

# *Phragmipedium anguloi*, a new species from Colombia belonging to *Phragmipedium* subgenus *Micropetalum* (Orchidaceae)<sup>a</sup>

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## Abstract

A new species belonging to the genus *Phragmipedium* is described and illustrated as *P. anguloi* from Colombia. Its affinities and differentiating characteristics are discussed. The new species is closely allied to *P. andreettae* P.J.Cribb & Pupulin but differs in having a tufted and compact appearance and various differences in its floral morphology.

## Résumé

*Phragmipedium anguloi*, une nouvelle espèce colombienne appartenant à *Phragmipedium* subgenus *Micropetalum* (Orchidaceae) – Une nouvelle espèce de *Phragmipedium* est décrite et illustrée sous le nom de *P. anguloi*. Ses affinités et ses caractères distinctifs sont discutés. Cette nouvelle espèce est étroitement apparentée à *P. andreettae* P.J.Cribb & Pupulin mais s'en distingue par son aspect compact, en touffe et par diverses différences dans sa morphologie florale.

## Introduction

Hitherto, 42 taxa have been described within the genus *Phragmipedium* Rolfe (1896) at the species level. Of those, one (*xerophyticum*) belongs to an autonomous genus (*Mexipedium*), two (*brasiliense* and *tetzlaffianum*) are

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man-made hybrids, one (*richteri*) is a natural hybrid, and thirteen are either synonyms or varieties of other taxa. Thus, this leaves us with a total of 25 species in 6 subgenera.

In this work, we describe an additional species that finds its place within subgenus *Micropetalum* (Hallier) Braem (2011). Until the beginning of 1981, this subgenus was monospecific, comprising only *Phragmipedium schlimii*, originally described by Heinrich Gustav Reichenbach (Reichenbach f., 1854) on the basis of plants collected by the Belgian explorer and horticulturist Jean-Jules Linden in Colombia. After the unexpected discovery of *Phragmipedium besseae* with its brilliant red flowers in 1981, the interest in the genus, especially in subgenus *Micropetalum*, skyrocketed and it does not surprise that since that time four further species have been described: *P. dalessandroi* Dodson & O.Gruss (1996) as a close relative of *P. besseae*, *P. fischeri* Braem & H.Mohr (1996), *P. andreettae* P.J.Cribb & Pupulin (2006) and *P. manzurii* W.E.Higgins & Viveros (2008), as close relatives of *P. schlimii*.

### ***Phragmipedium anguloi* Braem, Tesón & Manzur, sp. nov.**

*Haec species Phragmipedio andreettae Cribb & Pupulin affinis est sed plantarum habitu et florum partium morphologia coloreque differt. Labellum angustius, prolatum et distincte fenestratum est.*

Type: Colombia, Patio-Timbío valley, 1600 m, Department of Cauca, Roberto de Angulo Blum, s.n. (Holotype: FAUC).

Etymology: Named in honour of Roberto de Angulo Blum (1954-) professional architect and professor of Architecture and Natural Science at the Foundation University of Popayan, an ardent student of orchids with a special interest in taxonomy who discovered *P. anguloi* in 2007.

Description: *Phragmipedium anguloi* is an herbaceous plant, usually growing in leafy debris and humus pockets on rocky underground; the growths are clustered giving the plants a compact habit; the leaves are linear, acute, about 10-13 cm long by about 2.5 cm wide, uniformly green; the inflorescence is erect, 9-12 cm long, unbranched, generating several flowers in succession; the peduncle is green to brown and finely white-pubescent; the flower is 4.6-5 cm across and about 3.5 cm high; sometimes, a sterile bract is present, it is acute, 2-3 cm long and green; the fertile bracts are ovate-lanceolate, conduplicate, acute, 2 cm long by about 1 cm wide, green;

