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Nervilia gracilis – A New Orchid Species from Northern Vietnam

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ABSTRACT: *Nervilia gracilis* – a new species for science discovered in northern Vietnam was described and illustrated. This species belongs to complex of miniature 1-flowered species and has the closest relation to Laotian *N. calcicola*, from which it differs in keeled disk of the lip and very small membranaceous leaves.

KEY WORDS: Flora of Vietnam, *Nervilia gracilis*, new orchid species, taxonomy, plant diversity.

INTRODUCTION

The genus *Nervilia* Gaudich. includes about 80 species with wide distribution in tropical Africa, Asia, Australia and Pacific islands. Most species of the genus develop flowers and leaves at different times hence it is not always easy to match the leaves with the flowers, particularly in herbarium collections. As a result, taxonomy of this group is difficult. Flowers of all species are ephemeral and often overlooked during field surveys.Therefore their inventory in local floras often remains incomplete. This is illustrated by the present discovery of one more new species with very delicate, short lasting, unattractive flowers and small membranaceous leaves evolving and disappearing in a few weeks after flowering. New species represents "missing" link in latitudinal series of miniature 1-flowered local endemics which connects "Himalayan" and "E. Asian" groups of closely related species. Description and available data on newly discovered species are following below.

TAXONOMIC NOTES

Nervilia Gaudich.

1827, in Freycinet, Voyage Uranie Physicien. Bot., tab. 35; id., 1829, ibid.: 421, nom. conserv.

Type: *N. aragoana* Gaudich.

Eighty species. Tropical Africa, Asia, Australia and Pacific islands.

N. gracilis Aver. *sp. nov.* Figs. 1 & 2

– *Nervilia infundibulifolia* auct. non Blatt. et McCann, 1932: Seidenf., 1978, Dansk Bot. Ark. 32, 2: 153, fig. 94, p.p.; P.H.Ho, 2000, Ill. Fl. Vietnam, 3: 794, fig. 10937. – *N. punctata* auct. non (Blume) Makino: Aver. et Averyanova, 2003, Updated Checklist Orch. Viet.: 46.

Described from Northern Vietnam ("N. Vietnam, Cao Bang Prov., Nguyen Binh Distr., Ca Thanh Municipality (22°44'N 105°50'E). Primary semi-deciduous mixed forest along tops of remnant karst limestone ridge at elev. 1350-1400 m"). Type ("13 April 1999 *P.K.Loc, P.H.Hoang, Averyanov L. CBL 1279*") – HN (holotytpe), LE (isotype).

Tuber album, subglobosum, 5-10 mm in diam. Folium laete viride, membranaceum, cordatum, indistincte 5-7-angulatum, 1-2.5 cm in diam. Petiolum erectum, 2-4 mm lg. Inflorescentia erecta, filiformis, 5-12 cm lg., uniflora (rarissime biflora). Sepala petalaque uniformia, fuscoviridia, lanceolata, 10–20 mm lg., 2-3 mm lt. Labellum album, epichilium purpureomaculatum, 12-18 mm lg., basi ca. 3 mm lt., trilobatum; lobi laterales erecti, obtusi ad acutos; lobus medius obovatus vel late lanceolatus, 7-12 mm lg., 3-7 mm lt., acutus ad rotundum; discus glaber, centro carinis brevibus glabris duabus 0.5 mm altis secundum nervos laterales dispositis. Columna clavata, alba, 5-7 mm alta, glabra. Capsula erecta, fusiformis, 8-11 mm lg.

Tuber white, subglobose, 5-10 mm across. Leaf light green, very thin, membranaceous, cordate in outline, obscurely 5-7-angled, 1-2.5 cm across, with 5-7 main veins, glabrous, base deeply cordate, obtuse. Petiole erect, 2-4 cm long, with 1 acute, tubular sheath near base. Inflorescence erect, slender, 5-12 cm tall, 1-flowered (very rare 2-flowered). Scape filiform, elongating in fruit to 20 cm long, white to light brownish, occasionally with purple flecks, with 1-2 tubular, scarious, light yellowish-brown, acute sheaths 0.5-1.5 cm long. Floral bract very small, acute, ovate-triangular to lanceolate, 2-4 mm long. Flower at right angle to scape, resupinate, not widely opening, 1-1.5 cm across. Pedicel and ovary brown to greenish-brown, occasionally with purple flecks, 4-5 mm long, ovary ovoid, 2-3 mm long. Sepals and petals similar, yellowish-brown to greenish-brown, with purple-brown streaks and flecks, obtuse to acute,

