



A new species of *Promenaea* (Cymbidieae; Epidendroideae; Orchidaceae) from Southeastern Brazil

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Abstract

During studies toward a new monograph of *Promenaea*, a new species was discovered in Southeastern Brazil. *Promenaea viridiflora* is found in the Atlantic Forest, where it is restricted to São Paulo state. The color of the flower, apex of sepals and petals and callus lip are diagnostic characters that distinguish it from *P. stapelioides*, the morphologically closest species. Nevertheless, *Promenaea viridiflora* is phylogenetically closer to *P. xanthina* than *P. stapelioides*. Although *Promenaea viridiflora* has been grown successfully in the greenhouse at the Núcleo de Pesquisa Orquidário do Estado in the Instituto de Botânica (IBt—São Paulo, Brazil), it has not been recollected for over 25 years. According to the criteria of the IUCN Red List of endangered plant species, *P. viridiflora* is assessed as “Critically Endangered”.

Key words: Conservation, endemism, orchids, São Paulo, taxonomy

Introduction

During studies towards a new monograph of *Promenaea* Lindley (1843: 13), a new species from Southeastern Brazil was discovered and it is described in the present study. *Promenaea* is a genus of orchids endemic to eastern Brazil, occurring almost exclusively in the Atlantic Forest (Barros *et al.* 2014). The genus bears 1-flowered, rarely 2-flowered inflorescences; lateral sepals attached to the foot of the column; a short unguiculate lip; callus on a fleshy disk which extends over the lip; and cartilaginous sessile pollinia attached to the viscidium (Pupulin *et al.* 2009). The species are ornamental, commonly epiphytic, within shady and wet habitats, and with relatively restricted distribution (Barros & Catharino 1994).

The genus has been revised twice (Schlechter 1921; Hoehne 1953) and ca. 15 species were recognized. In these studies, the species were distinguished mainly by the color of the flowers, pattern of spots of the floral segments, and the morphology of the lip and lip callus. However, recently, Barberena (2014) presented a new taxonomic revision of *Promenaea*, and highlighted that the genus has only six species, including *P. viridiflora*.

Material and Methods

Materials from the following herbaria were examined through visits, loans and images available on the internet: ALC, AMES, BM, BR, CEPEC, CESJ, CRI, CVRD, ESA, F, FLOR, FURB, G, GUA, HAS, HB, HBR, HCB, HDCF, HMC, HUEFS, HVAT, ICN, JOI, K, MBM, MBML, MG, MPUC, NY, OXF, P, PACA, R, RB, RBR, RFA, SMDB, SP, SPF, SPSF, UEC, UENC, UPGB, US, VIES and W (acronyms according to Holmgren *et al.* 1990). The specimen types of all taxa published in the genus were studied. Field work in different phytogeographies of the Atlantic Forest in Brazilian States, from Bahia to Rio Grande do Sul, were conducted during four years (2010–2014). Individuals cultivated in the orchid greenhouses of the leading botanical research institutes in Brazil were also analyzed.

Recently, two specimens that were collected in the State of São Paulo during the 1980s flowered in a greenhouse

A key to differentiate these three species is presented below.

1. Flowers with yellow (rarely white colored) background; lip disk with 3(–5)-toothed *Promenaea xanthina*
- 1'. Flowers with green background; lip disk with apex emarginate to 2-toothed.
 2. Lip callus more or less flattened and lying on the disc; sepals and petals green with purple riflings, with apex acute, obtuse or rounded; lip mainly purplish-black *Promenaea stapelioides*
 - 2'. Lip callus erect with cylindrical to truncated cone shape; sepals and petals entirely pale green, with apex acuminate; lip entirely pale green *Promenaea viridiflora*

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