

New records of Orchidaceae for the Northeast of Brazil

Novas ocorrências de Orchidaceae para o Nordeste brasileiro

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Palavras-chave:

Floresta Estacional Decidual. Mata de cipó. Orquídeas. Planalto da Conquista.

Keywords:

Deciduous Seasonal Forest. Liana forest. Orchids. Plateau of Conquista.

Resumo

As novas ocorrências de nove espécies de Orchidaceae pertencentes a seis gêneros: *Acianthera* Scheidw. (2 spp.), *Bifrenaria* Lindl. (1 sp.), *Grandiphyllum* Docha Neto (1 sp.), *Maxillaria* Ruiz & Pav. (2 spp.), *Pabstiella* Brieger & Senghas (2 spp.) e *Saundersia* Rchb. f. (1 sp.) são aqui registradas pela primeira vez em Poções, estado da Bahia, estendendo suas distribuições para o Nordeste do Brasil. Das nove espécies aqui apresentadas, seis estão ameaçadas de extinção. Os caracteres morfológicos diagnósticos das espécies são descritos resumidamente. Esses novos registros destacam a importância dos estudos em áreas subamostradas.

Abstract

The new occurrences of nine species of Orchidaceae belonging to six genera: *Acianthera* Scheidw. (2 spp.), *Bifrenaria* Lindl. (1 sp.), *Grandiphyllum* Docha Neto (1 sp.), *Maxillaria* Ruiz & Pav. (2 spp.), *Pabstiella* Brieger & Senghas (2 spp.) and *Saundersia* Rchb. f. (1 sp.) are documented here for the first time in Poções, Bahia State, extending their distribution to Northeast of Brazil. Of the nine species presented here, six are endangered. Diagnostic morphological characters of the species are briefly described. These new records highlight the importance of studies in under-sampled areas.

Introduction

In southern Bahia the forests changes from the littoral restinga forest to rain forest, and then to subdeciduous forest to the liana forest (seasonally dry deciduous forest) (Gouvêa et al., 1976). The liana forest in Bahia is restricted to the plateau of Conquista, southwestern Bahia, which is 800 to 1000 meters above sea level (Mori; Silva, 1979; Mori et al., 1981). It is characterized by trees that lose their leaves in the dry season, lianas are abundant, and form a network of stems of about 10 to 12 meters tall (Gouvêa et al., 1976; Mori et al., 1983).

Recent studies show that the flora of this region is poorly known, with insufficient number of samples for its knowledge (Caires et al., 2021). Studies carried out in the Plateau area have discovered new species (e.g. Fiaschi, 2005; Castro; Rapini, 2006; Leme, 2008; Luer; Toscano de Brito, 2011; Leme et al., 2014; Azevedo et al., 2018; Goldenberg et al., 2020) and new records (e.g. Marinho; Azevedo, 2011; Azevedo; Marinho, 2012; Dittrich; Souza, 2013; Santos et al., 2013; Souza et al., 2015; Rêgo; Azevedo, 2017; Azevedo et al., 2021; Moura; Caires, 2021; Caires et al., 2021). Even though, the Plateau area has been suffering big environmental degradation, most of this forest has been converted to pasture and coffee plantations. Therefore, studies in the region are still needed to know the local flora, in addition to demonstrating the need for conservation.

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Methods

Field expeditions were conducted at the municipality of Poçoês, Bahia State, Northeastern of Brazil. Samples were collected at Morrinhos district, from August 2019 to June 2020, and deposited at Mongoyós herbaria - HVC (acronyms according to Thiers, 2021). The known geographical distribution of the species is based on the occurrence data obtained at BFG (2018) and the Brazilian Flora 2020 (<http://floradobrasil.jbrj.gov.br>).

Results

Nine species were recently collected in Bahia State, at the municipality of Poçoês, being registered for the first time for the State of Bahia, extending their distributions to the Northeast of Brazil. Of which six species are endangered.

