



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

Resumo

Begonia obdeltata, uma nova espécie de Begoniaceae do Nordeste do Brasil, é descrita e ilustrada. Ela assemelha-se a *B. grisea* e *B. petasitifolia*, com as quais é comparada. Os caracteres diagnósticos, a distribuição geográfica e o estado de conservação da nova espécie são apresentados.

Palavras-chave: Conservação, Mata Atlântica, taxonomia

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!).

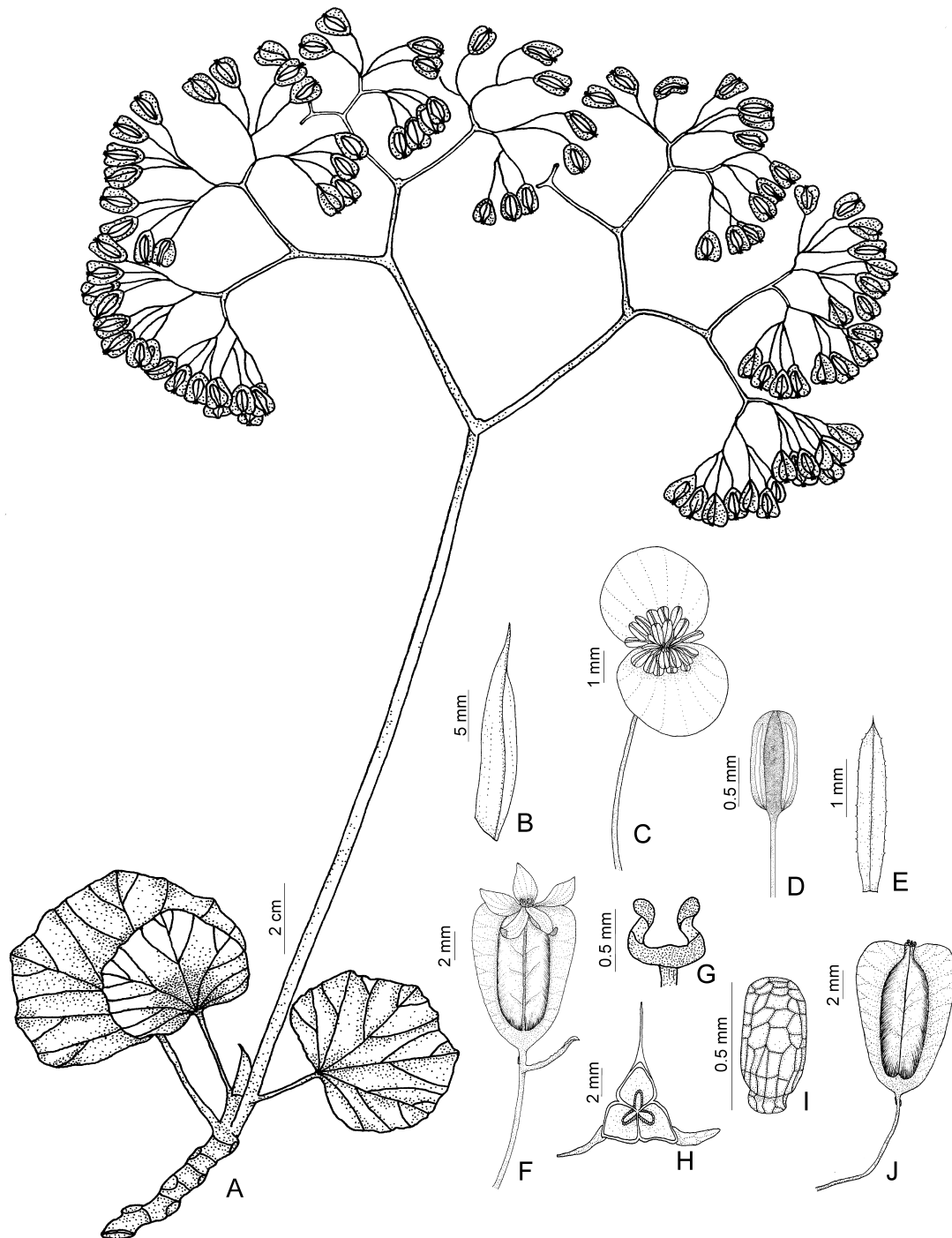


FIGURE 1. *Begonia obdeltata*. **A.** branch with infructescence; **B.** stipule, dorso-lateral view; **C.** staminate flower; **D.** stamen; **E.** bracteole of pistillate flower; **F.** pistillate flower; **G.** branch of style; **H.** cross section of the ovary, showing placentae; **I.** seed; **J.** 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).

