Begonia fulgurata (sect. Diplocinium, Begoniaceae), a new species from northern Thailand

C.-I Peng¹, C.-W. Lin², T. Phuththai³

Key words
Chiang Mai endemic new species taxonomy

Abstract Begonia fulgurata, a new species from northern Thailand, is here described and illustrated. Begonia fulgurata resembles B. integrifolia, a widespread species in Southeast Asia, in having tubers, erect stem with hairy leaves and a periodically dormant habit. However, the new species is sharply distinct in its lamina densely hirsute (vs. sparsely puberulous) and with maroon patches and silvery white veins (vs. uniformly green or with white spots); inflorescence densely clothed with glandular hairs (vs. glabrous or puberulous); staminate flowers with 2, rarely 3 (vs. 4) tepals; stamineate and pistillate tepals glandular hairy (vs. glabrous). As a deciduous species with basal tubers, together with an erect stem, ovate to broadly ovate leaves, 3-locular ovary, it may be mistaken as a dwarf plant of B. grandis, one of the most widely distributed species in China and the type species of sect. Diplocinium. However, B. fulgurata differs in its leaf upper side with fine silvery (vs. green) veins; inflorescence densely glandular hairy (vs. glabrous), staminate tepals 2 or rarely 3 (vs. 4) and pistillate tepals 5 (vs. 3), and ovary glandular hairy (vs. glabrous).

INTRODUCTION

Currently 54 species of Begonia are recognized in Thailand (Phuththai & Hughes 2016). Many are tuberous and periodically dormant during the dry season, such as some members in sect. Diplocinium, Parvituberon, Reichenheimia, Heeringia and Monophyllum. All of these species have axile placentae and many were discovered recently, e.g., Doorenbos et al. (1998), Phuththai & Sridith (2010), Phuththai et al. (2014), Phuththai & Hughes (2016). Here we report the discovery of a handsome new species, B. fulgurata, from northern Thailand with partial parietal placation, which resemble some Begonia sect. Coelocentrum, a relatively large group now of over 70 species (Chung et al. 2014, Peng et al. 2014, 2015a, b) occurring on karst limestone in southern China and northern Vietnam. Members of sect. Coelocentrum are evergreen, stemless rhizomatous, and produce axillary inflorescences and unequally winged fruits. The new species, however, does not fit in sect. Coelocentrum because of its tuberous habit, periodically dormant and erect stems and apical inflorescence and subequal wings. Its overall appearance appears to be allied to sect. Diplocinium. We provide a detailed morphological description, a line drawing and a colour plate to aid in identification of this new species.

TAXONOMIC TREATMENT

Begonia fulgurata C.-I Peng, C.W. Lin & Phuththai, sp. nov.
— Fig. 1, 2; Map 1

Type. Thailand, Chiang Mai Province, Doi Lohn (Lahn), west side, Mae Lai Village, south slope above Mae Lai Stream, Huay Gayo Subdistrict, Mae Aen District. Sterile specimen collected on 23 Oct. 2005, Peng 20548, with

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Abstract. Begonia fulgurata, a new species from northern Thailand, is here described and illustrated. Begonia fulgurata resembles B. integrifolia, a widespread species in Southeast Asia, in having tubers, erect stem with hairy leaves and a periodically dormant habit. However, the new species is sharply distinct in its lamina densely hirsute (vs. sparsely puberulous) and with maroon patches and silvery white veins (vs. uniformly green or with white spots); inflorescence densely clothed with glandular hairs (vs. glabrous or puberulous); staminate flowers with 2, rarely 3 (vs. 4) tepals; stamineate and pistillate tepals glandular hairy (vs. glabrous). As a deciduous species with basal tubers, together with an erect stem, ovate to broadly ovate leaves, 3-locular ovary, it may be mistaken as a dwarf plant of B. grandis, one of the most widely distributed species in China and the type species of sect. Diplocinium. However, B. fulgurata differs in its leaf upper side with fine silvery (vs. green) veins; inflorescence densely glandular hairy (vs. glabrous), staminate tepals 2 or rarely 3 (vs. 4) and pistillate tepals 5 (vs. 3), and ovary glandular hairy (vs. glabrous).

