



Short Communication / Nota Científica

Occurrence of *Mormolyca cleistogama* (Maxillarinae, Orchidaceae) in São Paulo state, Brazil

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Abstract

Mormolyca cleistogama has its occurrence unknown in São Paulo state, although widely distributed in South America. In this study, based in field collection, we confirmed the occurrence of *M. cleistogama* in São Paulo state, Brazil. Morphological descriptions, color images and comparison with the closely related taxon, *M. rufescens*, are presented.

Key words: Atlantic Forest, Epiphyte, *Maxillaria*, Serra do Mar.

Resumo

Mormolyca cleistogama, apresenta sua ocorrência desconhecida no estado de São Paulo, apesar de ser amplamente distribuída na América do Sul. Nesse estudo, através de coleta em campo, confirmou-se a ocorrência desta espécie no estado de São Paulo, Brasil. São apresentadas descrição morfológica, fotografias coloridas e comparação com o táxon morfológicamente mais próximo, *M. rufescens*.

Palavras-chave: Floresta Atlântica, Epífita, *Maxillaria*, Serra do Mar.

Recently, *Maxillaria* has undergone several taxonomic treatments, some of them considering the genus in a broad sense (Schuiteman & Chase 2015), and others separating it in multiple genera, previously treated as subgenera or sections (Blanco *et al.* 2007). *Mormolyca* was proposed by Blanco *et al.* (2007) to include 30 species distributed from Mexico to Brazil. The genus is characterized by unifoliate pseudobulbs with a slightly warty texture and subtended by no foliate sheaths; inflorescence arising from rhizome bracts, behind the young pseudobulbs; perianth open without fibers; clavate or arched column, with very short foot; lip with a short trichome cushion; capsules opening by apical splits (Blanco *et al.* 2007).

Currently, *Mormolyca* is represented in Brazil by four species: *Mormolyca calimaniensis* (V.P.Castro) F.Barros & L.R.S.Guim., *Mormolyca cleistogama* (Brieger & Illg) M.A.Blanco, *Mormolyca rufescens* (Lindl.) M.A. Blanco (BFG 2015), and the recently recorded *Mormolyca*

aureoglobula (Christenson) M.A.Blanco (Engels & Rocha 2016).

Mormolyca cleistogama was first described by Illg (1977), who recorded its distribution for Bolivia, Peru, Venezuela and Brazil. In Brazil, this species was reported for the states of Minas Gerais, Rio de Janeiro and São Paulo. However, although the protologue provides a comprehensive description of the species, its geographical distribution was unclearly defined. Out of 44 exsiccate examined by the author, just the holotype was properly cited (Brieger 15512, HB). No herbaria information was provided for the other specimens; thereby it is impossible to know which specimens were used to delimit *M. cleistogama*. Besides, the ecological information (*e.g.*, habitat, locality) of *M. cleistogama* is also unknown, because the holotype was described from a single cultivated plant (ESALQ Piracicaba, SP, Brazil).

In Brazil, Pabst & Dungs (1977) cited the occurrence of *Mormolyca cleistogama* for

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the states of Acre, Espírito Santo, Pará, Santa Catarina and São Paulo. However, no exsiccate information was provided by the authors. Recent studies by Wanderley *et al.* (2011) and BFG (2015), respectively in the checklists of São Paulo and Brazil, did not mention the occurrence of this species for São Paulo state.

Here, we confirm the occurrence of *Mormolyca cleistogama* in São Paulo state, Southeastern Brazil. A morphological description, color images and a comparison with the closely related and sympatric taxon, *M. rufescens*, are presented.

The species was found during floristic and phytosociological studies carried out in the permanent plots of the thematic project “Biota Gradiente Funcional” (ca. 23°14’S, 45°3’W) in Serra do Mar State Park (PESM) Cunha district (Fig. 1). The specimen was collected sterile and cultivated until flowering. Voucher specimen was then deposited in the Herbário Rioclarense (HRCB) of São Paulo State University, Rio Claro, SP. The identification was done following *Opus Principes* (Illg 1977), Pabst & Dungs (1977) and Chiron & Bolsanello (2014). Geographical distribution followed Pabst & Dungs (1977), Wanderley *et al.* (2011) and BFG (2015).