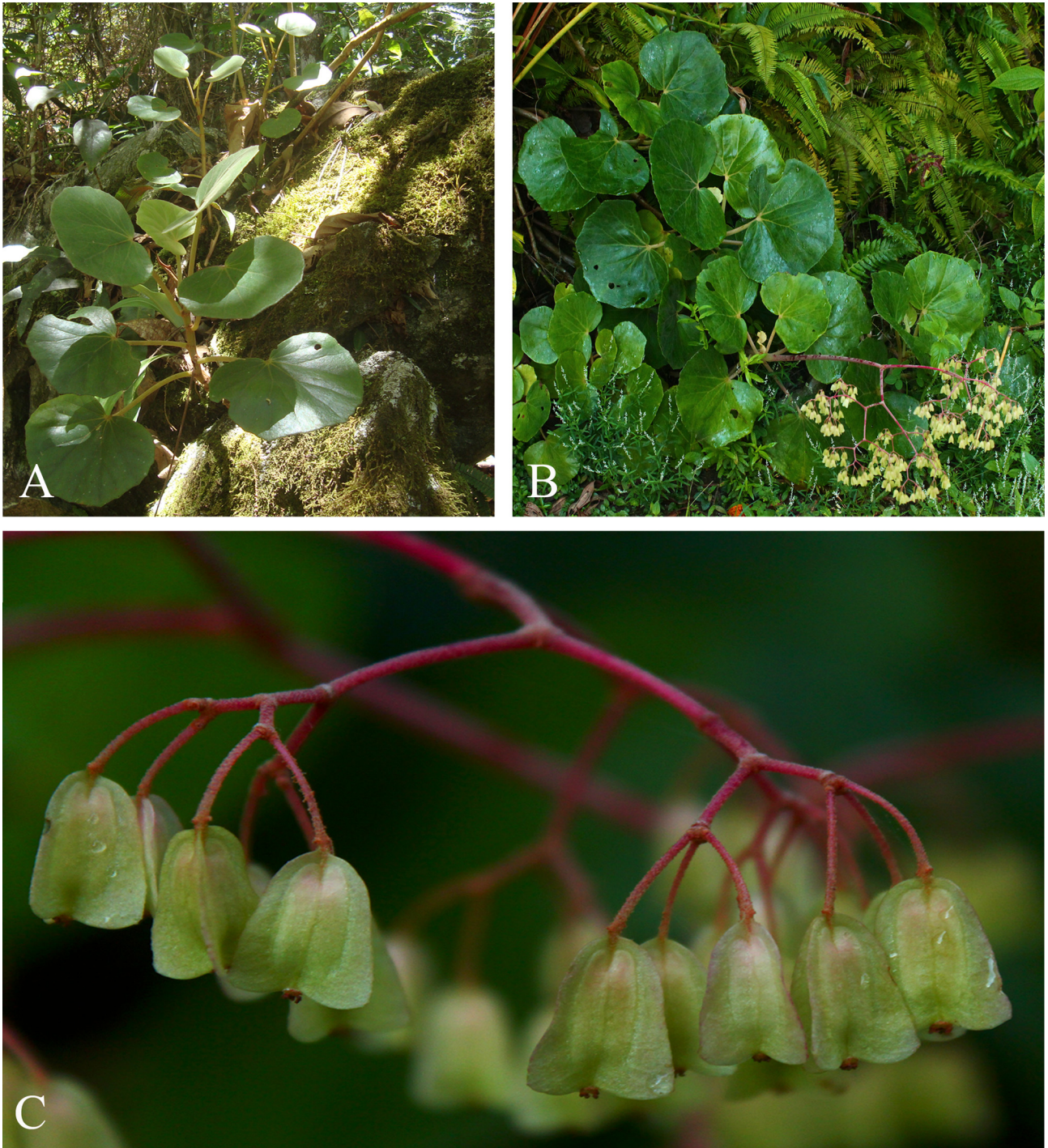


FIGURE 2. *Begonia obdeltata* from Reserva Particular do Patrimônio Natural Serra Bonita, Camaçan, Bahia, Brazil. **A.** habit; **B.** fruiting plant; **C.** immature fruits (photos A by Bernarda de Souza Gregório and B–C by Alessandro Rapini).

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

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, rimose, 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, trilobular, light green; placentation 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.

Additional specimens examined (paratypes): —BRAZIL. Bahia: Arataca, Serra das Lontras National Park, 15°12'17"S, 39°22'52"W, 12 September 2011 (fl.), *P. Leitman et al.* 424 (CEPEC!); Barro Preto, Serra da Pedra Lascada, 14°46'13"S, 39°32'10"W, 10 April 2012 (st.), *B.S. Gregório et al.* 207 (HUEFS!); Camacan, RPPN Serra Bonita, 9.7 km from Camacan to Jacareci, then 6 km SW to RPPN and Embratel tower, 15°23'30"S, 39°33'55"W, 16 September 2006 (fl.), *A.M. Amorim et al.* 6290 (CEPEC!); *ib.*, 28 October 2005 (fr.), *A.M. Amorim et al.* 5388 (CEPEC!, RB!); *ib.*, 15°23'29"S, 39°33'57"W, 13 February 2013 (fr.), *B.S. Gregório* 230 (HUEFS!, K!, RB!, SP!, SPF!, US!); Santa Teresinha, Serra da Jiboia, ca. 4 km from Pedra Branca, 12°51'10"S, 39°28'32"W, 27 September 2000 (fr.), *L.P. Queiroz et al.* 6364 (HUEFS!, SPF!). Pernambuco: Gravatá, Harmonia farm, 6 September 1970 (fl., fr.), *D. Andrade-Lima s.n.* (IPA!); Jaqueira, RPPN Frei Caneca, Mata do Espelho, 19 September 2004 (fr.), *K. Pinheiro* 13 (UFP!).

