Hymenorchis phitamii (Orchidaceae) – New Genus and Species in the Flora of Vietnam

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ABSTRACT: *Hymenorchis phitamii* – new species for science discovered in southern Vietnam described and illustrated. From most closely related *H. javanica* it differs in emarginate orbicular lip and nearly straight (or hardly serrulate) tepals and leaves. The first record of the genus *Hymenorchis* in mainland Asia represents new remarkable addition to the orchid flora of Vietnam, as well as floras of Indochina and mainland Asia.

KEY WORDS: Flora of Vietnam, *Hymenorchis phitamii*, new orchid species, plant diversity, taxonomy.

INTRODUCTION

Hymenorchis Schltr. is small orchid genus which belongs to subtrib. *Aeridinae* Pfitz. (Trib. *Vandeae* Lindl., Subfam. *Vandoideae* Endl.). Most probably it has closest relation to such genera as *Ceratocentron* Senghas and *Ceratochilus* Blume (Schuiteman, de Vogel, 2009). The center of the genus diversity is certainly New Guinea, from where Rudolf Schlechter reported 6 species when he first described the genus (Schlechter, 1913). Two *Hymenorchis* species were added to New Guinea orchid flora later, one more species was found in the Philippines, one in New Caledonia, and last species hitherto recorded till now was reported as rare endemic of western Java (Comber, 1990; Schuiteman and de Vogel, 2009). Being into consideration these very disjunctive records it may be expected much broader distribution of the genus in tropical Asia, at least in Malay Archipelago. Meanwhile, all species of the genus are very small twig epiphytes that commonly inhabit canopies of tallest trees in primary forests. Such canopy epiphytes growing in terminal canopy zone very difficult for collecting, observation and study. As a result they are easily overlooked in botanical surveys, why their distribution remains insufficiently studied. Discovery of species reported and described below represents first record of the genus in mainland Asia that dramatically expands known area of its distribution.

TAXONOMIC TREATMENT

Hymenorchis Schltr.,1913, Repert. Spec. Nov. Regni Veg. Beih. 1: 994.

Type: *H. javanica* (Teijsm. et Binn.) Schltr. (=*Oeceoclades javanica* Teijsm. et Binn.).

12 species. S. Vietnam, W. Java, Philippines (Luzon), New Guinea, New Caledonia.

Hymenorchis phitamii Aver., ***sp. nov.*** Figs. 1 & 2

Described from southern Vietnam ("S. Vietnam, Lam Dong Prov., 60 km to NW. from Dalat city, Lac Duong Distr., Dung K'No municipality, around point 12°09'15''N, 108°22'25''E. Closed broadleaved primary forest (Lauraceae; Fagaceae) along small river on NW at 1514 m alt. Epiphyte on large trees along stream"). Type ("25 May 2010, *N.P.Tam, NPT 01 D 1101*") – CPC Herbarium (holotype), LE (isotype).

Planta epiphytica humilis. Caulis 0.5–2 cm longus, foliis 5–10 ovatis distichis. Folia 1.5–2(2.5) cm longa, 0.5–1(1.5) cm lata, minute serrulata vel subintegra, vaginis eroso-fimbriatis. Inflorescentia 0.5–1 cm longa, 1–10-flora, rhachide abbreviata. Flores 1–1.5 cm in diametro, nivei, labello macula viridi. Sepala petalis subsimilia, oblonga, 7–10 mm longa, 3–5 mm lata, minute serrulata vel subintegra. Labellum orbiculare, 2.5–3 mm in diametro, eroso-fimbriatum, apice emarginatum. Saccus 4–6 mm longus, 1.5–2 mm latus, latere leviter compressus.

Canopy or trunk pendent dwarf epiphyte. Stem 0.5–2 cm long, leafy throughout, with 5–10 distichus leaves and numerous thick axillary flexuose roots at the base. Leaves in two rows, arranged at one plane, ovate to broadly lanceolate, 1.5–2(2.5) cm long, 0.5–1 cm wide, thick and fleshy, obtuse to acute, young finely

