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Novitiae florae cubensis No. 35

MAITÉ SERGUERA NIÑO[1*] & MARGARITA SÁNCHEZ LOSADA[1]

A new natural hybrid, *Bletia ×ekmanii (Orchidaceae)*, from Cuba

Abstract

Serguera Niño M. & Sánchez Losada M.: A new natural hybrid, *Bletia ×ekmanii (Orchidaceae)*, from Cuba [Novitiae florae cubensis 35]. – Willdenowia 41: 107–111. – Online ISSN 1868-6397; © 2011 BGBM Berlin-Dahlem. doi:10.3372/wi.41.41112 (available via http://dx.doi.org/)

The natural hybrid *Bletia ×ekmanii (B. patula × B. purpurea)* is described and illustrated. Hybrid plants have a semi-hypogeous subglobose corm, incurved petals enclosing the column, flowers of intermediate size between those of the parental species, a trilobed lip of almost the same size as the lateral sepals with obtuse lateral lobes. Flowers of the hybrid resemble those of *B. purpurea* but are larger and with a patent lip as in *B. patula.* The hybrid was found along the roadside from Palenque to Bernardo town, Guantánamo Province, eastern Cuba.

Additional key words: *Bletia purpurea, Bletia patula,* terrestrial orchids, hybridisation, West Indies

Introduction

Among phanerogamous families, *Orchidaceae* are highly successful (Kull & al. 2006), displaying numerous pollination systems with extraordinarily high levels of interspecific diversity in associated floral traits (Cozzolino & al. 2006). *Bletia* is a neotropical terrestrial orchid genus of about 40 species, with six species on the Antilles according to Nir (2000), all of which occur in Cuba. However, recent changes to our knowledge resulted in the transfer of two species of *Bletia* to *Basiphyllaea: Basiphyllaea carabiaiana* (L. O. Williams) Sosa & M. A. Díaz and *B. volubilis* (M. A. Díaz) Sosa & M. A. Díaz (Díaz & al. 2001).

The four *Bletia* species now known from Cuba are *B. antillana, B. florida, B. patula* and *B. purpurea*. *B. purpurea* is the most widespread species of the genus, ranging from Florida and Mexico to South America and the West Indies; in Cuba it is abundant in all the country, being found frequently growing along roadsides in full sunlight. *B. patula* is a relatively large, terrestrial orchid, growing in limestone soils at low to middle elevation, from southern Florida to Cuba, Hispaniola and Puerto Rico; this species occurs in northeastern Cuba, in the Nipe-Sagua-Baracoa massif, where it grows on exposed limestone banks and cliffs or on rocky mountain tops, and sometimes along roadsides. *B. florida* is restricted to Cuba, Jamaica and Hispaniola, but in Cuba it is currently known only from Cuchillas de Moa in Holguin (Mújica-Benítez 2003). *B. antillana* is restricted to northeastern Cuba, growing in the mountains of Holguin and Guantánamo provinces, usually on river banks or in temporarily flooded zones, on serpentine soils (Acuña