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.

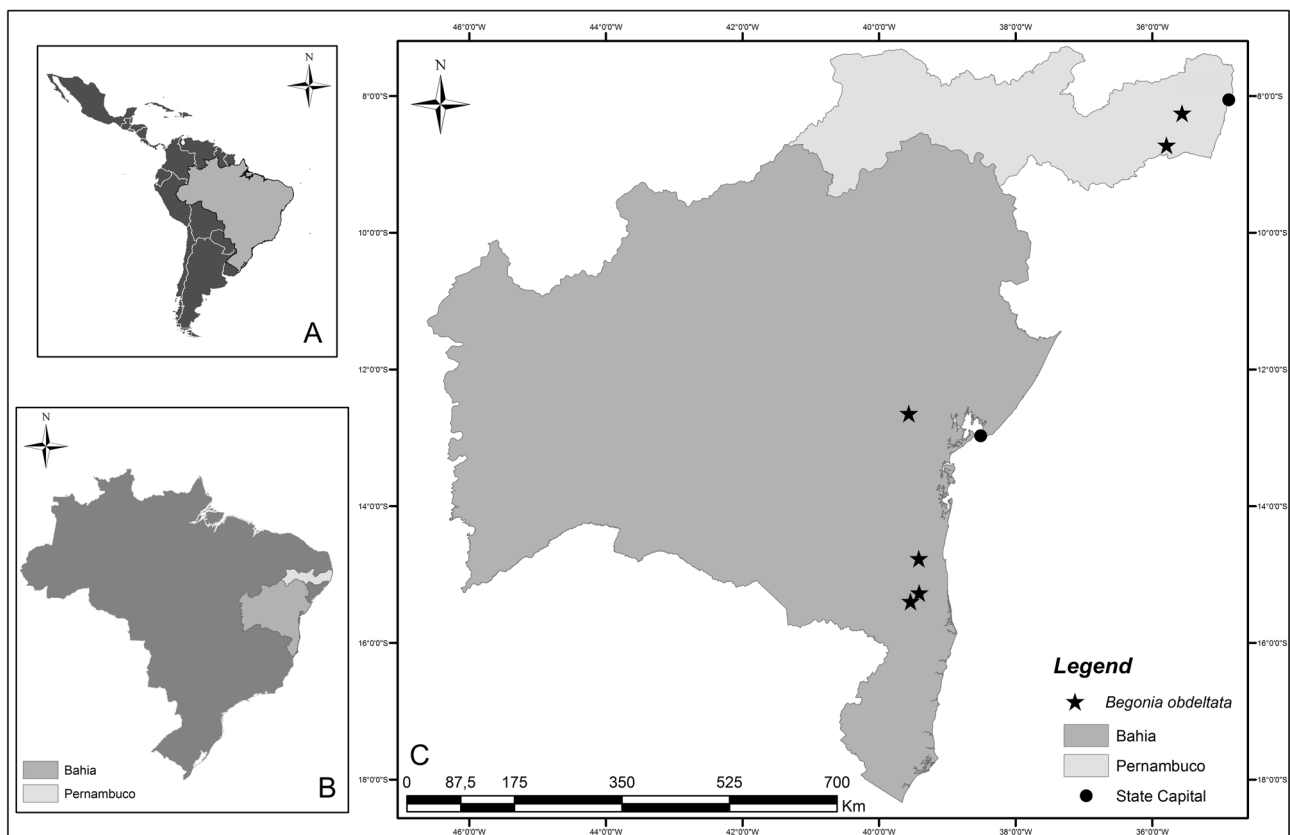


FIGURE 3. Geographical distribution of *Begonia obdeltata*. **A.** Latin America; **B.** Brazil; **C.** States of Bahia and Pernambuco.

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 papery 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* Irmischer (1959: 187), *B. grisea*, and *B. ruhlundiana* Irmischer (1953: 67), do not have cystoliths (Irmischer 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*.

Characters	<i>B. grisea</i>	<i>B. obdeltata</i>	<i>B. petasitifolia</i>
Habit	Erect	Erect	Prostrate or decumbent
Stem	Not rhizomatous	Not rhizomatous	Rhizomatous
Stipule	Triangular and deciduous	Lanceolate and deciduous	Triangular and persistent
Number of tepals in staminate flower	2	2	4
Style length	2–6 mm	0,5–1,2 mm	1,7–6 mm
Fruit	Globular, with one wing larger than the others	Obdeltoid, with equal wings	Globular, with one wing larger than the others

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