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Vanilla atropogon



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Abstract: *Vanilla atropogon* a new species from Khanh Hoa Province, Vietnam is described.

Keywords: *Vanilla atropogon*, *Orchidaceae*, Khanh Hoa Province, Vietnam

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A New *Dendrochilum* Species (Orchidaceae) from the island of Samar, Philippines

Jim Cootes and Ronny Boos

Abstract: A visit to the local mountains, by the second author (RB), has revealed a *Dendrochilum* species, which we believe is new to science. A thorough search of the literature, for the Philippines and neighbouring countries, has not revealed any likely matches. We propose the name *Dendrochilum diabloviride* sp. nov. Cootes and Boos, because of the green colouration of the bloom and the two horn-like projections on the labellum.

Dendrochilum diabloviride Cootes and Boos sp. nov.

TYPE: Cultivated in Leyte, flowering in August 2010, in the Ronny Boos collection: holotype originating from the island of Samar, Philippines.

Holotype: Boos 02/2011 PUH14629 Philippines, Samar.

Plant Description:

Growth habit: upright; sympodial, epiphytic herb. **Pseudobulbs:** clustered on a short rhizome; ovate, to 2 cm long by 1 cm in diameter; unifoliate; a papery sheath surrounds the new pseudobulb, which then withers into a few fibres. **Leaves:** blade is narrowly lanceolate, from 20 to 50 cm long by 2 cm wide; petiole 4 to 7 cm long by 2 mm wide, channelled; distinct rib along the length of the leaf blade. **Inflorescences:** appear with the new growth; peduncle 12 cm long by 0.75 mm in diameter; rachis to 20 cm long by 1 mm in diameter, bearing about 70, 12 mm wide blooms, which start to open from the basal end. **Floral bracts:** 5 mm long by 1 mm wide, coloured brown. **Flower Colour:** bright green, odourless. **Dorsal sepal:** narrowly lanceolate, apex acute, slightly ridged centrally, 6 mm long by 2 mm wide. **Petals:** narrowly lanceolate, apex acute, 6 mm long by 1.8 mm wide. **Lateral sepals:** narrowly lanceolate, apex acute, distinctly ridged centrally, 6 mm long by 2 mm wide. **Labellum:** circular (when flattened) about 2 mm in diameter; in the centre of the labellum there are two upward-pointing horn-like projections. **Pedicel:** 2 mm long by 0.8 mm in diameter. **Ovary:** 2 mm long by 1 mm in diameter, coloured brown. **Column:** stout, triangular about 1 mm long by .75 mm wide, with two downward pointing stamens.

Habitat and Distribution: *Dendrochilum diabloviride* is endemic to the Visayan island of Samar, in the southern Philippines. The newly described species was found growing in brightly lit forest, at around 400 metres elevation.

Dendrochilum diabloviride is a member of the section *Platyclinis* (Bentham) Pfitzer.

Etymology: The specific epithet refers to the green colouration of the flowers and the two green horn-like projections on the labellum. The working name for this species was the ‘Green Devil.’

Acknowledgements: Ronny Boos wishes to thank Gerry Domingo for accompanying him, on various exploratory trips around the islands of the Visayan Sea, in the central Philippine archipelago.

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Figure 1: Showing the feature for which the plant is named - the green flower and the horns on the labellum.



Figure 2: Habit of the inflorescence.



Figure 3: The flowers.

A new *Malleola* species (Orchidaceae; Aeridinae) from the Philippines

Ronny Boos and Jim Cootes

Abstract: A visit to an orchid and ornamental plant nursery on the island of Negros Occidental, in the central Philippine archipelago, has revealed a *Malleola* species, which appears to be unknown to science. A search of the relevant literature, for the Philippines and her neighbouring countries, has been made and no similar species has been found. Therefore this species is hereby described as new.

Malleola reflexa Boos and Cootes *sp. nov.*

TYPE: Cultivated in Leyte, flowering in December 2011, in the Ronny Boos collection: holotype originating from northern Negros Occidental, Philippines.

Holotype: Boos 03/2011 PUH14630 Philippines, Negros Occidental.

