



## Novitates Rio Munis 2. A new species of *Begonia* section *Loasibegonia* (*Begoniaceae*) from the Monte Alen region, Equatorial Guinea

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### Key words

*Begonia*  
*Begoniaceae*  
biodiversity  
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Pleistocene refuge  
taxonomy

**Abstract** A new, yellow-flowering species of *Begonia*, *B. aequatoguineensis*, is being described from the Monte Alen region in Equatorial Guinea. It belongs to the section *Loasibegonia* and supports the idea that the Monte Alen region harbours an exceptionally high biodiversity and possibly represents a former Pleistocene rain forest refuge.

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### INTRODUCTION

This is the second contribution to a new series, *Novitates Rio Munis*, started by Leal (2007) to yield broader attention to the exceptional botanical diversity of Equatorial Guinea.

In 2006, the second author, who has a specific interest in the *Begonia*'s of Equatorial Guinea, collected material in the Monte Alen region of a small, yellow-flowering species of *Begonia* which he had never seen before and which he could not identify with the work of Sosef (1994). When he brought the material to Wageningen and showed it to the first author, it was soon recognized as a yet undescribed species.

The species can be easily recognized as a member of the section *Loasibegonia* A.DC. (Doorenbos et al. 1998), because of the rhizomatous nature of the plants, the inflorescence being reduced to a cincinnal monochasium, its 2 perianth segments in both male and female flowers, and the erect, narrowly elliptic fruits. Within that section, it seems most closely related to *B. atroglandulosa* Sosef and *B. minuta* Sosef (Sosef 1992), with which it shares the presence of minute, dark purple, glandular hairs. Both these species are small herbs as well, the first occurring in Gabon, western Congo (Brazzaville) and western Democratic Republic of Congo, the second a narrow endemic from southern Cameroon. The most striking distinguishing features of the new species are the narrow leaves with a bullate and hairy upper surface and a finely dentate margin (Fig. 1). The individual bullae are small and occur in compound groups, reminiscent of the situation in the regularly grown *B. staudtii* Warb. (Henthorne 2006) belonging to the same section.

After the full revision of the sections *Loasibegonia* and the closely related section *Scutobegonia* Warb. by Sosef (1994), four new species belonging to these two sections have now

been described in recent years (De Wilde 2002, Sosef & Leal 2002, De Wilde & Van Valkenburg 2005). Each one of these displays the feature of deep yellow perianth segments which is otherwise rare within the genus *Begonia*. These additions now bring the total number of species within the section *Loasibegonia* to 21 and that within the section *Scutobegonia* to 23.

The new species contributes to the already exceptionally high botanical diversity and endemism reported to be present in the Monte Alen – Monte Mitra region of Equatorial Guinea (Balinga et al. 2005, Senterre 2005, Leal 2005a, b, 2007). The new *Begonia* species therefore provides further support to the generally accepted idea that this high diversity is related to the fact that the Monte Alen – Monte Mitra region represents a Pleistocene rain forest refuge (Sosef 1994, Maley 1996, Leal 2005b). Especially so because *Begonia* species of the sections *Loasibegonia* and *Scutobegonia* are thought to represent indicator species for such refuge areas (Sosef 1994, 1996). The Monte Alen Pleistocene refuge region links up with the equally rich Crystal Mountains region in Gabon (De Wilde 1994, Bissiengou & Sosef 2008). This urges GOs as well as NGOs responsible for the conservation of the biodiversity resources of international importance within Equatorial Guinea, to come up with sound and effective park management plans. It has for example been suggested that the boundaries of the Monte Alen National Park should be redrawn, because it in fact includes only a minor part of the former refuge area (Nchanji et al. 2005). The fact that the new species is found just east of the Monte Alen National Park boundaries seems to confirm this idea.

### DESCRIPTION

*Begonia aequatoguineensis* Sosef & Nguema, *spec. nov.*  
— Fig. 1

*Begonia atroglandulosa* Sosef et *Begonia minuta* Sosef similis, sed differt foliis multo angustioribus, anguste ovatis vel anguste elliptico-ovatis, bullatis, supra pilosis et margine subtiliter dentatis. — Typus: N.S. Nguema Miyono 2089 (holo WAG; iso BATA, MA, MO), "Guinée Equatoriale, 2 km à l'Ouest de Mendung, 1°43'N 10°24'E, forêt dense montagnard, avec des grands cailloux, 21 Décembre 2002".

