

**NOVITATES GABONENSES 57.
BEGONIA SOSEFIANA (BEGONIACEAE). A NEW SPECIES
IN SECTION LOASIBEGONIA FROM GABON**

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SUMMARY

A new narrowly endemic *Begonia* species discovered during recent fieldwork in the northern part of the Doudou Mountains in Gabon is described.

Key words: Begoniaceae, *Begonia*, sect. *Loasibegonia*, Africa, Gabon, taxonomy.

INTRODUCTION

When studying begonias recently collected in a hitherto botanically unknown part of the Moukalaba Doudou National Park in Gabon, we came across material that could not be attributed to any known species. The yellow-flowered plant clearly belonged to either section *Loasibegonia* or *Scutobegonia*, sections both monographed by Sosef (1994). A detailed study of the material proved that a new species was at hand. The 1–2.5 mm long petiole clearly distinguishes it from all other species in section *Loasibegonia* or *Scutobegonia*. It is here described.

DESCRIPTION

Begonia sosefiana J.J. de Wilde & Valk., *spec. nov.* — Fig. 1

Begoniae scutifoliae similis, sed ab ea differt rhizomate repenti descendenti tenui, stipulis longissime persistentibus, petiolis 1–2.5 mm longis et floribus femineis pedicellum 1.5–2 mm longum habentibus. — Typus: *Van Valkenburg et al.* 2978 (holo WAG; iso BR, LBV, MO), Gabon, Ogooué, Maritime, Mt Igoumbi, 600 m a.s.l., 12 April 2005.

Creeping rhizomatic herb attached to rocks. Stems slender (in vivo red-brown), up to 15 cm long, 1 mm thick in dried condition, scantily rooting from especially the lower nodes, not or scarcely branched, distinctly descending, almost devoid of longer hairs but the whole plant with scattered minute brown glandular trichomes, sparsely so on the inside of the stipules, the upper surface of the leaves and the inside of the perianth segments. *Stipules* conspicuous, imbricate, appressed to and covering a large part of the stem, ovate to obovate or narrowly so, c. 6 by 2–2.5 mm, 3–5-fissured or fimbriate in the upper half, the teeth with a hairlike tip. *Leaves* on the drooping stems all arranged in a single, usually almost vertical plane, succulent, dark green above,