Growth habit: monopodial epiphytic herb, pendulous and slightly ascending towards apices. **Roots:** appearing basally, glabrous, terete to flattened, 3 mm in diameter. **Stem:** almost terete in cross section, to 2 mm in diameter and up to 20 cm long. **Leaves:** alternate, dark green, ensiform, subsessile, leathery, distinct ridge running lengthwise, apex acuminate, 6 to 12 cm long by 7 mm across at its widest point. **Internodes:** 1 cm long. **Inflorescence:** appearing from near the distal ends of the stems and opposite side of the leaf nodes, pendulous without branching, 2 to 4 cm long by 2 mm in diameter, bearing up to 40 flowers facing all directions. **Floral bracts:** papery in texture, acute, brown in colour, 2 mm long by 0.5 mm wide. **Flower:** 6 mm long by 4 mm wide, facing all directions; opening from the base of the inflorescence; no discernable scent; sepals and petals extremely reflexed on the onset of anthesis, but bending forward with age. **Flower colour:** sepals and petals are yellow; labellum base colour white with two reddish brown stripes in the throat; midlobe with purple markings inside; column white with a purple blotch on each side. **Dorsal sepal:** elliptic, 3 mm long by 1.5 mm wide. **Petals:** narrowly elliptic, 2 mm long by 1 mm wide. **Lateral sepals:** subspathulate, 3 mm long by 1.5 mm wide. **Labellum:** cylindrical and vaguely three-lobed; sidelobes barely discernible, low and very wide, with edges marginate to emarginate and broadly rounded to truncate; midlobe stoutly finger-like, forward-pointing, with an obtuse tip. **Column:** semi-terete at the base and squarish at the apex, rostellum prominent and pointing forward, 2 very short and broadly triangular stielidia pointing forward. **Anther cap:** circular, concealing 2 pollinia. **Spur:** semi-circular and bag-like behind the labellum, slightly constricted at the base and reflexed at 90°, colour greenish yellow, 2 mm long by 1 mm in diameter. **Pedicel and Ovary:** 3 mm long by 0.5 mm in diameter, channeled and twisted, with brown spots.

Habitat and distribution: *Malleola reflexa* is endemic to Negros Occidental, and is found in the northern mountain ranges, at ca. 900 metres altitude. At least 20 flowering plants were observed, by the senior author, in May 2011 and again in November 2011.

Discussion: *Malleola reflexa* Boos and Cootes, is related to *Malleola constricta* Ames, but it differs in its much longer and narrower leaves; extremely reflexed floral segments; the differently shaped, rounded and more lower positioned midlobe; the reddish brown markings in the throat of the labellum. The flowers do not twist as much on their

pedicel, as the blooms of *Malleola constricta* Ames. This species, possibly, only grows at higher elevations.

Etymology: The specific epithet refers to the strongly reflexed floral segments of this species.

Acknowledgements: Thanks to Joseph Sagemueller, who brought this species to our attention; and for his hospitality during a stay by the senior author (RB). Our sincere thanks to Wally Suarez for his suggestions.

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The inflorescence of *Malleola reflexa*, showing the reflexing floral segments, for which this species is named.



Plant habit



Close-up of the flower of *Malleola reflexa* Boos and Cootes

Vanilla atropogon, a new species from Vietnam

André Schuiteman, Leonid Averyanov and Romana Rybková

Introduction

Vanilla is a genus of about 100 species (Cameron, 2011) that is found throughout the tropics. It is best known as the original source of the vanilla flavour, which is extracted from the fermented fruits of only three commercially cultivated taxa (two species and a hybrid). Most of the other species are not in general cultivation and many are poorly known. This is mainly because they often appear to be shy-flowering, while in addition the flowers last less than one day, so that *Vanilla* species are often missed by collectors. Herbarium specimens are frequently difficult to interpret because the fleshy flowers become extremely flimsy when dried. Almost all species, with only one exception, are vines that climb over trees, shrubs and rocks. Some may become 20 m or more long.

In Vietnam only five species of *Vanilla* are known (including two which have recently been segregated in the genus *Miguelia* Aver.; Averyanov, 2011). Below we describe a sixth species which is not closely related to any of these.

Vanilla atropogon Schuit., Aver. & Rybkova, **sp.nov.**

Type: Southern Vietnam, Khanh Hoa Province, Hon Ba Nature Reserve, 250 m, flowered January 2013, *Prague Botanic Garden cult.* (Rybková et al.) 2013.00920 (holotype K; isotypes PRG, VNM, all spirit material).