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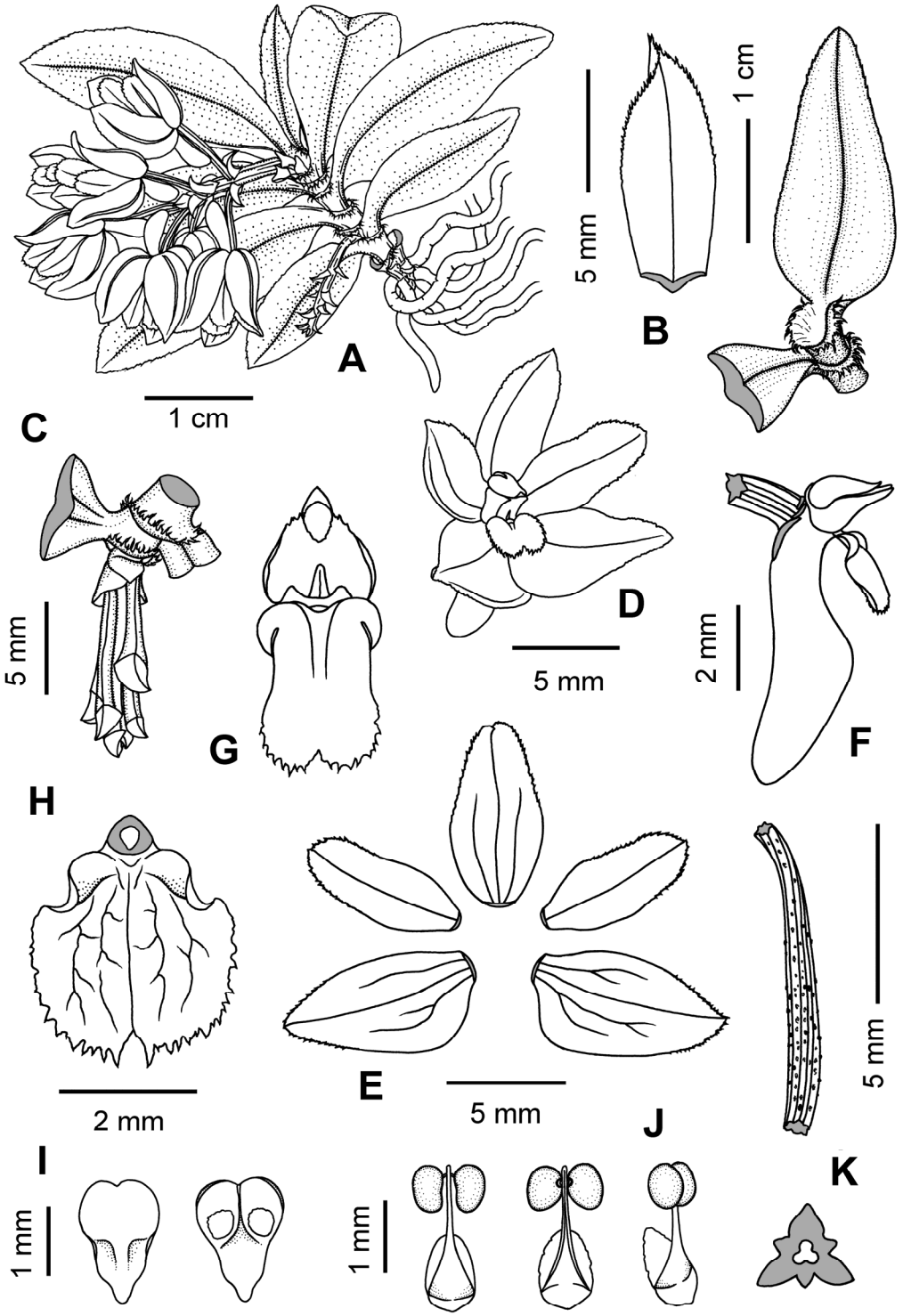


Fig. 1. ***Hymenorchis phitamii*****. A: flowering plant. B: young and mature leaf. C: inflorescence stalk. D: flower half-side view. E: flattened sepals and petals. F: column and lip, side view with removed sepals and petals. G: lip and column, frontal view. H: flattened lip. I: operculum, view from above and from below. J: pollinarium, ventral, dorsal and half-side views. K: ovary, side view and its transverse section. All drawn from the type -** ***NPT 01 D 1101*** **by L. Averyanov and T. Maisak.**