the ovary is about 5.3 cm long, green to brown, finely pubescent; the dorsal sepal is about 2 cm long by 1.3-1.5 cm wide, very pale rose to very pale green, with more or less distinct green venations; the synsepal is about 20 mm long by 15 mm wide, shorter than the lip, white to rose with distinct green venations, finely pubescent; the petals are ovate, 19-23 mm long by 15-19 mm wide, white to rose, with two blurred magenta spots at the upper basal margin base and very little magenta at the tips, finely white pubescent, the basal part on the inside villous; the labellum is deeply saccate, prolate, 18-20 mm long by about 11 mm wide, white to rose, the inside back wall with pink to magenta spots and with a yellow vertical stripe, the apical parts of the rim dark pink to dark magenta with striations of the same colour directed towards the inside of the pouch, the outside finely white pubescent, the inside basal section villous, the basal half of the pouch with well-developed and distinct fenestrations; the staminode is more or less ovate to rhomboid, about 7 mm long by 5 mm wide, white with a magenta spot or two parallel magenta lines at the apex and a yellow centre, in some cases, those magenta lines continue as yellow lines towards the middle of the staminode; the column is bulky. Fig. 1 & 2.

Distribution: Hitherto the species is known only from the type locality (Fig. 3).

## Discussion

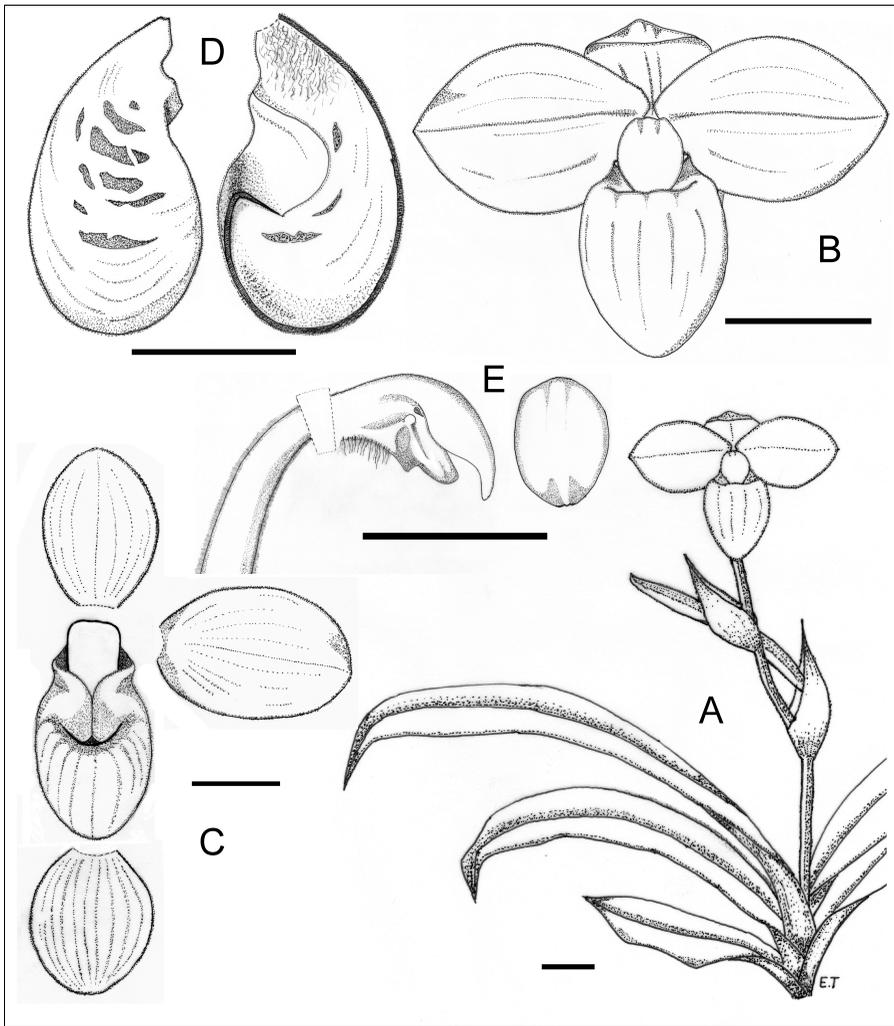
*Phragmipedium anguloi* is very closely related to *P. andreettae*. It differs, however, in quite a number of characteristics:

- (1) The plants of *P. anguloi* are much compact.
- (2) The staminode morphology is very different.
- (3) The pouch morphology is different showing very distinct and well-developed fenestrations.

From all other entities of the *P. schlimii*-complex (*P. schlimii*, *P. fischeri*, *P. manzurii*) *P. anguloi* differs distinctly by:

- (a) the different pouch morphology (elongated versus calceolate),
- (b) the clearly different staminodal morphology.