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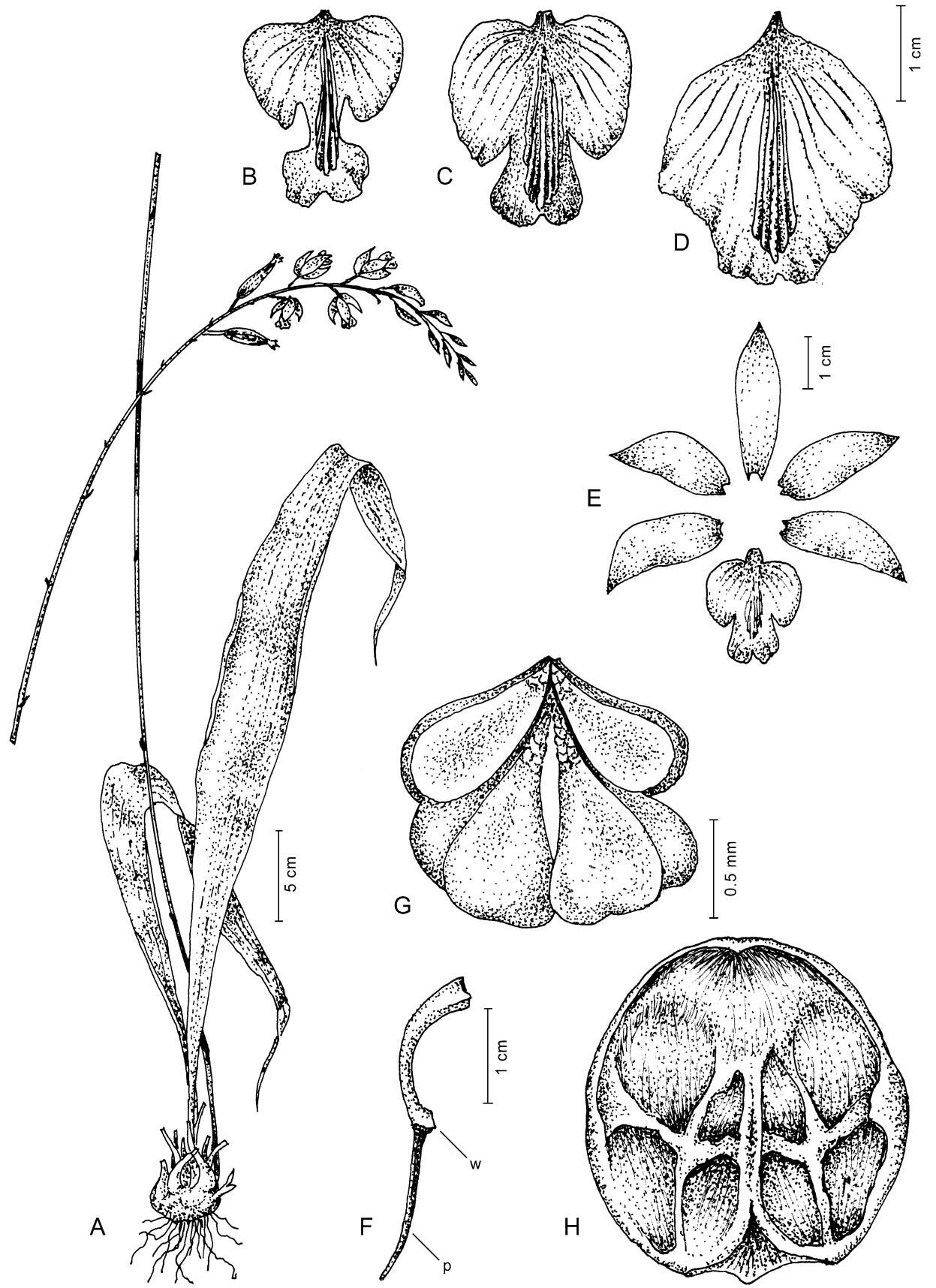


Fig. 1. *Bletia ×ekmanii* – A: habit; C: lip; B: lip of parental species *B. purpurea;* D: lip of parental species *B. patula;* E: floral elements; F: column (w = wings) on pedicel (= p); G: pollinia; H: anther cap (view from inside). – Scale bars: A = 8 cm, B–D = 1 cm, E = 1 cm, F = 1 cm, G = 0.5 mm. – Drawing by M. G. Caluff.

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1939; León 1946; Garay & Sweet 1974; Ackerman 1995; Sosa & Díaz-Dumas 1997, in press; Nir 2000; Palestina & Sosa 2002; Llamacho & Larramendi 2005).

We discovered a large mixed population of *Bletia patula* and *B. purpurea* in 2004, along the road from Palenque to Bernardo, in Guantánamo Province. Both species bloom from March to June in this area. We found 46 plants (close to 20 % of the population) with intermediate characteristics between *B. patula* and *B. purpurea.* We collected a few of these intermediate plants and cultivated them in the Santiago de Cuba's Fern Garden. On the basis of field work and a comparison between the plants cultivated ex situ we describe the intermediate plants as a wild natural hybrids new to science.