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serrulate, conduplicate, oldest with almost straight, entire margin, more or less flat, at the base broadening into closed overlapping sheaths embracing stem, sheath margin erose fimbriate. Inflorescence arising from leaf axil, with thick axis, 0.5–1 cm long, bearing 2–4 broad triangular sterile bracts abbreviated at the stalk base, rachis very short, with 1–10 spirally arranged flowers. Floral bracts small, triangular, obtuse, 1–2 mm long and broad. Pedicel and ovary narrowly cylindric, 6–10 mm long, almost straight, light green, haired with sparse brownish small furfuraceous scales, longitudinally strongly keeled or ribbed. Flowers odorless, resupinate, short lasting, widely opening, 1–1.5 cm across; sepals and petals very thin, pure white, translucent, lip white with green spot at the center. Sepals and petals subsimilar, narrowly ovate to oblong, keeled outside, 7–10 mm long, 3–5 mm wide, finely erose serrulate to nearly entire along margin, with almost orbicular apex, petals slightly smaller. Lip orbicular, 2.5–3 mm in diam., erose dentate to erose fimbriate along incurving margin, emarginate at apex, bended down at the base; lib base fleshy, spurred, with very narrow spur opening. Spur saccate, broadening from the base, to the center and narrowing again to the apex, slightly laterally compressed, 4–6 mm long, 1.5–2 mm wide, with no ornamentation inside. Column white, shortly cylindric, 1–1.5 mm tall and wide, with nearly flat broad stigma at front, apically with emarginate rostellum, at the base with small median ridge. Operculum pure white, hemispheric, about 1.2 mm in diam., with large, broadly triangular, elongate, recurved beak. Pollinarium consists of 2 pollinia, caudicles, stipe and viscidium. Pollinia solid, yellow, almost spherical, without any distinct cleft. Caudicles very small, hardly visible. Stipe in form of thin channeled triangular lamina attached by broad base to viscidium and attenuate to filiform apex. Viscidium in form of flat simple ovate plate about 1 mm long. Fruit unknown.

Ecology: Pendulous canopy epiphyte on large trees. Primary closed wet broad-leaved evergreen forests (were dominant trees of canopy stratum belong to Lauraceae and Fagaceae families) along small mountain streams at elevation 1400–1600 m a.s.l. Fl. October–November. Very rare (EN).

Etymology: Species name refers name of its discoverer – Mr. Nguyen Phi Tam.

Distribution: S. Vietnam (Lam Dong Province). Local endemic with extremely restrict distribution.

Studied specimens: S. VIETNAM, Lam Dong Prov., 60 km to NW. from Dalat city, Lac Duong Distr., Dung K'No municipality, around point 12°09'15''N, 108°22'25''E, 15 Jan. 2011, *N.V.Duy, N.P.Tam, VTN 761* (living plants in collection of the Institute of Biology at Da Lat City; LE - photo).

Notes: Discovery of our species in southern Vietnam represents first and very surprising record of the "Malesian" genus in continental Asia. This finding lies in distance respectively more than 1500 and 2000 km from areas of its nearest congeners reported from Luzon (*H. vanoverberghii* (Ames) Garay) and western Java (*H. javanica* (Teijsm. et Binn.) Schltr.). It is remarkable addition to the orchid flora of Vietnam, as well as floras of Indochina and mainland Asia.

Our plant obviously most close to *H. javanica* recorded as a rare trunk epiphyte growing in mountain forests of western Java at elevations 900–1000 m a.s.l. (Comber, 1990). Vietnamese plant looks fairly similar with Javanese species on its vegetative characteristics, but differs in emarginate, long erose-dentate, almost orbicular lip and hardly serrulate or even nearly entire straight margin of tepals and old leaves.

Meanwhile, almost all species of *Hymenorchis* can be easily recognized by the finely serrulate leaf margin and fimbriate margin of leaf sheaths. These miniature plants with stem and leaves commonly not exceeding 1–2 cm long produce few relatively large white flowers arranged into compact head-like inflorescence. Lip is always very small, usually with large green spot. Besides small habit, species of the genus, including species described here, have certain significance for horticulture as tiny miniature ornamental plants.