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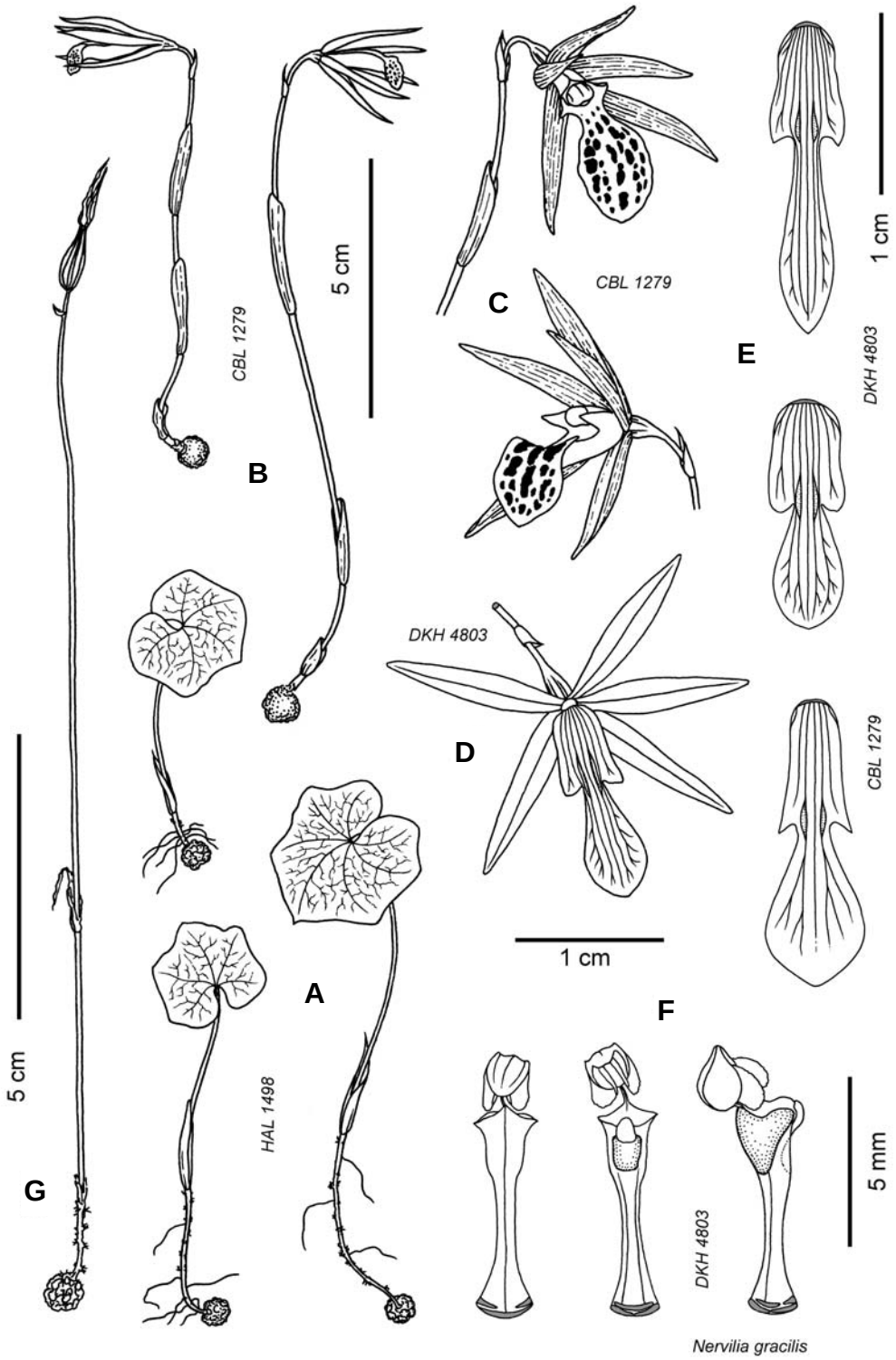