Mormolyca cleistogama (Brieger & Illg) M.A. Blanco, Lankesteriana 7(3): 515-537. 2007. = *Maxillaria cleistogama* Brieger & Illg, Trab. Congr. Nac. Bot. 26: 247. 1977. Type: F.G. Brieger 15.512 (HB). Fig. 2

Epiphyte, about 15 cm height, herbaceous, short rhizome; pseudobulb 2–3 × 1–1.2 cm, flat-

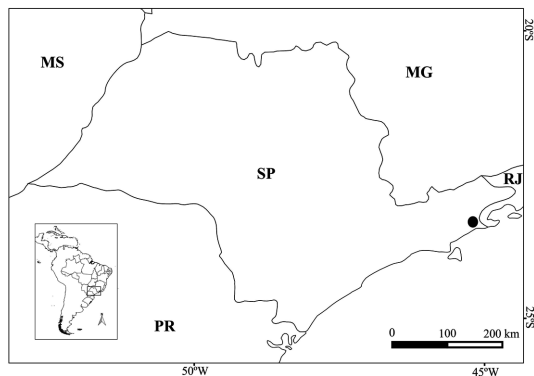


Figure 1 – Geographic location of *Mormolyca cleistogama* record in São Paulo state (MG = Minas Gerais; MS = Mato Grosso do Sul; PR = Paraná; SP = São Paulo; RJ = Rio de Janeiro).

ovoid, covered by imbricate, unifoliate, lanceolate sheaths; leaf 9–12 × 1.5–1.8 cm coriaceous, oblong-lanceolate; one-flowered inflorescence, arising from the pseudobulb basis, pedicel ca. 1 × 0.2 cm, vinaceous; flowers ca. 1 × 1 cm, sepals 0.8–1 × 0.4–0.5 cm, oblong, light-vinaceous, dorsal slightly larger than laterals; petals 1 × 0.4 cm, oblong, cream with vinaceous strip in the center; lip 0.9 × 0.5 cm, tri-lobed, lateral lobes 0.4 × 0.2 cm, erect, with vinaceous spots; upright, emarginate middle lobe, cream with vinaceous strip in the center and vinaceous spots in the apex; column 0.8 × 0.2 cm, clavate, slightly curved, cream with small vinaceous spots; ovary, 0.8 × 0.2 cm, vinaceous; immature fruit ca. 2 × 0.5 cm, capsule.

Examined material: Cunha, Parque Estadual da Serra do Mar, parcela permanente “U”, 23°14’16”S, 44°58’55”W, ca. 1,150 m.a.s.l., 20.VI.2016, G.M. Marcusso *et al.* 462 (HRCB 66407).

According to Illg (1977), *Mormolyca cleistogama* is morphologically related to *M. rufescens*, but both species differ by the size of flowers (about 1 cm vs. 2 cm length, respectively), petal disposition (erect vs. semi-spreading), and lip length (smaller than 1 cm vs. 1.4–1.8 cm length). Besides, *M. cleistogama* often shows cleistogamic flowers.

In Serra do Mar State Park, the species was found growing as an epiphyte in the understory of tropical rain forest (Ombrophilous Dense Forest), characterized by high humidity and low luminosity. This new record improves the knowledge of Orchidaceae in the Serra do Mar of São Paulo state and fills the gap in collections and floristic studies in this still unknown and species-rich area. Therefore, by the increment of studies in this region the number of new records and new species will undoubtedly raise (*e.g.*, Miranda & Menini Neto 2014; Miranda *et al.* 2014; Miranda *et al.* 2015; Pessoa *et al.* 2015; Smidt *et al.* 2016), considering that there is only a single comprehensive study about Orchidaceae in the north coast of São Paulo State (Ribeiro *et al.* 1994). Moreover, by this finding we contributed to the “Flora Fanerogâmica do Estado de São Paulo” ongoing project, in filling out the gaps in the distribution of Orchidaceae.

Cleistogamic events in *Mormolyca* are not exclusive of this species, as it is also seen in *M. pudica* (Carnevali & Tapia-Muñoz) M.A. Blanco, (Mario Blanco, personal communication). Therefore, further taxonomic studies are needed to elucidate the identity, distribution and diversification process of *Mormolyca* in Brazil,



Figure 2 – a-d. *Mormolyca cleistogama* – a,b. flower; c: habit; d. part of the plant with immature cleistogamic fruit. Bars: a,b = 0.5 cm; c = 4 cm; d = 2 cm (Marcusso *et al.* 462, HRCB 66407). Photo: Gabriel Mendes Marcusso.

which will allow us to understand potential scenarios of phenotypic plasticity, distribution and the occurrence of cleistogamic events in this genus.

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