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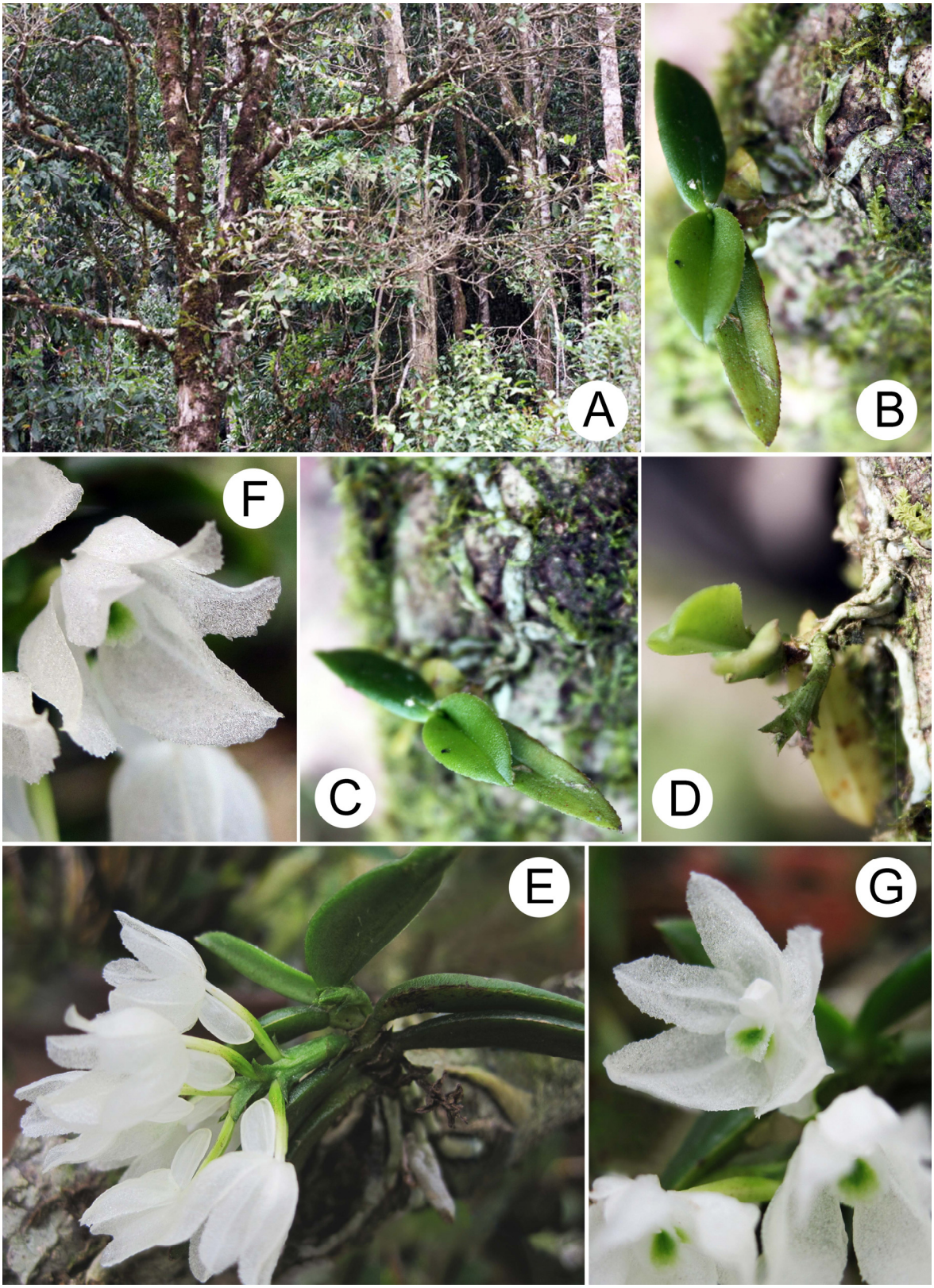


Fig. 2. ***Hymenorchis phitamii***. **A:** ***Locus classicus*** **at primary montane evergreen forest with domination of representatives of Fagaceae and Lauraceae at elev. 1515 m a.s.l., B–D: mature plants in nature (*VTN 761*), E–G: wild collected plants flowering under cultivation (type –** ***NPT 01 D 1101*****). All photos of Nguyen Phi Tam and Nong Van Duy.**

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來自越南的新種兼 *Hymenorchis* 屬新紀錄分布—*Hymenorchis phitamii*

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摘要：本文發表了在越南發現的蘭科新種*Hymenorchis phitamii*。與近似物種*H. javanica*相較，本種的唇瓣尖端凹陷、花被片和葉片邊緣呈細鋸齒狀，這也是首次在亞洲大陸發現*Hymenorchis*屬的分布，也為越南植物誌、中印半島及亞洲大陸增添一筆引人注目的發現。

關鍵詞：越南植物誌、*Hymenorchis phitamii*、蘭科新種、植物多樣性、分類學。

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