1. *Acianthera bragae* (Ruschi) F.Barros, Hoehnea 30: 183, 2003. \equiv *Physisiphon bragae* Ruschi, Bol. Mus. Biol. Prof. Mello Leitao 27(Sér. Bot.): 1–4, f. 1, 1970. Figure 1a

Identification. *Acianthera bragae* is characterized by the curved sepaline tube, formed by the fusion of the sepals until close to their apices.

Distribution and conservation. Endemic to Brazil, its occurrence was recorded only in the Atlantic Forest, in the Southeast and South regions of Brazil. During the development of this work, it was found for the first time for the Brazilian Northeast. This species was considered Vulnerable (VU) in the Red List of the flora of Espírito Santo State (Simonelli; Fraga, 2007; Fraga et al., 2019).

New records. BRAZIL, Bahia: municipality of Poçoês, 05/VI/2020, *Santos* 68 (HVC).

2. *Acianthera luteola* (Lindl.) Pridgeon & M.W.Chase, Lindleyana 16(4): 244, 2001. \equiv *Pleurothallis luteola* Lindl., Edwards's Bot. Reg. 27: Misc. 1, 1841. Figure 1b

Identification. Flowers are yellow with dark purple spots. Lateral sepals are connate, free only at the apex. The surface of the lip is papillose. It is fly-pollinated (Singer; Cocucci, 1999).

Distribution. In Brazil, it occurs in all states of the Southeast and South regions. Being registered here for the first time for the Brazilian Northeast.

New records. BRAZIL, Bahia: municipality of Poçoês, 12/VI/2021, *Santos* 79 (HVC).

3. *Bifrenaria charlesworthii* Rolfe, Bull. Misc. Inform. Kew 1894: 184, 1894. Figure 1c

Identification. *Bifrenaria charlesworthii* can be distinguished by the lateral sepals divergent to each other, and the lip is pubescent, with a yellow callus.

Distribution and conservation. Endemic to the Brazilian Atlantic Forest, it is mentioned only for the Southeast region (to Espírito Santo, Minas Gerais and Rio de Janeiro States), being registered here for the first time for the Northeast of

Brazil. This species was considered Vulnerable (VU) in the red list of the flora of Espírito Santo State (Fraga et al., 2019).

New records. BRAZIL, Bahia: municipality of Poçoês, 06/II/2020, *Santos* 66 (HVC).

4. *Grandiphyllum hians* (Lindl.) Docha Neto, Colet. Orquideas Brasil. 3: 75, 2006. \equiv *Oncidium hians* Lindl., Edwards's Bot. Reg. 24: Misc. 65, 1838. Figure 1d

Identification. *Grandiphyllum hians* is characterized by having flowers with greenish yellow sepals and petals with large brown macules. The lip is trilobed, whitish, with four calluses, two larger and two smaller, white with brown spots.

Distribution and conservation. An endemic species in Brazil, until now it was known only for the Southeast and South regions. It is mentioned here for the Northeast for the first time. This species was considered as Vulnerable (VU) (Martinelli; Moraes, 2013; Fraga et al., 2019) and Critically Endangered (CR) for the flora of the State of São Paulo (SMA, 2004).

New records. BRAZIL, Bahia: municipality of Poçoês, 19/IX/2020, *Santos* 70 (HVC).

5. *Maxillaria pachyphylla* Schltr. ex Hoehne, Bol. Mus. Nac. Rio de Janeiro, Bot. 12(2): 36, 1936. Figure 1e

Identification. *Maxillaria pachyphylla* can be identified by its linear-oblong leaves, that is flat to slightly conduplicate and very fleshy. Flowers yellow with red dots and lip red, slightly three lobed.

Distribution. At Brazil it is found in the Southeast and South regions. During the development of this study, it was found for the first time in the Northeast.

New records. BRAZIL, Bahia: municipality of Poçoês, 30/VIII/2019, *Santos* 49 (HVC).

6. *Maxillaria pumila* Hook., Bot. Mag. 64: t. 3613, 1837. Figure 1f

Identification. *Maxillaria pumila* can be recognized as a small plant with fleshy leaves, flowers red to brownish with yellow at the apex.

