



Begonia henrilaportei Scherber. & J. Duruisseau (Begoniaceae), a New Endemic Species from the Masoala Peninsula, Madagascar

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Begonia henrilaportei Scherber. & J. Duruisseau (Begoniaceae), a new endemic species from the Masoala peninsula, Madagascar

David Scherberich & Jacky Duruisseau

Abstract

SCHERBERICH, D. & J. DURUISSEAU (2016). *Begonia henrilaportei* Scherber. & J. Duruisseau (Begoniaceae), a new endemic species from the Masoala peninsula, Madagascar. *Candollea* 71: 13-18. In English, English and French abstracts. DOI: <http://dx.doi.org/10.15553/c2016v711a3>

Begonia henrilaportei Scherber. & J. Duruisseau, new species of *Begoniaceae* from the Masoala peninsula, in north-east Madagascar, is described and illustrated. It is provisionally placed in section *Nervioplacentaria* A. DC. and compared with *Begonia lyallii* A. DC. with which it presents morphological affinities. It is also compared with *Begonia nana* L'Hér. and *Begonia bogneri* Ziesenh. with which it has been mistaken in herbarium. A comparative table of characters is provided. The new species differs from these three species by having a caulescent habit with a creeping stem and linear-lanceolate blades with pinnate venation. The diagnostic characters, geographic distribution and a preliminary conservation assessment of the new species using the IUCN Red List Categories and Criteria are presented.

Résumé

SCHERBERICH, D. & J. DURUISSEAU (2016). *Begonia henrilaportei* Scherber. & J. Duruisseau (Begoniaceae), une nouvelle espèce endémique de la péninsule de Masoala, Madagascar. *Candollea* 71: 13-18. En anglais, résumés en anglais et français. DOI: <http://dx.doi.org/10.15553/c2016v711a3>

Begonia henrilaportei Scherber. & J. Duruisseau, nouvelle espèce de *Begoniaceae* de la péninsule de Masoala, au nord-est de Madagascar, est décrite et illustrée. Elle est provisoirement placée dans la section *Nervioplacentaria* A. DC. et comparée avec *B. lyallii* A. DC., espèce avec laquelle elle présente des affinités morphologiques. Elle est également comparée avec *Begonia nana* L'Hér. et *Begonia bogneri* Ziesenh. avec lesquelles elle a été confondue à tort en herbier. Un tableau comparatif des caractères est présenté. La nouvelle espèce diffère de ces trois espèces par son port caulescent à tige rampante et ses limbes linéaires-lancéolés avec une nervation pennée. Les caractères diagnostiques, la répartition géographique et une évaluation préliminaire du statut de conservation selon les Catégories et Critères de la Liste Rouge de l'UICN sont présentés.

Keywords

BEGONIACEAE – *Begonia* – Madagascar – Masoala – Taxonomy

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Introduction

The genus *Begonia* L. (*Begoniaceae*) contains 1,800 recognised species (HUGHES et al., 2015) of perennial or occasionally annual herbs, widely distributed in the tropical and subtropical regions, sometimes extending into parts of temperate Asia. In the revision of *Begoniaceae* for the “Flore de Madagascar et des Comores”, KERAUDREN-AYMONIN (1983) recognised 48 species of *Begonia* in Madagascar. Since then, only one species of Malagasy *Begonia* has been described, *B. masoalaensis* M. Hughes (HUGHES, 2011). With the exception of *B. oxyloba* Welw. ex Hook. f. which is largely distributed in tropical Africa, and the doubtfully native *B. humilis* Dryand., all known species are endemic to the island. Most of them are only known from a very restricted area. The introduction into cultivation in the past decade of various species allowed a better understanding of some taxa but also highlighted a few other ones which doesn't seem to correspond to any known species. It is one of these novelties which is here described and illustrated. Living plants were originally introduced into cultivation in 1998 by Henri Laporte, and then again by Jacky Duruisseau in 2009, on a collecting trip which followed the footsteps of Laporte in the Masoala peninsula (Fig. 1). The publication of this new species raises to a total of 50 the number of *Begonia* species known from Madagascar and to 8 the number of species recorded for the Masoala region. These include *B. antongilensis* Humbert, *B. bogneri* Ziesenh, *B. erminea* L'Hér., *B. henrilaportei* Scherber. & J. Duruisseau, *B. lyallii* A. DC., *B. masoalaensis*, *B. nana* L'Hér. and *B. tsimibety* Humbert.

Systematics

Begonia henrilaportei Scherber. & J. Duruisseau, **spec. nova** (Fig. 2, 3).

Typus: MADAGASCAR. **Prov. Toamasina:** Masoala Peninsula, Ambanizana, trail along coast 3-6 km S of Ambanizana, 15°39'S 49°58'E, 30.X.1992, fl., *Schatz et al.* 3370 (holo-: P [P00137297]!; iso-: MO-2740146!, TAN!, WAG!).