Epiphytic or lithophytic, creeping or climbing, branching vine to 15 m long. Stem fleshy, 5–9 mm diam., internodes 3.5–9.5 cm long. Roots 1.5 mm diam. Leaves shortly petiolate; petiole c. 7 by 4 mm, with incurved margins; blade narrowly ovate-elliptic, 12–17 by 4.2–4.7 cm, acuminate, carnose; terminal leaf at base of inflorescence much smaller, c. 3.5 cm long. Inflorescence terminal, subsessile, 10–15 cm long, with 10–23 spirally arranged flowers, c. 9 mm apart, opening in succession; rachis slightly flexuose, c. 7 mm diam. Floral bracts oblong, 6–12 mm long, acute, slightly cucullate. Pedicel-with-ovary straight or slightly curved, 3–4 cm long, terete, green, pure white in basal 4 mm. Flowers opening widely, c. 4.5 cm wide, foul-smelling; sepals yellowish green, white at the very base; petals paler green; lip ground colour white tinged pale green, at c. 1.2 mm from the margin with a broad band of irregular, confluent maroon blotches; the very margins finely edged with maroon; in the central part, but not in front of the central callus, with smaller maroon spots and stripes; on either side of the central callus with a series of short, transverse maroon lines; hairs on the mid-lobe maroon in their basal half, pinkish white in their apical half; central callus-like patch of scales whitish grading to pinkish purple towards the lip apex; column and anther whitish. Dorsal sepal narrowly oblong-elliptic, 3.1 × 0.9 cm, concave, carnose, obtuse. Lateral sepals elliptic, 2.8 × 1.1 cm, concave, carnose, obtuse. Petals elliptic, 3.2 × 1.2 cm, outside keeled along the midvein, thinner textured than the sepals, apical margins slightly erose, obtuse. Lip 3-lobed; basal part narrow, adnate to the sides of the column, 1.2 cm long, forming a tubular structure; free part 2.3 × 2.4 cm when flattened; lateral lobes semi-orbicular, 1.0 cm long, margins erose, apex broadly rounded, at the base with numerous, irregular, parallel, low ridges at an acute angle to the median line, between the lobes with an oblong, 5.5 mm long central callus consisting of a patch of numerous pilose-fimbriate, backwards-pointing, imbricate scales; mid-lobe semi-orbicular, 1.3 × 1.5 cm, margins crispate, apex truncate, emarginate, in the centre with a large patch of numerous, c. 4 mm

long, subulate hairs. Column slender, slightly curved towards the apex, 1.7 cm long, glabrous; rostellum truncate, fleshy; clinandrium with erose margins and two short steldia. Anther hood-shaped, glabrous, 3 × 2.5 mm. Fruit not seen.

Etymology. From *atro-*, dark, and *pogon*, beard, referring to the dark, hairy lip.

Ecology. In primary and secondary evergreen broad-leaved forest on granite, close to streams and waterfalls, always growing in partial shade, altitude 180–300 m. Flowering observed January–May. Rare. The primary forest along streams is composed mainly of *Dipterocarpus alatus*, *Elaeocarpus darlacensis*, *Vatica cinerea*, *Irvingia malayana*, *Hydnocarpus* cf. *clemensorum*, *Parkia* cf. *sumatrana*, *Diospyros buxifolia*, *Barringtonia* cf. *augusta*, *Barringtonia* cf. *macrostachya*, *Ficus* sp. and *Podocarpus neriifolius*. At the very edge of the riverbank, where *Vanilla atropogon* primarily occurs, the vegetation is composed of *Pandanus* sp., *Fagraea auriculata*, various *Calamus* species, *Plectocomia elongata*, *Dillenia tetrapetala*, lianas such as *Bauhinia* sp., *Entada* sp., *Gnetum* sp., *Flagellaria indica*, *Ampelopsis* sp., *Ancistrocladus* sp. and *Jasminum* sp. Several Orchidaceae occur in this habitat, e.g. *Arundina caespitosa*, *Erythrorchis altissima*, *Trias nasuta*, *Trichoglottis* cf. *retusa*, *Bulbophyllum* cf. *macranthum*, *Cephalantheropsis* cf. *gracilis*, *Dendrobium pachyphyllum* and other *Dendrobium* spp., *Eria lasiopetala*, *Cleisostoma* sp. and *Vanilla* aff. *yersiniana*.

Distribution. Vietnam (Khanh Hoa Province). Endemic.

Other collection examined. Hon Ba Nature Reserve, *Ho Ngoc Quynh s.n.*, April 2012 (herbarium of the Ho Chi Minh City Agriculture - Forestry University; LE [photo]).

Notes. *Vanilla atropogon* is perhaps most closely related to *V. borneensis* Rolfe (syn. *V. pilifera* Holttum), which has flowers that are similar in size, shape and ornamentation. In *V. borneensis* the patch of hairs on the mid-lobe is much denser, with hairs of almost uniform thickness (versus hairs strongly narrowing towards the apex in *V. atropogon*) and this patch is almost or entirely contiguous with the central patch of scales; in *V. atropogon* the patch of hairs and the callus-like patch of scales are well-separated; in *V. borneensis* the basal part of the lip is much broader and is provided with two knob-like calli, which are lacking in *V. atropogon*. The colour of the lip is quite different in *V. borneensis*: white with pink or purple veins and pink hairs. Finally, the inflorescence of *V. borneensis* carries 5–12 (*V. atropogon*: 10–23) flowers.

