

## ***VANILLA YERSINIANA* (ORCHIDACEAE), A NEW RECORD FOR PENINSULAR MALAYSIA**

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### **ABSTRACT**

MAT ESA, M. I., NORDIN, F. A., GO, R. & RAFFI, A. 2021. *Vanilla yersiniana* (Orchidaceae), a new record for Peninsular Malaysia. *Reinwardtia* 20(2): 51–55. — The genus *Vanilla* Plum. ex Mill. from Peninsular Malaysia is now enriched with the discovery of a newly recorded species, *Vanilla yersiniana* that made up its regional diversity to eight taxa. This species was documented from two adjacent secondary lowland forests in Perak; further south to the southern tail of Thailand. This paper describes the first record of *V. yersiniana* in Peninsular Malaysia with some highlights of its morphology and ecology. The data presented will add to the present state of knowledge on the species botanical profile.

**Key words:** Checklist, Malaysia, Orchidaceae, *Vanilla*.

### **ABSTRAK**

MAT ESA, M. I., NORDIN, F. A., GO, R. & RAFFI, A. 2021. *Vanilla yersiniana* (Orchidaceae), rekaman baru dari Semenanjung Malaya. *Reinwardtia* 20(2): 51–55. — Marga *Vanilla* Plum. ex Mill. dari Semenanjung Malaya kini diperkaya dengan penemuan jenis baru yang tercatat, *Vanilla yersiniana* yang membentuk keragaman regionalnya menjadi delapan taksa. Jenis ini didokumentasikan di dua hutan dataran rendah sekunder yang berdekatan di Perak; lebih jauh ke selatan ke ekor selatan Thailand. Makalah ini menjelaskan catatan pertama *V. yersiniana* di Semenanjung Malaysia dengan beberapa sorotan morfologi dan ekologi. Data yang disajikan akan menambah pengetahuan tentang profil botani terkini dari jenis ini.

**Kata kunci:** Daftar jenis, Malaysia, Orchidaceae, *Vanilla*.

### **INTRODUCTION**

Orchidaceae is a fascinating plant family that allures researchers globally to study their systematics, ecophysiology and economical values. The current research trend on orchids in Malaysia focuses largely on the enumeration of the family composition. It is a never-ending task; with a relatively vast and unexplored forested land, Malaysian orchid's inventory is most likely far from being complete. To date, there are approximately 3000 orchid species recorded throughout Malaysia (Ong *et al.*, 2017; Juiling *et al.*, 2020;

Forest Department Sarawak, 2021). This figure is contributed by the series of novo discovery as well as the documentation of new regional record, which is also modelled by the local genus *Vanilla* – the subject matter of this paper. Generally, the genus *Vanilla* of Malaysia is represented by ten species of which seven of them can be found in Peninsular Malaysia (Ong, 2018; Raffi, 2019). However, the genus account in the peninsula is now enriched with the discovery of a species with distinct morphological characters from two adjacent localities in the state of Perak. Its initial population was spotted in January 2021 with indivi-

duals bearing short sterile inflorescences (indicators of post-anthesis and unsuccessful fertilization) and the species identity was revealed two months later when three individuals were found flowering. This species was preliminary referred as *V. albida* Blume due to its high morphological resemblance but is later confirmed as *V. yersiniana* Guillaumin & Sigaldi based on the taxonomic description and drawing by Averyanov (2011) as well as its matched distribution pattern that is centred in Indochina. In this paper, we present the new record of *Vanilla* species for Peninsular Malaysia, amended its morphological descriptions and provide important notes on the botanical profile. These data will add to the current knowledge on the genus from Malaysia, particularly from the peninsular region.

## MATERIALS AND METHODS

In situ observations were conducted on the individuals of *Vanilla* from two localities in Lenggong, a valley located in the northern part of Perak, from January to July 2021. Flowering specimens were collected, dissected, preserved using the standard herbarium technique of Bridson and Foreman (1998) and deposited in the Herbarium of School of Biological Sciences, Universiti Sains Malaysia (USMP) (Thiers, 2021). Morphological characteristics of plants parts of the *Vanilla* were diagnosed and compared with the descriptions by Soto-Arenas & Cribb (2010) and Averyanov (2011). The morphological characters of *Vanilla yersiniana* were described based on the Peninsular Malaysian specimen and its botanical drawing is provided.