Begonia henrilaportei Scherber. & J. Duruisseau differs from all other Malagasy species by the unique combination of creeping stem, linear-lanceolate blades with pinnate venation, male flowers composed of 2 perianth segments and female flowers with 4 segments.

Perennial lithophytic herb; Stems creeping, to 30 cm long and 3 mm wide, turning woody at the base, branched, pale green to red, sparsely hairy; internodes 0.5-2.5 cm long. Stipules persistent, narrowly triangular, the margins entire, 0.5-0.9 cm long, pale green to red. Leaves numerous, alternate, straight, simple, to 5-14 cm long; petiole short, 0.5-2.5 cm, green tinted red, sparsely hairy. Blade symmetric to slightly asymmetric, linear-lanceolate, 5-11 × 0.4-1.3 cm, attenuate at the base, the margins strongly incised, 6-10 incisions per

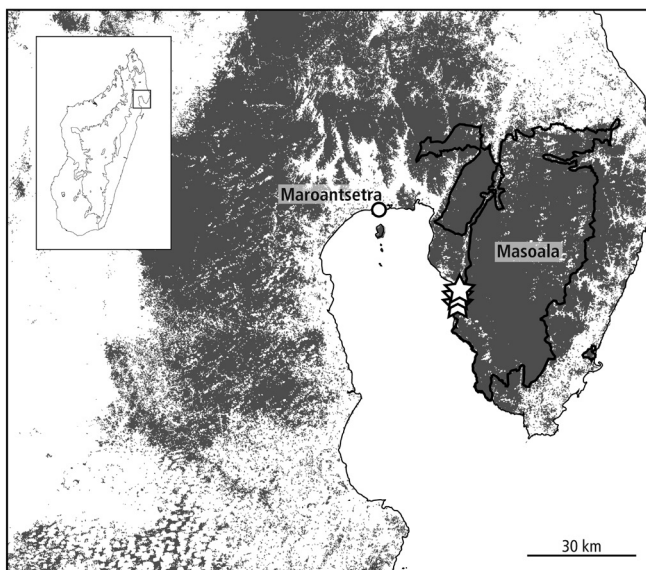


Fig. 1 – Distribution of *Begonia henrilaportei* Scherber. & J. Duruisseau (white stars) in the Masoala Peninsula, Madagascar plotted on a map of forest cover in 2000 (grey) following HARPER et al. (2007).

side; adaxial surface pale green, glossy, with white granular inclusions; abaxial surface paler, semi-glossy, margins tinted red; midrib raised on adaxial side, convex, darker green, sometimes with a few trichomes on upper part, convex and tainted red on abaxial side; venation pinnate, with 6-10 veins per side, darker. Inflorescence axillary, monochoasial, pauciflowered, bearing 2-5 flowers at summit, generally bisexual, protandrous, the male flowers basal, bearing a solitary female flower distally; peduncle to 1.5-7.5 cm, pale green, sometimes tinted pink in upper part, bracts early caducous; bracteoles absent; perianth bright pink, the segments rounded at apex. Staminate flowers perianth composed of 2 segments, free, suborbicular, 5-7.5 mm × 5-7 mm; Androecium zygomorphic; stamens 8-11, fasciculate, free, filaments 1.5-2 mm, white; anthers 1.3-1.6 mm oblong, emarginate at apex, pale yellow, about nearly as long as filaments, dehiscent with lateral longitudinal slits. Pistillate flowers with perianth composed of (3-) 4 segments, free; ovary 3-winged, with one wing conspicuously larger than the two others, pale green, composed of 3 locules, placentation axillary; placental branches 2 per locule; styles 3, free, bifid, white to pale pink, persistent; stigma reniform. Fruit a 3-winged dry capsule, nodding, the wings unequal, main wing about 7 mm long and 10 mm wide, the lateral ones about 2.5 mm long and 8.5 mm wide. Seeds globose-ovoid, about 0.3 mm, turgument reticulate.

Etymology. – This new species is dedicated to Henri Laporte, explorer, keen *Begonia* grower and collector, who discovered and introduced into cultivation many species from Madagascar. Henri died of severe malaria in December 2001, which he contracted on a trip to Madagascar.



Fig. 2. – *Begonia henrilaportei* Scherber. & J. Duruisseau. **A.** Habit in the type locality; **B.** Leaf adaxial surface; **C.** Apex of stem; **D.** Leaf abaxial surface; **E.** Inflorescence showing female flower and male flower bud; **F.** Stamens. [Photos: **A:** J. Duruisseau; **B-F:** D. Scherberich]



Fig. 3. – Holotype of *Begonia henilaportei* Scherber. & J. Duruisseau.
[Schatz et al. 3370, P] [© Muséum national d'Histoire naturelle, Paris. Reproduced with permission]

Table 1. – Morphological and ecological features distinguishing *Begonia henrilaportei* Scherber. & J. Duruisseau from *B. bogneri* Ziesenh., *B. lyallii* A. DC. and *B. nana* L'Hér.