Bletia* ×*ekmanii Serguera & Sánchez Losada, **nothosp. nov.**

Holotypus: Cuba, Guantánamo Province, Yateras, Loma "El Cilindro", camino desde Palenque a Bernardo, en una pendiente de roca caliza, en vegetación secundaria, a pleno sol, conviviendo con *B. patula* y *B. purpurea,* 450–500 m, 5.5.2010, *M. Serguera & M. Sánchez s.n.* (BSC 6430; isotype: B). – Fig. 1A, C, E–H.

Planta humicola, media inter parentes *(Bletia patula* et *B. purpurea)*. Differt a *B. patula* petalis recurvis columnam amplectentibus (nec rectis), labello in media parte cristis flavis (nec albidis) ornato, lobis lateralibus oblongo-ellipticis (nec semiovatis), columna gynostemii arcuata (nec recta) basi (nec media in parte) roseo-bialata. *B. purpurea* discedit labello reflexo (in nostra porrecto apice subrecurvo), lobis lateralibus ovatis, et columna gynostemii in parte distali alata.

Terrestrial perennial herb, erect, 35–41 cm tall; *corm* semihypogeous, erect, subglobose, 2.5–4 cm long, 2–3.8(–4.5) cm diam., covered by sheathing scarious bracts, with inconspicuous internodes; *roots* slender, velamentous. *Leaves* plicate, 2–4(–5), present or absent during flowering, growing from the corm apex, usually annually deciduous, linear-lanceolate, acuminate, basally articulated, 34–68 cm long, 1.5–5.5 cm wide. *Inflorescences* 1(–2), lateral, racemose, with up to 38 flowers, long-pedunculate, up to 50–140 cm long; *floral bracts* ovate-triangular, acuminate, pale green, in spiral arrangement, recurrent, 3.5–8 mm long, 1.5–4 mm wide. *Flowers* showy, erect, pale purple to pink, dorsal surface darker than the ventral one, 2–3 cm long not including the pedicellate ovary, 2.8–4.4 cm wide; *dorsal sepal* ovate-lanceolate, truncate at the base, apex reflexed, acute, pale purple to pink, 22–30 mm long, 6.3–8.1 mm wide; *lateral sepals* obliquely ovate-lanceolate, spreading, apex reflexed, acute, connate at the base, purple, the ventral surface in the lower half darker than in the upper half whitish at the base, 20–27 mm long, 5.7–9.5 mm wide; *petals* pale pink to rose purple, darker at the apex, ovate to elliptic, acute, falcate, enclosing the column and the lateral lobes, 18–28 mm long, 6–9.7 mm wide; *lip* trilobed, ovate, sessile, purple, the base cordate, whitish, 1.7–2.4(–2.7) cm long, 1.3–2 cm wide, lateral lobes oblong-elliptic, with several rose-purple veins, apex obtuse, incurved, semi-enclosing the column, 10.5–15.2 mm long, 4.6–6.5(–8) mm wide, sinuses short, 1–4.5 mm long, 1–2.3 mm wide, mid lobe suborbicular, margin crispate-undulate, apex emarginated, slightly curved downward, 7.5–11.2 mm long, 5.1–10.4 mm wide, disc with 5(–7) parallel yellow crests extending onto the mid lobe, up to 1 mm deep, the central crest longest, undulate; *column* arched, winged, with two pink wings near the base, 1.8 mm wide, whitish, 10–24 mm long; *ovary* reddish, pedicellate, pedicel 10–24 mm long; *stigma* translucent, entire; *anther* rose, incumbent, fleshy, round-

Table 1. Comparison of vegetative and floral traits among *Bletia* ×*ekmanii* and its parental species *B. purpurea* and *B. patula*. All measures are in [mm] and are taken from plants in the field.