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Fig. 1 *Begonia fulgurata* C.-I Peng, C.W. Lin & Phutthai. a. Habit; b. stipule; c, c', c". bracts at lowermost and uppermost parts of inflorescence; d, d'. staminate flower, face and side views; e, e'. stamen, dorsal and side views; f, f'. pistillate flower, face and side views; g, g', g". style, dorsal, side and ventral views; h. capsule; i, i', i". cross section of an ovary. — Scale bars: a = 5 cm; b, c, c', d, d', f, f', h, i, i', i" = 1 cm; e, e' = 2 mm; g, g', g" = 3 mm. — Drawn by: Che-Wei Lin.
Fig. 2  *Begonia fulgurata* C.-I Peng, C.W. Lin & Phutthai.  
a–b. Habit;  
c. staminate flower;  
d. pistillate flower;  
e. sterile plants with tubers on petiole and at base;  
f. portion of leaf;  
g. inflorescence;  
h. staminate flower and immature capsule;  
i. cross section of the middle part of an ovary.  
— Scale bars:  
c–d = 5 mm;  
e = 2 cm;  
f–h = 1 cm;  
i = 3 mm.  
— Photos:  
a: Wei-Min Lin;  
b: Advance Thailand Geographic;  
c–i: Ching-I Peng.
Distribution & Ecology — *Begonia fulgurata* is endemic to Chiang Mai, northern Thailand (Map 1), at 1000–1200 m altitude, where it is known only from the type locality.


Conservation assessment — *Begonia fulgurata* is a small-endemic species known only from the type locality in northern Thailand. It is very attractive, and has been collected and entered into cultivation in and outside of Thailand. Locations of populations of the species are classified as recreation areas (IUCN protected area category VI — [Category Ib: Wilderness Area]) that receive many tourist visitors during the high season. The handsome new species may be collected or trampled upon by hiking tourists. We consider a category of vulnerable (VUD2) to be appropriate, as the populations are prone to the effects of human activities or stochastic events within a very short period of time (IUCN 2012).

Note — *Begonia fulgurata* is somewhat similar to the widespread (in SE Asia) *B. integrifolia* Dalzell (1851: 230) of sect. *Parvibegonia* in having a tuberous base, erect stem with hairy leaves and the periodically dormant habit. However, the new species is easily distinguishable by its lamina maculated with maroon patches and silvery-white veins (vs uniformly green or with white spots) and densely hirsute (sparingly puberulous); inflorescence densely glandular hairy (vs glabrous); staminate flowers with 2 or rarely 3 (vs 4) tepals, and staminate and pistillate tepals with glandular hairy (vs glabrous). The new species also bears some resemblance to *B. grandis* Dryand. (1791: 163) of sect. *Diploclinium* in its deciduous habit, erect stem and ovate to broadly ovate leaves, mainly 3-locular ovary. However, *B. fulgurata* markedly differs from *B. grandis* in the leaf upper side with fine silvery (vs green) veins; inflorescence densely glandular hairy (vs glabrous), staminate tepals 2 or rarely 3 (vs 4) and pistillate tepal 5 (vs-3), ovary glandular hairy (vs glabrous). A detailed comparison of *B. fulgurata* with *B. integrifolia* and *B. grandis* is presented in Table 1.

### Table 1 Comparison of *Begonia fulgurata* C.-I Peng & C.W. Lin and *B. grandis* and *B. integrifolia*.

<table>
<thead>
<tr>
<th>Section</th>
<th><em>B. fulgurata</em> (Fig. 1, 2)</th>
<th><em>B. grandis</em></th>
<th><em>B. integrifolia</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAF</td>
<td><em>Diploclinium</em>, tentatively</td>
<td><em>Diploclinium</em></td>
<td><em>Parvibegonia</em></td>
</tr>
<tr>
<td>maculation</td>
<td>dark patches between venation; veins finely silvery to snow white densely hirsute</td>
<td>uniformly green</td>
<td>uniformly green or with minute, white spots sparsely puberulous</td>
</tr>
<tr>
<td>abaxial vestiture</td>
<td>glandular hairy</td>
<td>glabrous</td>
<td>glabrous</td>
</tr>
<tr>
<td>Axile</td>
<td>parietal in the middle part of ovary, axile on both ends</td>
<td>axile</td>
<td>axile</td>
</tr>
</tbody>
</table>


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