Distribution and conservation. In Brazil until then, it was mentioned for the North (Amazonas), Southeast and South regions, being mentioned here for the first time for the Brazilian Northeast. Species categorized as Endangered (EN) in the Red List of Flora of Espírito Santo State (Simonelli; Fraga, 2007) and as Vulnerable (VU) in the Red List of Flora of Paraná State (SEMA, 1995).

New records. BRAZIL, Bahia: municipality of Poçoês, 30/VIII/2019, *Santos* 51 (HVC).

7. *Pabstiella pomerana* Chiron & Xim.Bols. Richardiana 13: 212, 2013. Figures 2a-b

Identification. Flowers yellow, with sepals fleshy, pubescent internally, lateral sepals fully connate into a very briefly bifid at apex.

Distribution. So far, *Pabstiella pomerana* was known only for the state of Espírito Santo, in the southeastern region of Brazil (Chiron; Bolsanello, 2012).



Figure 1. a. *Acianthera braggae* (Ruschi) F.Barros. b. *Acianthera luteola* (Lindl.) Pridgeon & M.W.Chase. c. *Bifrenaria charlesworthii* Rolfe. d. *Grandiphyllum hians* (Lindl.) Docha Neto. e. *Maxillaria pachyphylla* Schltr. ex Hoehne. f. *Maxillaria pumila* Hook. Photos: M.G.Santos.



Figure 2. a-b. *Pabstiella pomerana* Chiron & Xim.Bols. c-d. *Pabstiella castellensis* (Brade) Luer. e-f. *Saundersia mirabilis* Rchb. f. Photos: a, e-f. M.G.Santos. b-d. C.O.Azevedo.

New records. BRAZIL, Bahia: municipality of Poções, 04/VI/2019, *Santos* 36 (HVC).

8. *Pabstiella castellensis* (Brade) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 112: 119, 2007. ≡ *Pleurothallis castellensis* Brade, Arch. Jard. Bot. Rio de Janeiro 9: 9, 1949. Figures 2c-d
Identification. It has whitish flowers with vinaceous stripes, yellowish petals and vinaceous lip with yellowish base.

Distribution and conservation. *Pabstiella castellensis* is registered only in the state of Espírito Santo, in the southeast region of Brazil, here record for the first time for the northeast of Brazil. This species has been assessed as Critically Endangered (CR) (Martinelli; Moraes, 2013). It was considered Locally Extinct (LE), according to the Red List of the flora of Espírito Santo State (Simonelli; Fraga, 2007).

New records. BRAZIL, Bahia: municipality of Poções, 19/IX/2020, *Santos* 72 (HVC).

9. *Saundersia mirabilis* Rchb. f., Bot. Congr. Lond. 120, 1866. Figures 2e-f

The genus *Saundersia* Rchb. f. is endemic to Brazil (Neubig et al., 2012) and as currently recognized, includes only two species: *S. mirabilis* Rchb.f. and *S. paniculate* Brade (Meneguzzo, 2020).

Identification. *Saundersia mirabilis* is characterized by having a dense pendent raceme, with hairy flowers (with dense indumentums). Brown sepals, white petals and lip white, with bilobulate apex.

Distribution and conservation. It is endemic to Brazil, with confirmed occurrence in all states in the Southeast of Brazil. During the development of this study, it was recorded for the first time for the Northeast region. *Saundersia mirabilis* is classified as Endangered (EN) (Martinelli; Moraes, 2013; Fraga et al., 2019).

New records. BRAZIL, Bahia: municipality of Poções, 11/VIII/2019, *Santos* 46 (HVC).

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Authorship Contributions

Conceptualization: COA, MGS. Data curation: COA, MGS. Formal Analysis: COA, MGS. Funding acquisition: COA. Investigation: COA, MGS. Methodology: COA, MGS. Project administration: COA. Resources: COA. Supervision: COA. Validation: COA, MGS. Visualization: COA, MGS. Writing – original draft: COA. Writing – review & editing: COA, MGS.

Conflict of interest

The authors declare that there are no conflicts of interest to report.

Data Availability

The complete set of data analyzed during the current study are presented in the body of the manuscript.

Ethical compliance

Not applicable.

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