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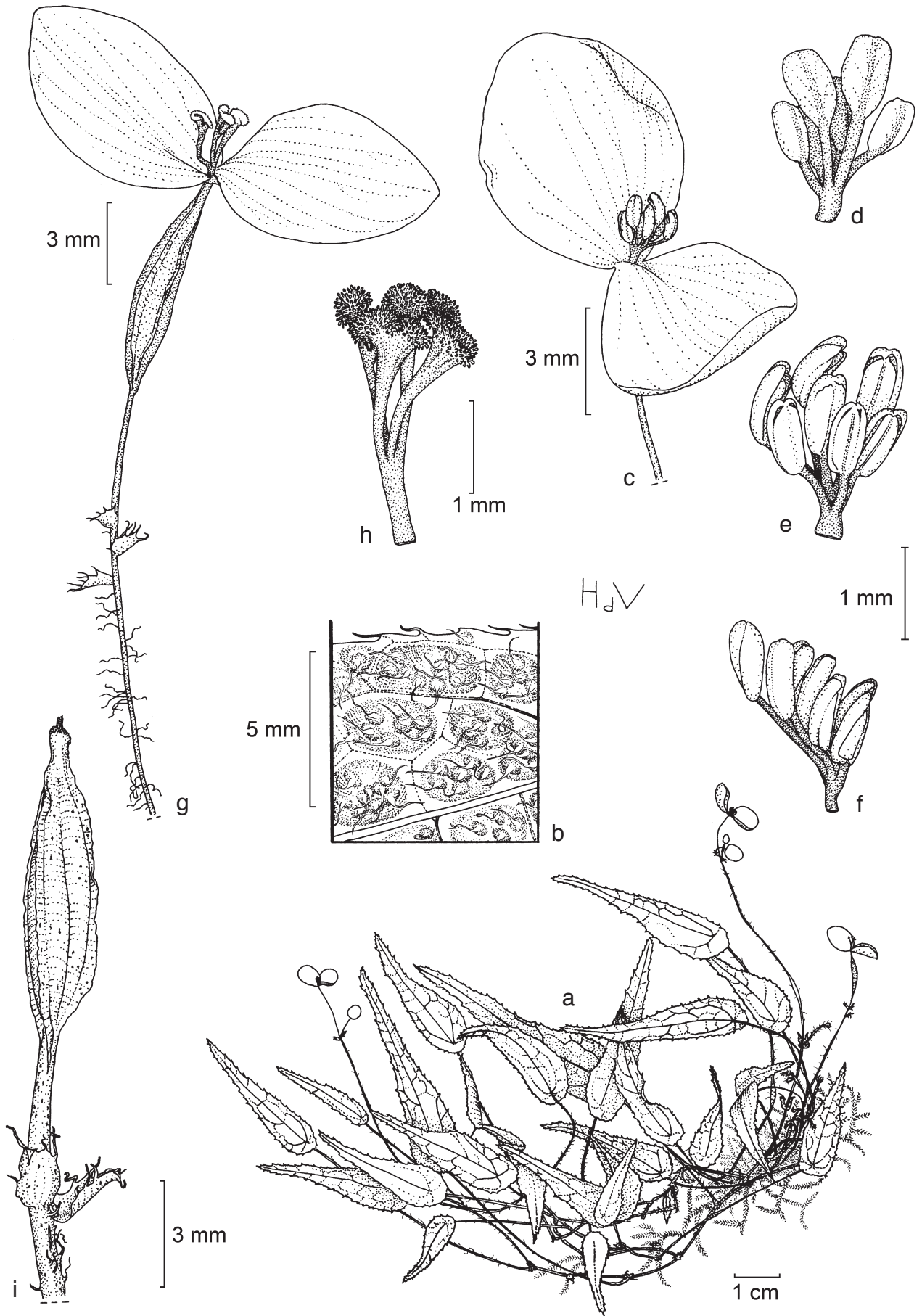


Fig. 1 *Begonia aequatoguineensis* Sosef & Nguema. a. Habit; b. detail of leaf surface; c. male flower; d. androecium, dorsal view; e. androecium, frontal view; f. androecium, side view; g. female flower; h. styles; i. fruit (all Nguema 2089). — Drawn by Hans de Vries.

Small rhizomatous herb up to c. 5 cm high, most parts hairy and scattered with two types of minute glandular hairs, one brownish and the other dark purple or black, the latter type especially abundant on the rhizome, petiole and peduncle. *Rhizome* slender, elongated, c. 1 mm diam (in sicco); *stipules* triangular to narrowly triangular or narrowly triangular-ovate, 2–3 mm long, with an acute to long acuminate apex and some cilia along the margin of the apical part. *Leaves* peltate; petiole inserted at 0.5–4 mm from the nearest margin, 12–48 mm long; leaf blade asymmetric or slightly so, narrowly ovate to very narrowly elliptic-ovate, 20–48 by 4–17 mm, with a long acuminate to attenuate apex, with 3–6 palmate main nerves; margin finely dentate, the teeth ending in a hair; upper surface concolorous, bullate with small bullae in compound groups, each topped with a hair, nerves not prominent; lower surface with slightly prominent main nerves (in sicco), all nerves set with patent hairs. *Inflorescence* axillary, a contracted, cincinnal monochasium consisting of 1 or 2 male and 1 terminal female flower; peduncle simple, 20–37 mm long; bracts 2 or 3, broadly ovate, 1–1.5 mm long, with a ciliate margin. *Male flower* erect; pedicel 9–15 mm long; perianth segments 2, circular to broadly elliptic, 5–8 by 4–6 mm, yellow, glabrous except for some minute glandular hairs; androecium a zygomorphic fascicle with 7–11 stamens in several rows like an amphitheatre; filaments fused at base into a short column of c. 0.5 mm, free parts 0.2–1 mm long; anthers c. 1 mm long, opening by 2 unilateral longitudinal slits. *Female flower*: similar to the male one but pedicel elongated in fruit up to 4 mm; styles 4, 1.7–2.2 mm long, fused at base, stigma terminal, semicircular, not coiled; ovary narrowly elliptic to oblong, 6–8 by 1–1.2 mm including the 1–2 mm long beak, 4-locular, with 4 very narrow ribbon-like wings all along. *Infructescence*: peduncle straight; fruit erect, narrowly elliptic to oblong, 5–10 by 1–1.5 mm including the 1.5–4 mm long beak, thin-walled.

Distribution — Only known from the type locality.

Ecology — In primary forest with many large rocks, growing on moss-covered rock faces; at c. 450 m altitude.

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