Characters	<i>B. bogneri</i>	<i>B. henrilaportei</i>	<i>B. lyallii</i>	<i>B. nana</i>
Section	<i>Erminea</i> A. DC.	<i>Nervioplacantaria</i> A. DC.	<i>Nervioplacantaria</i> A. DC.	<i>Erminea</i> A. DC.
Tuber presence	yes	no	no	yes
Blade shape	filiform	linear-lanceolate	ovate-triangular to ovate-elliptic	ovate-lanceolate
Blade base	attenuate	attenuate	cordate	attenuate to cordate
Venation	secondary venation absent	pinnate	palmate	pinnate
Blade margins	dentate	incised	entire to finely dentate	dentate
Pubescence	glabrous	glabrous to weakly hairy	glabrous to glabrescent	glabrous
Inflorescence	axillary, cymose	axillary, cymose	axillary, cymose	axillary, cymose
Bract	caducous	caducous	caducous	unknown
Number of tepals in male flower	4	2	2	4
Stamens	12	8-11	12-32	9-12
Number of tepals in female flower	6	(3-)4	4	5-6
Fruit	alate, membranous, dehiscent	alate, membranous, dehiscent	alate, membranous,	alate, membranous, dehiscent
Ecology	on granite, 50 m	humid rocks (gneiss)	dehiscent humid places in shady forest, on gneiss, 400-1000 m	humid rocks (gneiss or quartzites) in shady forest, 50-300 m

Phenology. – Flowering has been observed from November to March.

Distribution and ecology. – Known only from the type locality, along the path connecting Ambanizana to Ambodiforaha near the sea shore, on the west coast of the Masoala peninsula, in the Analanjirofo region, Madagascar (Fig. 1). *Begonia henrilaportei* is a lithophytic hygrophilous species, on granitic rocks (gneiss) in streams, growing among mosses, pteridophytes and *Melastomataceae*, close to the sea.

Conservation status. – The only known location of *B. henrilaportei* lies in the periphery of the Masoala National Park, along a path that is used everyday by farmers and inhabitants of nearby villages. About 10-20 individuals only have been observed and despite a thorough exploration of the surrounding areas on multiple expeditions, no other population has been found so far. We therefore assigned a preliminary conservation status of “Critically Endangered” [CR C2a(i)] (IUCN, 2012).

Notes. – The only other species from section *Nervioplacantaria* A. DC. with a long, creeping stem is *B. lyallii* but that species differs by the ovate-triangular to ovate-elliptic blades with palmate venation. It is also superficially similar to and has been mistaken in herbarium with *B. nana* and *B. bogneri* but these species both belong to sect. *Erminea* A. DC. and differ by the tuberous and acaulescent habit, male flowers composed of 4 perianth segments and female flowers with 5-6 segments.

The type, *Schatz et al.* 3370, was determined in P [P00137297] as *B. nana* by G. Aymonin (Fig. 3) and in MO and WAG as *B. bogneri* by J.J.F. de Wilde. A comparative table with distinguishing features between the new species and the morphologically closely related species is presented in Table 1.

Paratypes. – MADAGASCAR. **Prov. Toamasina:** Maroantsetra, Ambanizana, along path between Ambanizana-Andranobe, 15°39'19"S 49°57'39"E, 11 m, 25.X.2004, fl., *Antilabimena* 2970 (MO-6340835, P [P05619948], WAG); Andranobe, N to Ambanizana, 15°41'S 49°58'E, 5-10 m, 26.II.1999, fl., *McPherson* 17693 (MO, TAN); S. of Ambanizana, 15°39'S 49°57'E, 15 m, 16.XI.1993, fl., *van Nek* 2087 (TAN, WAG [WAG0232448, WAG0232449]); 4 km au S du village d'Ambanizana, rochers sur le sentier qui relie Ambanizana à Ambodiforaha en longeant la mer, 21.III.2013, fl., *Scherberich* 969 (LYJB [LYJB010461, LYJB010462]) [Plante cultivée au Jardin Botanique de Lyon sous le numéro 060667, collectée à l'origine par H. Laporte].

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References

- HARPER, G.J., M.K. STEININGER, C.J. TUCKER, D. JUHN & F. HAWKINS (2007). Fifty years of deforestation and forest fragmentation in Madagascar. *Environm. Conservation* 34: 325-333.
- HUGHES, M. (2011). A new species of fleshy-fruited *Begonia* (Begoniaceae) from the Masoala Peninsula, Madagascar. *Adansonia* ser. 3, 33: 81-85.
- HUGHES, M., P. MOONLIGHT, A. JARA & M. PULLAN (2015). *Begonia Resource Centre* [<http://elmer.rbge.org.uk/begonia>].
- IUCN (2012). *IUCN Red List Categories and Criteria: Version 3.1*. 2nd ed. IUCN Species Survival Commission, Gland & Cambridge.
- KERAUDREN-AYMONIN, M. (1983). Bégoniacées. In: LEROY J.-F. (ed.), *Fl. Madagascar Comores* 144.