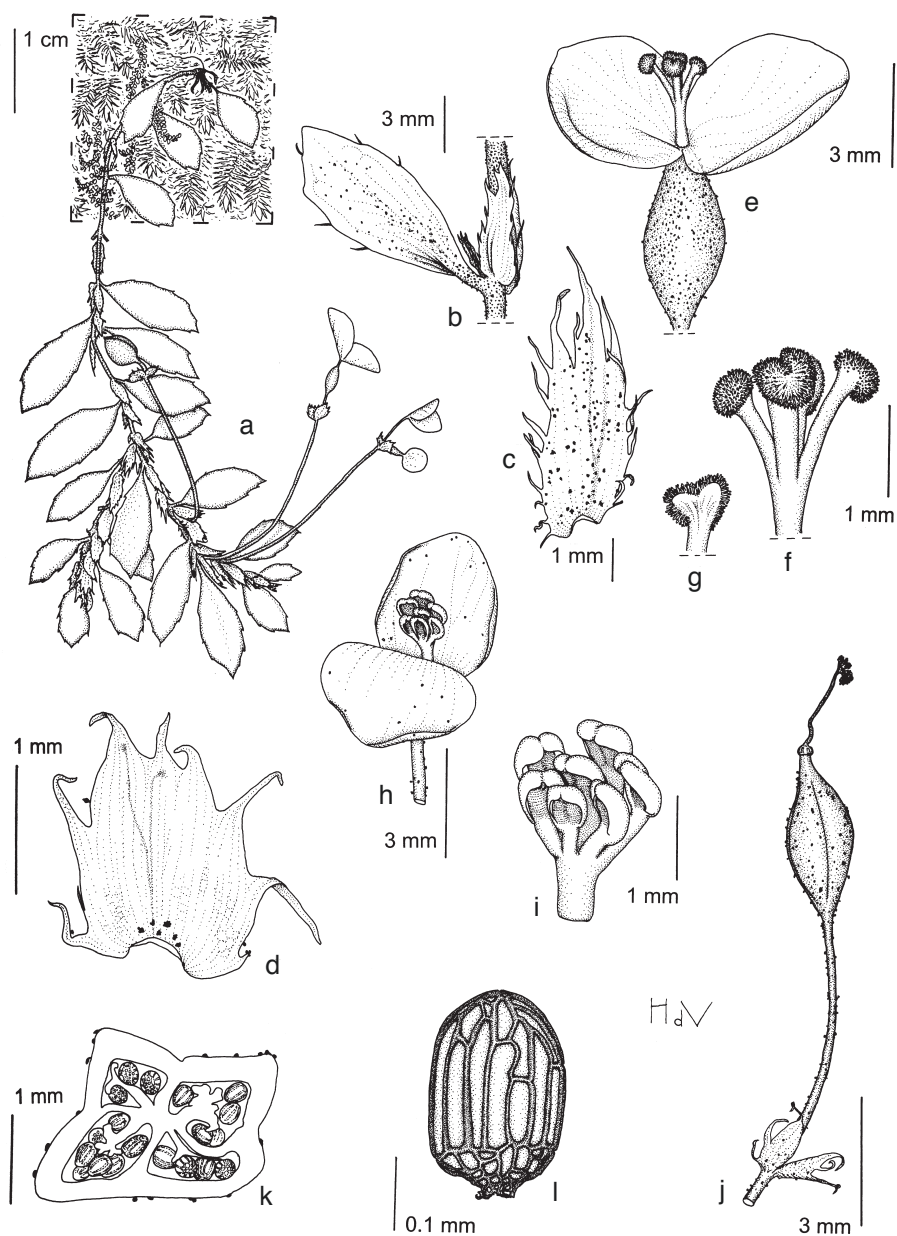


Fig. 1. *Begonia sosefiana* J.J. de Wilde & Valk. a. Habit; b. leaf with stipules; c. stipule, abaxial side; d. bract, lower surface; e. female flower; f. styles; g. stigma, adaxial side; h. male flower; i. androecium; j. fruit; k. fruit in cross section; l. seed (all: Van Valkenburg *et al.* 2978, WAG).

pale green below, very narrowly obscurely peltate or not peltate; petiole continuing into the midrib without an angle, 1–2.5 mm long, densely set with minute glandular brownish trichomes; leaf blade almost symmetrical, sometimes faintly falcate, narrowly obovate, 7–20 by 3.5–6 mm, apart from the midrib the nerves scarcely visible; margin entire, in the upper half of the blade often with a few blunt teeth ending in a hair; base symmetrical, cuneate, top acute to obtuse, usually ending in a hair; upper surface flat and shining dark green; lower surface pale green, dull and set with numerous minute trichomes. *Inflorescence* axillary, a strongly reduced cincinnal monochasium positioned near the apex of the stem, usually containing 1 male and 1 terminal female flower, sometimes containing only 2 male flowers and occasionally further reduced to a single male or female flower; peduncle slender, 15–25 mm long; bracts (2) 3, up to 1.5 by 0.5 mm, fimbriate, sometimes fissured in the upper part. Male flower: pedicel at anthesis 4–10 mm long, almost glabrous; *perianth segments* (tepals) 2, broadly elliptic to transversely broadly elliptic-ovate or obovate, with a rounded to cuneate base, c. 5 by 5–6 mm, bright yellow, outside with a few scattered trichomes; androecium a yellow zygomorphic fascicle with 5–8 stamens arranged like in an amphitheatre; filaments fused for the greater part into an up to 1.5 mm long central column; anthers narrowly elliptic, c. 0.8 by 0.2 mm, somewhat curved longitudinally, obtuse or slightly notched at apex, opening by two unilateral longitudinal slits facing the upper perianth segment. Female flower: similar to male flower but the pedicel only 1.5–2 mm long, in fruit the pedicel, however, elongated up to 3 mm; perianth segments almost circular to very broadly ovate, c. 5 mm diam.; styles 4, c. 3 mm long, fused in the lower half, the free part of each style 1–1.5 mm long, the top split into a compact and rounded U-shape, the arms 0.2–0.3 mm long and covered by a compact non-spiralled semicircular band of stigmatic tissue; ovary narrowly ovoid to spindle shaped, up to c. 4 by 1–2 mm, almost apterous or at best inconspicuously 3- or 4-ribbed. *Infructescence* with the peduncle straight and often parallel, and not recurved towards the substrate; fruit narrowly ovoid to ellipsoid, c. 4 by 2 mm, perianth segments and styles not persistent, dry, thin-walled, with numerous scattered minute brown glandular trichomes.