## RESULTS AND DISCUSSION

### TAXONOMIC TREATMENT

VANILLA YERSINIANA Guillaumin & Sigaldi, Bull. Mus. Nat. Hist. sér. 2, 36: 162. 1964. Figs. 1 & 2. — Type: VIETNAM (Hon Ba), 26.03.1963, de Sigaldi 362, de Sigaldi 309 (Syntype P).

*Hemiepiphytic*, large creeping vine. Roots up to 4 m long. *Stem* to 10 m long or more; internodes 8.5–10 cm long, 8–9 mm in diam. *Leaves* 10–12 ×

4–6 cm, narrowly ovate or broadly lanceolate, apex shortly acuminate, glossy green; petiole *ca.* 1.5 cm long. *Inflorescence* 2–5.5 cm long in total, bearing 4–10 flowers; peduncle 0.5–1.5 cm long; rachis 1–3 cm long; floral bract *ca.* 2 mm long, broadly triangular. Pedicel-with-ovary 2.8–3.2 cm long, terete, slightly curved, green. Flowers in succession, wide-opening, 6–8 cm across; sepals and petals white with greenish-yellow tint. Sepals broadly oblanceolate, *ca.* 5.5 cm long, 1.5 cm wide; petals a little smaller, *ca.* 5 cm long with adaxial keel along the median vein. Lip *ca.* 5 cm long, trumpet-shaped, forms a narrow tube at base, adnate to column margins for about 3/4 of its length; base light yellow; apex white, rounded, 4 cm wide when spread out, margin slightly undulate to undulate; disc with an imbricate brush *ca.* 0.7 cm high by 0.5 cm wide, the apex with longitudinal rows of sparsely and shortly papillate hairs, 1–2.5 mm long, tinted red. Column *ca.* 4.5 cm long, slender, slightly curved, glabrous, whitish; lateral sides of clinandrium slightly undulate, reddish; rostellum *ca.* 0.5 cm long, rectangular; stigma 0.5 cm wide, transversely oblong to rectangular; apex irregularly incised with reddish margin, whitish yellow; anther-cap *ca.* 0.4 cm long, helmet-shaped, glabrous, greenish; pollinia granular. *Fruit* 12 cm long, cylindrical.

**Distribution.** Vietnam, Thailand and Peninsular Malaysia. In Peninsular Malaysia found in Perak.

**Ecology.** Climbing on trees, close to streams in secondary evergreen lowland forests.

**Phenology.** Flowering from March to May. Fruiting in March.

**Notes.** *Vanilla yersiniana* is a new record to Peninsular Malaysia. The lanceolate, long-acuminate leaves, whitish flowers and its scarcely developed papillae on lip apex distinguished this species from its closest ally, the *V. albida*. Tepals of *V. albida* are greener, and the lip is white with conspicuous trichomes at the apex of the lip (Cribb, 2014).

**Specimen examined.** *Ikhwanuddin* 11871 (USMP), Malaysia, Perak, Lenggong, 120 m elevation, 3 March 2021, flowering vine.

### Key to *Vanilla* species from Peninsular Malaysia

- 1a. Leaves reduced to small scales ..... *V. aphylla*  
 1b. Leaves not reduced to small scales, of various sizes ..... 2  
 2a. Leaves  $\geq$  30 cm long ..... 3  
 2b. Leaves  $\leq$  20 cm long ..... 4  
 3a. Lip with veins blood-red forked or branched, midlobe with with tuft of hairs ..... *V. sumatrana*  
 3b. Lip with purple-marked veins, midlobe with red-purple papillae at the apex ..... *V. kinabaluensis*  
 4a. Lip apex deeply bilobed ..... 5  
 4b. Lip apex entire ..... 6  
 5a. Lip midlobe with dense horseshoe-shaped callus at the emarginated apex ..... *V. griffithii*  
 5b. Lip midlobe with single individual hairs arranged vertically towards the intersection of apical split .....  
 ..... *V. norashikiniana*  
 6a. Lip with dense group of hairs at the apex ..... *V. pilifera*  
 6b. Lip with sparsely arranged hairs at the apex ..... 7  
 7a. Lip with single individual trichomes arranged in rows at the apex ..... *V. montana*  
 7b. Lip with sparse short papillate hairs at the apex ..... *V. yersiniana*



Fig. 1. *Vanilla yersiniana* in situ, Lenggong, Perak. A. Flower, front view. B. Vines with inflorescences at different flowering stages. C. Fruit. Photos by Ikhwanuddin.