Fig. 1. ***Nervilia gracilis*****. A: Mature leaves (drawn from specimen -** ***HAL 1498*****). B: Flowering plants (*****CBL 1279*****). C: Flowers (*****CBL 1279*****), D: Flower with flattened tepals (*****DKH 4803*****). E: Morphological variants of the lip (*****CBL 1279, DKH 4803*****). F: Column, dorsal, ventral and side views (*****DKH 4803*****). G: Fruiting plant (*****HAL 1498*****).**

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Fig. 2. *Nervilia gracilis*. A, B: Flowering plants (*CBL 1279*), C, D: Flowers, side and frontal views (*CPC 174*). E: Flattened flowering plant (*CPC 174*).

lanceolate, 10-20 mm long, 2-3 mm wide, petals little shorter and narrower. Lip white, with purple-magenta spots and blotches on reflexed at right angle epichile, oblong, as long as sepals or little longer, 12-18 mm long, about 3 mm wide at the base, widening to the apex, spurless, 3-lobed near middle; lateral lobes erect, obtuse to acute, oblique-triangular or almost round, loosely embracing column; median lobe rhomboid, obovate or broadly lanceolate, 7-12 mm long, 3-7 mm wide, acute, obtuse to almost round at apex; disk glabrous or finely papillose, at the center with 2 short, glabrous keels 0.5 mm tall, coming along lateral veins. Column clavate, erect, white, 5-7 mm tall, glabrous; clinandrium broad funnel-like, anther terminal, anther cap ovoid, white, at the base with prominent membranaceous lateral ears; stigma subquadrate; rostellum large, prominent, in form of erect plate. Capsule erect, fusiform, 8-11 mm long, 2-3 mm in diam., very early ripening.

Ecology: Primary broad-leaved, mixed and coniferous humid shady evergreen forests on rocky limestone at elev. 900-1400 m a.s.l. Fl. March - April. Fruits May - June. Very rare (EN).

Distribution: Vietnam (provinces: Cao Bang, Ha Giang).

Studied specimens: Cao Bang Province, Nguyen Binh District, *CBL 1279* (HN, LE); Ha Giang Province, Quan Ba District, *CPC 174* (HN), *HAL 1498* (HN, LE), *DKH 4803* (HN, LE), *DKH 5034* (HN, LE).

Notes: Our plant belongs to a complex of miniature closely related to the 1-flowered species with small flowers, which includes “Himalayan” group (*N. falcata* (King et Pantl.) Schltr., *N. infundibulifolia* Blatt. et McCann, *N. khasiana* (King et Pantl) Schltr., *N. mackinnonii* (Duthie) Schltr.) distributed mainly through Himalayas, “East Asian” group (*N. lanyuensis* S.S. Ying, *N. nipponica* Makino, *N. tahanshanensis* T.P. Lin et W.M. Lin, *N. taiwaniana* S.S. Ying) recorded from

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Japan and Taiwan and "Indochinese-Malesian" group (*N. calcicola* Kerr, *N. punctata* (Blume) Makino spreading from Laos and Thailand to Sumatra, Java and Kalimantan. Though described species fairly variable in form of lip, it differs from all mentioned species in 2 small but distinct straight lamellate keels at center of the disk and in small, very thin, membranaceous leaves. This species obviously represents strict endemism very typical for local aboriginal floras of rocky limestone widely spreading in northern Vietnam and southern China. Undescribed plant from Yunnan mentioned in notes to *N. taiwaniana* in "Flora of China" (Chen and Gale, 2009:199) may also belong here.

Nervilia tahanshanensis recently described from Taiwan (Lin and Lin, 2009) superficially resembles *N. gracilis*, but distinctly differ in its densely hairy lip, 1-keeled lip disk and much larger dark green, shiny leaves. On these features it obviously approximates to Himalayan species of *N. infundibulifolia* group.

Nervilia gracilis has probably the closest relation with *N. calcicola* described from Laos. However, the later species differs in flat keel-less disk of the lip and larger leaves. It may also be found in future on territories of Vietnam closer to the border of Laos.

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Nervilia gracilis – 越南北部的新種蘭科植物

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摘要：本文敘述並描繪越南北部發現的新物種 *Nervilia gracilis*。該種屬於小型單花的種群，且與寮國的 *N. calcicola* 相近；但由唇盤具龍骨狀突起，以及很小的膜質葉片可與之區辨。

關鍵詞：越南植物誌、*Nervilia gracilis*、新種蘭科植物、分類學、植物多樣性

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