Character	*Bletia purpurea*	*Bletia* ×*ekmanii*	*Bletia patula*
Number of leaves	(1–)2–3	2–3(–1)	2–5
Leaf width	15–32	15–55	40–80
Flower length	13–20	20–30	30–40(–50)
Flower width	12–22	28–44	30–48
Dorsal sepal length	16–21	22–30	28–37
Dorsal sepal width	3.3–6.8	6.3–8.1	4.7–9.4
Lateral sepal length	12–19	20–27	21–34
Lateral sepal width	5.5–9.3	5.7–9.5	7.2–9.5
Petal length	13–18	18–28	25–38
Petal width	5.7–7.8	6–9.7	6–11
Lip length	10–15	17–24(–27)	26–38
Lip width	11–13	13–20	16–30
Column length	8–10	10–24	18–22(–24)
Pedicel length	5–11	10–24	11–33
Fruit length	2–3.7	2.2–5	3.5–6.6(–7.5)

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ed, eight celled, 1.5–2.4 mm long, 1.8 mm wide; *pollinia* 8, subsessile, waxy, yellowish, 0.7–0.8 mm long, 0.4–0.5 mm wide, on a slender, elongate viscidium. *Fruits* cylindric, erect and pale green when young, later pendent and yellowish, 2.2–5 cm long, 3–9 mm wide; *seeds* slender, brown, 0.3–0.7 mm long.

Etymology. — This new natural hybrid is dedicated to Erik Leonard Ekman (1883–1991), an eminent Swedish botanist who studied the Cuban flora in 1914–24.

Delimitation. — Bletia ×ekmanii is recognised by its inconspicuous corm internodes, medium pale purple to pink flowers (2–3 cm long, 2.8–4.4 cm wide), the crispate-undulate emarginate lip, which is almost of the same size as the lateral sepals (Fig. 1C, E), and the basally winged column. The flower of the hybrid resembles that of *B. purpurea* but is larger, with the patent lip as in *B. patula*. The column in the hybrid is arcuate (Fig. 1F), similar to *B. purpurea,* but with two pink basal wings (these are distal in *B. purpurea,* erect and in the middle of the column in *B. patula*). The differences between the hybrid and *B. patula* and *B. purpurea* are summarised in Table 1.

The plants cultivated in the Fern Garden of Santiago de Cuba are larger than those in the wild population. The differences may be due to conditions of cultivation, or they may also have a genetic basis as suggested for size variants of another natural orchid hybrid (Morales 2002).

Distribution, habitat and flowering. — NE Cuba, Guantánamo Province, Yateras Municipality, Loma "El Cilindro". Terrestrial on rocky, limestone, sunny, humid slopes and cliffs, 450–500 m elevation, in open secondary forest. Infrequent, known only from a single locality.

The vegetation where *Bletia ×ekmanii* occurs is composed principally of low and sparse shrubs, herbs and grasses; thus, the orchid inflorescences usually rises above it and is easily seen. Other orchids growing together are: the parental species *B. patula* and *B. purpurea; Habenaria monorrhiza* (Sw.) Rchb. f. and the naturalised invasive *Spathoglottis plicata* Bl. The calciphyllous fern *Anemia adiantifolia* (L.) Sw. is a very common species at the site.

The hybrid flowers from March to June, at the same time as its parental species. Both *Bletia patula* and *B. purpurea* offer no pollinator rewards and both are considered to be food deceptive plants. Neither one of them is considered to be a threatened species in Cuba (Llamacho & Larramendi 2005).

In the mixed population we studied, a few pale pink and white-flowered morphs of *Bletia patula* were observed dispersed on the population. Such colour polymorphisms also occur in Puerto Rico and the Dominican Republic (Ackerman 1995; Ackerman & Carromero 2005). *B. purpurea* in Dominican Republic (Jiménez 1960) also shows colour variation; in our studied site few plants with pale pink colour were observed. Such variation can be adaptive in deception-pollinated species (Ackerman & Carromero 2005; Cozzolino & Widmer 2005) and interspecific hybridisation does increase population variation which may result in new combinations of traits that may stabilise or add to population variation of one or both of the parental species.

Although the occurrence of interspecific orchid hybrids are often restricted locally (Luer 1975; Cozzolino & Aceto 1994; Cozzolino & al. 1998; Pellegrino & al. 2000), some do become widespread and stabilised (Catling & Catling 1997; Arft & Ranker 1998; Bullini & al. 2001). It remains to be seen whether *B. ×ekmanii* will become established and spread or just an ephemeral phenomenon.

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