

Short communications

Notes on *Dendrobium elliotianum* O'Byrne (Orchidaceae),
a poorly known orchid from Thailand

Krisda Buanaka^{1*}

Yingyong Paisuksantivattana²

Niran Juntawong¹

Weerachai Nanakorn³

¹Department of Botany, Faculty of Science, Kasetsart University, Bangkok Thailand 10900

²Department of Horticulture, Faculty of Agriculture, Kasetsart University, Bangkok Thailand 10900

³The Crown Property Bureau, Dusit, Bangkok, Thailand 10300

*Corresponding Author, E-mail: cowboytaxo@yahoo.co.th

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ABSTRACT

The occurrence of *Dendrobium elliotianum* O'Byrne in Thailand represents the first reporting of this species. The *Dendrobium elliotianum* O'Byrne, a poorly known orchid, was newly discovered in northern (and southwestern) Thailand. It was previously known from cultivated plants. It is similar to *D. gregulus* Seidenf. and *D. garrettii* Seidenf. and it is here suspected that it has frequently been mistaken from these species in the past. A description, line drawings and photographs are provided.

Keywords: *Dendrobium elliotianum*, New Naturalized Record, Orchidaceae,
Phu Soi Dao National Park

INTRODUCTION

Orchidaceae is one of the largest and most diverse families of flowering plants, making up to one-tenth of all flowering plant species in the world (Dressler, 1993). The genus *Dendrobium*, with 1,184 species, is the second largest genus in Orchidaceae (Leitch *et al.*, 2009). They are found in various geographical zones and in enormously diverse growth habits along tropical and subtropical Asia and Northern Australia. In Thailand, *Dendrobium*

spp. is the largest orchid genus with more than 150 native species classified into 14 sections (Seidenfaden, 1985). It is also one of the most popular orchids for commercial production with the substantial increase in the demand for cut flowers and pot plants over the years. About 8,000 novel *Dendrobium* hybrids have been bred through interspecific hybridizations for different flower morphological characteristics. (Lavarack *et al.*, 2000). In contrast, most native *Dendrobium* species are critically susceptible to deterioration and fragmentation of the natural ecosystem because of mass collection from the

wild for trade in both flowers and pot plants. Hence, native *Dendrobium* species are now considered an endangered species (CITES)

During the botanical survey at Phu Soi Dao National Park (Northern; Thailand), one unusual *Dendrobium* specimen was collected which did not match any currently known species (Seidenfaden, 1985). The specimen was kept in the living specimens at the Romklao Botanical Garden under HM Queen' initiative, Phitsnulok Province (RBG). This specimen has now been positively identified as *Dendrobium elliotianum* O'Byrne, currently the only known plant in Thailand with further occurrences in Tak (Northern) and Kanchanaburi (Southwestern) reported by Thai orchid enthusiasts in naturalized occurrence. The new naturalized record of the species was confirmed in Thailand as reported below. The following description and illustration are based on the recent specimens from Thailand.

TAXONOMIC TREATMENT

Dendrobium elliotianum O'Byrne. Malayan Orchid Rev. 43:96. 2009. fig.103; Plate 1-3 (Type: Thailand, cult. J. Elliott (Singapore). O'Byrne DX611 (holotype: SING).)

Plant epiphytic or lithophytic herb. Rhizome very short, 2 mm in diameter, obscured. Pseudobulbs crowded, erect, 4-22 mm tall, 4-7 mm in diameter, up to 5 internodes, shape variable, usually ovoid-conical dark green, covered in persistent sheaths, 2-4 leaved at apex. Leaves spreading, green, deciduous oblong to linear, 15-28 × 2-5 mm, apex obtuse.

Sheaths tightly clasping stem, much longer than internode, green, soon drying to red-brown with coarse white to brown longitudinal fibers. Inflorescences 1-several, 1st one terminal, subsequent ones lateral from upper nodes on pseudobulb, erect to suberect, 24-52 mm long, approximately one-third the length being a raceme of up to 8 outward-facing flowers. Peduncle slender, extreme base obscured by leaf-sheaths, proximal two-thirds covered by 2-3 overlapping bracts, green; bracts cylindrical, 4-7 mm long, tightly-clasping with a loose narrowly-ovate acute tip, transparent white to brown. Rachis green, slightly zigzag, flowers 2-3.5 mm apart; floral bract broad-lanceolate, 1.8-2.2 mm long; pedicel-with-ovary slender 5-6 mm long, pedicel white to pale green, conical ovary green. Flowers: 10-12 mm tall (tip of dorsal sepal to mentum tip) × 7-10 mm wide, sepals not widespreading, very long-lasting. Sepals and petals white, petals and sometimes sepals have pink-purple veins, mentum white to pale green with green markings at base and apex. Lip claw pale pea-green, sidelobes white with scattered rose-purple specks (especially near and along margins); mid-lobe pink-purple with darker veins, callus white at base graduating to pink-purple at apex. Column pink-purple with darker specks on sides, behind stigma and on foot; anther pink-purple. Dorsal sepal: suberect, oblong-subspathulate, 5.5 × 1.7 mm, 3-veined at the base, acuminate. Lateral sepals: free part oblong, unequal, 5 mm x 1.8 mm, 3-veined, acuminate, anterior margin at base much extended and fused to column foot forming a mentum, 6.6 mm

