Begonia obdeltata (Begoniaceae), a new species from northeast Brazil

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Abstract

Begonia obdeltata, a new species of Begoniaceae from northeast Brazil, is described and illustrated. It is similar to B. grisea and B. petasitifolia, with which it is compared. Diagnostic characters, geographic distribution and conservation status of the new species are presented.

Key words: Atlantic rain forest, conservation, taxonomy

Introduction

The family Begoniaceae consists of two genera: Begonia Linnaeus (1753: 1056), with approximately 1,500 species and pantropical distribution, and the monospecific Hillebrandia Oliver (1866: 361), from the Hawaiian Islands (Neale et al. 2006, Wilde 2011). In Brazil, 208 species of Begonia are recognized (Jacques 2013), occurring in all vegetation types except mangroves (Jacques & Mamede 2005), with the greatest diversity in the Atlantic rain forest (Jacques & Mamede 2004). Thirty-six species of Begonia are recorded in northeast Brazil and 20 are endemic to the region, with most of the diversity in the State of Bahia (Jacques 2013). They are herbs, shrubs or lianas, often characterized by fleshy stems, large stipules, usually asymmetrical leaves, unisexual flowers with petal-like perianth segments, numerous centripetal stamens, and seeds with a collar of cells below an operculum (Clement et al. 2004).

During the taxonomic treatment of Begonia for the Flora of Bahia, a new species of Begonia similar to B. grisea Candolle (1859: 138) was recognized. Field surveys and herbarium specimens revealed that its geographic distribution also includes the State of Pernambuco. This species is here described and illustrated as B. obdeltata.
**Begonia obdeltata** Gregório & E.L. Jacques, *sp. nov.* (Figs. 1–2)

* Begonia obdeltata resembles *B. grisea*, but is easily distinguished from that species by lanceolate stipules (*vs.* triangular), styles 0.5–1.2 mm long (*vs.* 2–6 mm long) and obdeltoid fruits (*vs.* globular), with equal wings (*vs.* one wing larger than the others) (Table 1).

Type:—BRAZIL. Bahia: Camacan, Reserva Particular do Patrimônio Natural (RPPN) Serra Bonita, 9.6 km NNW of Camacan, on the road to Jacareci and Jussari, then 6 km up to Serra Bonita, 15°23'29"S, 39°33'55"W, 21 September 2004 (fl, fr.), *W.W. Thomas et al. 14222* (holotype CEPEC!, isotype RB!).

**FIGURE 1.** *Begonia obdeltata*. *A.* branch with infrutescence; *B.* stipule, dorso-lateral view; *C.* staminate flower; *D.* stamen; *E.* bracteole of pistillate flower; *F.* pistillate flower; *G.* branch of style; *H.* cross section of the ovary, showing placentae; *I.* seed; *J.* capsule with persistent styles (*A, B, I, and J* from *B.S. Gregório 230*; *C–H* from *W.W. Thomas 14222*; drawn by Bernarda de Souza Gregório).
BEGONIA OBDELTATA (BEGONIACEAE), A NEW SPECIES

Perennial herbs or subshrubs, to 1.5 m tall, monoecious, pubescent, trichomes stellate, ferruginous or gray, (8)9–12-armed, 0.3–0.5 mm long, glandular trichomes minute, sparse. Stem 1–1.5 cm diam. at the base, fleshy, lenticellate, pubescent when young, glabrescent; internodes 0.3–3 cm long. Stipules lanceolate, 0.7–2.3 × 0.3–0.7 cm, carinate, appressed, deciduous, apex acuminate, margins entire. Petioles 3.3–12(–17) cm long, cylindrical; leaf-blades 4.6–8(–11) × 6.8–10(–15.5) cm, rounded to transversely elliptical, slightly asymmetric; base cordate; margins slightly wavy, jagged, hydathodes present on teeth; apex rounded; blade surfaces discolorous, adaxially green, abaxially pale green, pubescent, glandular trichomes sparse on both sides; venation actinodromous, veins 7 or 8, fleshy. Inflorescence cymose, 24–50 cm long, 70–180-flowered; peduncle vinaceous; primary bracts 2, caducous (not seen). Staminate flowers: bracteoles absent; pedicels 10–12.5 mm long; tepals 2, broadly ovate to