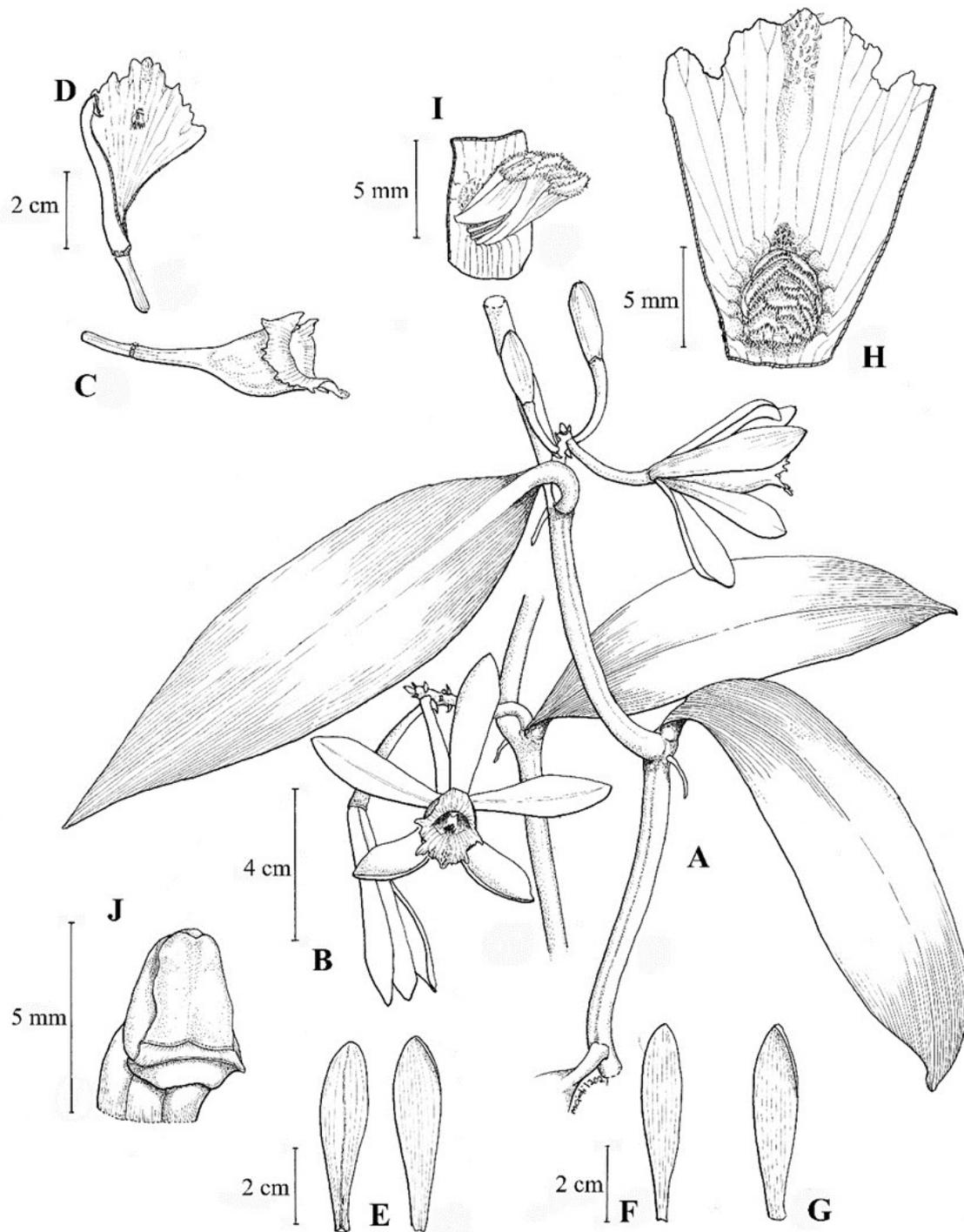


Fig. 2. *Vanilla yersiniana*. A. Part of flowering plant. B. Inflorescence with frontal view of flower. C. Lip, side view. D. Column with lip spread out. E. Petal, adaxial (left) & abaxial (right). F. Dorsal sepal. G. Lateral sepal. H. Apical half of the lip disc showing the brush in the middle of the lip disc and hairs on apex. I. Imbricate brush on the lip disc. J. Column apex. From the herbarium specimen, *Ikhwanuddin 11871* (USMP). Drawn by Mohamad Aidil Noordin.

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