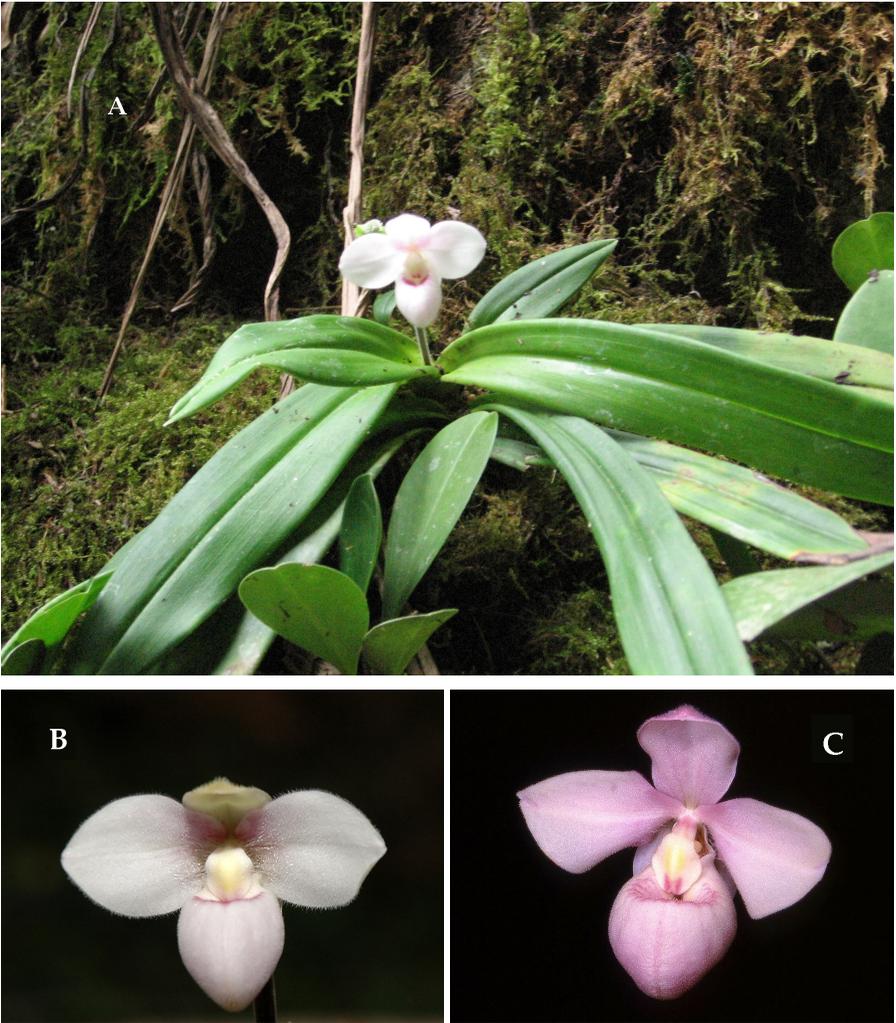
It has been suggested that *Phragmipedium anguloi* is a natural hybrid between *P. andreettae* and *P. schlimii* or an unnamed species more closely related to the latter species, but this hypothesis, which is only based on guesswork, may be ruled out as the nearest populations of *P. schlimii* are in the Department of Valle de Cauca, more than 300 km away and the nearest



**Fig. 1 : *Phragmipedium anguloi***

A- Plant Habit. B- Flower. C- Flower dissection. D- Lip, lateral and internal views. E- Column, lateral view and staminode frontal view. Scale Bars = 10mm. Drawn by E. Tesón.

populations of *P. andreettae* are in the Departments of Cauca Putumayo and Nariño, more than 150 km away. Also *P. manzurii* may be ruled out as a putative parent of the imaginary hybrid as the nearest populations of this species are to be found more than 500 km away in the Department of Santander. Therefore, we consider *Phragmipedium anguloi* to be an autonomous species.



**Fig. 2 : *Phragmipedium anguloi***

A. in situ (ph. Roberto Angulo Blum) – B. pale flower (ph. Eliseo Tesón) – C. full rosé flower

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**Fig. 3 : Distribution map**

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