FIGURE 2. Begonia obdeltata from Reserva Particular do Patrimônio Natural Serra Bonita, Camacan, Bahia, Brazil. A. habit; B. fruiting plant; C. immature fruits (photos A by Bernarda de Souza Gregório and B–C by Alessandro Rapini).
 orbicular, 3–4 × 3.3–4.5 mm, white, abaxially glabrescent, apex rounded to obtuse, margins entire; stamens 14–22, filaments 0.3–1.3 mm long, anthers 0.6–1 mm long, rimoise, connective not prolonged. Pistillate flowers: bracteoles 2, oblong, 3–3.5 × 0.4–0.5 mm, carinate, caducous, opposite or subopposite, subtending the ovary, apex apiculate, margins irregularly denticulate; pedicel 6–14 mm long; ovary 4–9 mm long, trilocular, light green; placation axillary, placenta entire; tepals 5, obovate to elliptic, 2–3.2 × 0.8–2 mm (an inner tepal smaller than the others), pinkish, abaxially glabrescent, apex acute to acuminate, margins entire; styles 3, 0.5–1.2 mm long, bifid, branches twisted, stigmatic surfaces papillose, yellow. Capsules 5.5–16 × 6–13 mm (including wings), obdeltoid, three-winged, indument of trichomes and stellate microscopic glands, glabrescent, exocarp light green when young, brown when mature, dehiscent; locules oblong, 3–5 mm wide, styles persistent; wings equal, 5.5–16 × 1.5–4 mm, apex rounded to acute. Seeds ca. 0.2 mm long, oblong.


Etymology: — The epithet refers to the obdeltoid fruit.

Distribution and habitat: — Begonia obdeltata occurs in the States of Bahia and Pernambuco (Fig. 3C), in dense montane and submontane rain forests (or in open areas), 520–1,050 m a.s.l. The species is predominantly rupicolous, but can occasionally be found as an epiphyte.

![FIGURE 3. Geographical distribution of Begonia obdeltata. A. Latin America; B. Brazil; C. States of Bahia and Pernambuco.](image-url)
Conservation status:—The Atlantic rain forest has had its area reduced since the colonial period and is widely fragmented, with few relicts of primary and secondary forests in various stages of regeneration (Câmara 2003). Many areas of southern Bahia are under intense anthropogenic pressure due to cocoa plantations, subsistence crops, pastures, burning and selective logging. This is of conservation significance because nearly 180 species of Begonia are endemic to the Atlantic forest (Jacques 2013). However, amongst the six locations where Begonia obdeltata is found, five are within conservation units. In addition, the species has a relatively broad area of occurrence in the northeastern coast, from Bahia to Pernambuco State. Due to these mitigating circumstances, the species is classified as Least Concern (LC) for conservation purposes (IUCN 2001).

Notes:—The most common fruit of Begonia is a loculicidal three-winged capsule, dehiscent by cracks or pores from a usually papyry pericarp. The fruits provide important taxonomic characters for the genus, especially the morphology of the wings (Jacques 2002). The fruits of B. obdeltata promptly distinguish it from related species. The stellate trichomes are also useful in identifying the species since there are only 11 species of Begonia with this type of indument in northeast Brazil. According to the sectional classification of Doorenbos et al. (1998), B. obdeltata would belong to the sect. Pritzelia (Klotzsch 1854: 126) Candolle (1859: 137), which is the largest section of Begonia, with more than 100 species from South America. Although the section Pritzelia is characterized by entire placenta and leaves with cystoliths, some species of the section, such as B. fellereriana Irmscher (1959: 187), B. grisea, and B. ruhlandiana Irmscher (1953: 67), do not have cystoliths (Irmscher 1953), which is a characteristic also observed in B. obdeltata. Besides B. grisea (see diagnosis), B. obdeltata also resembles B. petasitifolia Brade (1971: 37) because of the leaf appearance. However, B. petasitifolia can be easily distinguished from the new species by the stems rhizomatous, habit prostrate or decumbent, stipules triangular, staminate flowers with 4 tepals, and fruits globular (Table 1).

### TABLE 1. Comparison of diagnostic morphological characters among Begonia grisea, B. obdeltata, and B. petasitifolia.

<table>
<thead>
<tr>
<th>Characters</th>
<th>B. grisea</th>
<th>B. obdeltata</th>
<th>B. petasitifolia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habit</td>
<td>Erect</td>
<td>Erect</td>
<td>Prostrate or decumbent</td>
</tr>
<tr>
<td>Stem</td>
<td>Not rhizomatous</td>
<td>Not rhizomatous</td>
<td>Rhizomatous</td>
</tr>
<tr>
<td>Stipule</td>
<td>Triangular and deciduous</td>
<td>Lanceolate and deciduous</td>
<td>Triangular and persistent</td>
</tr>
<tr>
<td>Number of tepals in staminate flower</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Style length</td>
<td>2–6 mm</td>
<td>0.5–1.2 mm</td>
<td>1.7–6 mm</td>
</tr>
<tr>
<td>Fruit</td>
<td>Globular, with one wing larger than the others</td>
<td>Obdeltoid, with equal wings</td>
<td>Globular, with one wing larger than the others</td>
</tr>
</tbody>
</table>

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