Distribution — Only known from the type locality.

Habitat & Ecology — *Begonia sosefiana* grows on moist vertical rock faces in evergreen rain forest characterized by large rock outcrops. In appropriate habitats it is found in large numbers adding yellow dots to what at first appears to be a moss covered rock face. On the southern summit of Mt Igoumbi at 800 m, with a clearly more open canopy of just 20 m height, the species was still present on moss covered vertical rock faces, where the moss cover clearly indicated signs of drought. Plants growing in such a specific micro-habitat, characterized by the lack of a moisture buffering substrate and intermittently exposed to direct solar insulation, may be liable to drought stress. We assume that the conspicuous, comparatively large, long persistent stipules that are appressed to and cover the stem present a modification that allows *B. sosefiana* to survive periods of drought in what is called the ‘cool’ dry season in Gabon (Leal, 2004).

Notes — 1. The second author observed that on the almost vertical, wet, mossy rock face where he collected the new species, all the individual plants were growing in a downward direction, the creeping stems descending. This in contrast to plants of *Begonia scutifolia* Hook.f., a related species that was collected in a similar habitat at a lower elevation on the same mountain, in which the stems are in general ascendant.

2. To decide upon the sectional status and in particular to discriminate between the sections *Loasibegonia* and *Scutobegonia*, among other characters, the position of the fruits is used (Sosef, 1994: 140; Doorenbos et al., 1998: 60). Mature fruits erect leads to sect. *Loasibegonia*, while fruits recurved towards the substrate indicate sect. *Scutobegonia*. In the here described new species the peduncle in fruit is often completely reversed, parallel to the stem and to the substrate (Fig. 1a). In this condition, however, apart from the bend at its base the peduncle stays perfectly straight, indicative of sect. *Loasibegonia*.

3. The key to the species of *Begonia* sect. *Loasibegonia* and sect. *Scutobegonia* (Sosef, 1994: 141) opens with a lead to differentiate between leaf blades that are evidently not peltate and leaves that are peltate or subpeltate. Superficially the leaves of our new species are not peltate. Upon careful examination and with the aid of magnification however, it shows that in a number of the leaves the faintest of a rim is found on the upper surface where the petiole merges into the leaf blade. Those leaves are obscurely subpeltate while others are not peltate. Following Sosef's key in choosing leaf blades (sub)peltate and making allowances for leaf shape and dimensions, one arrives at *B. (Loasibegonia) minuta* Sosef. This narrowly endemic species, only known from one locality in Cameroon, certainly does not match the material described above. The alternative, not peltate, leads to *B. (Loasibegonia) scutifolia* Hook.f. The leaves in this species are described as very variable, subpeltate to peltate, and rarely even not peltate. However, habit, petiole length and a number of other characters of the here examined and described new material do so deviate from *B. scutifolia* that the recognition of a new species is fully warranted. In our opinion *B. scutifolia* and *B. sosefiana* are closely affiliated but nonetheless perfectly discrete species.

4. In our decision to consider the here described material as a new species, different from *B. scutifolia*, we also accounted for its alleged synonyms, viz. *B. triflora* (Irmscher, 1921: 245) and *B. triflora* var. *caloskiadia* (Hallé, 1967: 509). We endorse the synonymy of these two taxa in the very variable *B. scutifolia*, and at the same time find support for our notion that the newly described taxon falls well outside this variation.

Etymology — The first author takes pleasure in dedicating the new *Begonia* species to Marc Sosef, a former pupil and a colleague in *Begonia* research. Presently, Professor Sosef is head of the Department of Biosystematics at Wageningen University. Due to his monograph of *Begonia* sections *Loasibegonia* and *Scutobegonia* (Sosef, 1994) the present authors could readily conclude that a new species in sect. *Loasibegonia* was at hand. The specific epithet, moreover, recognizes Sosef's active involvement in the study of the flora of Gabon.

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