The unusual colour of the lip of *V. atropogon* in combination with the bad smell of the flowers suggests that it may be pollinated by flies. Unfortunately, nothing is known about the pollinators of other Asian species, but most are likely to be bee pollinated, as has been observed in similar-looking tropical American species (Cameron, 2011).

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Fig. 1. *Vanilla atropogon* in situ. Photo: Romana Rybková.



Fig. 2. *Vanilla atropogon*, inflorescence. Photo: Romana Rybková

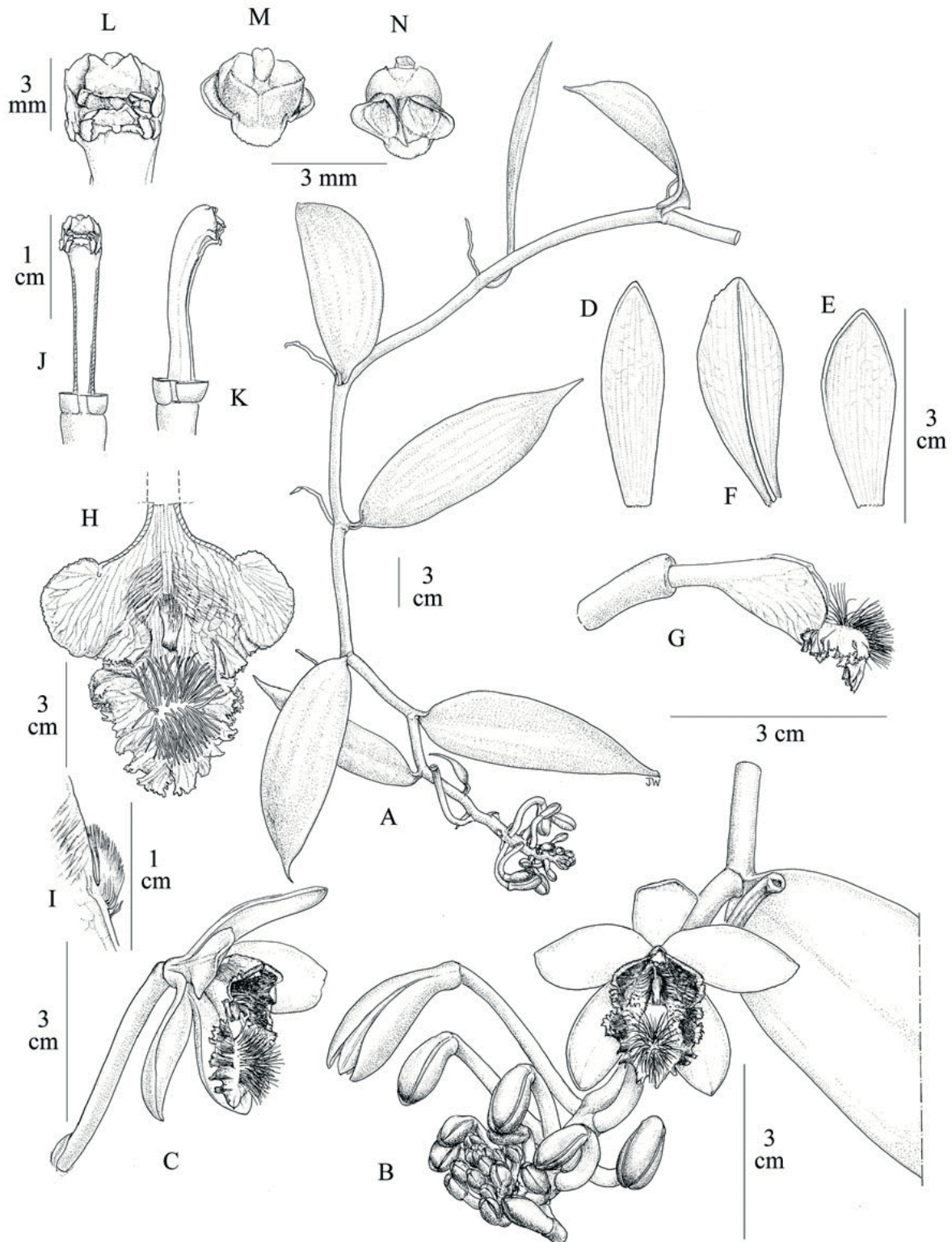


Fig. 3. *Vanilla atropogon*. A, habit; B, inflorescence; C, flower; D, median sepal; E, lateral sepal; F, petal; G, lip and ovary; H, lip; I, side view of central callus; J & K, column; L, top of column; M & N, anther. A, B and C after photographs by Romana Rybková, others after the type specimen. Drawing: Juliet Beentje.



Fig. 4. Habitat of *Vanilla atropogon*, Hon Ba Nature Reserve. Photo: Romana Rybková



Fig. 5. *Vanilla borneensis*. Photo: André Schuiteman