals of carpellate flower; H. Stigma, dorsal view, H’, ventral view; I, Cross section of ovary. All from Shui 9014 (HAST). (Line drawing by Ya-Wen Hsue)
Figure 5. Karyomorphology of *Begonia coptidifolia*. A, Somatic chromosomes at metaphase, $2n = 22$. B, Karyotype: chromosomes pairs arranged by decreasing order of length, dots indicating positions of centromeres. (From Peng 19456)
discernible. All other chromosomes are metacentric, basing on the classification categories of Levan et al. (1964). Chromosome arm ratios (long/short) range from 1.33 to 2.70. Chromosome pairs 9, 10 and 11 are much smaller than the rest of the complement.

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Literature Cited


中 国 秋 海 棠 科 一 新 種 - 陽 春 秋 海 棠

葉 華 谷 1 王 發 國 1 葉 育 石 1 彭 鏡 毅 2

1 中 國 科 學 院 華 南 植 物 研 究 所
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本文發表中國秋海棠科一新種，陽春秋海棠 Begonia coptidifolia。陽春秋海棠探自廣東省陽春市鵝凰嶂自然保護區，到目前為止，僅發現於鵝凰嶂海拔約 600 公尺的山谷溪溝陰濕石上，生境脆弱。
此新種與掌葉秋海棠 Begonia hemsleyana 略似，但新種葉子掌狀全裂，裂片再次全裂，其小裂片羽狀深裂；而掌葉秋海棠具掌狀複葉，小葉具柄。此新種與掌裂葉秋海棠 Begonia pedatifida 亦略似，但後者為掌狀深裂。本文對此三種植物加以比較，提供線繪圖以資辨認，並報導陽春秋海棠之染色體數目（2n=22）及核型。

關鍵詞：秋海棠科；陽春秋海棠（新擬中名）；掌葉秋海棠；掌裂葉秋海棠；中國；廣東；鵝凰嶂自然保護區；新種；稀有植物；染色體數；核型。