wide in total. Mentum: descending at right angles, c. 6 mm long, proximal half conical, distal half fused to lip along margins forming a 3 mm long narrowly cylindrical tube with retuse apex. Petals: porrect, subspathulate, 5.5 mm × 1.8 mm, 3-veined, acute. Lip: clawed at base, 9.6 mm long when flat, rather thick single-keeled; claw erect, canaliculate, 3.2 mm × 1 mm, margins fused to column foot; epichile decurved, indistinctly 3-lobed in middle, in outline obovate to obpyriform, 6-5 mm × 5.2 mm, widest across base of midlobe; sidelobes erect, elliptic, 3.5 mm × 1.5 mm, without free-standing apex, margin rounded, becoming crenulate towards the front, midlobe by small notch; midlobe transverse-ovate with raised sides, 3 mm long × 5.2 mm wide when flat, margins unevenly incised-crenate, apex broadly truncate but appears acute when not flat; keel broad, arising near claw apex where it is 1 mm wide and canaliculate, broadening gradually and terminating in an erect 1 mm high × 1.5 mm wide transverse wall across lip floor beyond midlobe base. Apex truncate, often notched in middle. Column: porrect, terete, 2 mm long, underside flat and slightly concave; apex with large narrow-triangular strap and a denticulate flap on each side; foot narrowly oblong, 6 mm long, concave along median, ridged along margin in proximal half, distal half fused to lip along margins forming a tube, apex retuse. Anther: cucullate, slightly beaked, 1 mm wide. Pollinia: 4 in 2 pairs, 0.9 mm long, very narrow, yellow.

Specimen examined Northern Region: Uttaradit Phitsanulok [Phu Soi Dao National

Park, September 2007, RMK 2007/340 (Krisda Buanaka), living specimen cultivated at Romkloa Botanical Garden under HM Queen' initiative, Phitsnuluk Province (RBG)

Thailand Northern: Tak (Um Phang), Uttaradit, Phitsanulok (Phu Soi Dao); Southwestern : Kanchanaburi (Sangkhlaburi)

Distribution. Myanmar (Possibly in Karen (Kayin) state and Mon state)

Ecology lithophytics on scrub and open mossy with *Selaginella* sp. slope on limestone ca. 1000 m. and epiphytic expose moist evergreen forest ca. 1,600 m. Flowering occurs from November to February at Romkloa Botanical Garden under HM Queen' initiative, Phitsnuluk Province (RBG) and October to November at Tak (Um Phang)

Vernacular. Waai Che Dee (หวายเจดีย์) (General) (The Forest Herbarium, 2014)

Note. Thai nurseries have been selling their plants under various names, the most common being *D. gregulus* Seidenf. and *D. garrettii* Seidenf. All three species are minute epiphytes which form tufts or mats of pseudobulbs and are deciduous at flowering time. In *D. elliotianum* O'Byrne is characterized by the leafless pseudobulbs are usually less than 20 mm long, densely covered in persistent fibrous brown bracts, and of variable and irregular shape due to being strongly constricted at the internodes. *D. gregulus* Seidenf. and *D. garrettii* Seidenf. both have small (10-13 mm high) ovoid pseudobulbs that are not constricted at the internodes. All three species have similar inflorescences, with a similar flower count, and flowers that are similar in size, though in

D. garrettii Seidenf. the dorsal sepal is longer (8-10 mm) than in *D. gregulus* Seidenf. (6-8 mm) or *D. ellottianum* O'Byrne (5-6 mm). *D. ellottianum* O'Byrne has a much longer (6 mm) narrowly cylindrical mentum than *D. garrettii* Seidenf. (3 mm, broadly conical) or *D. gregulus* Seidenf. (4 mm, conical). The lip in *D. ellottianum* O'Byrne has a single broad keel with a raised (often notched) apex, *D. garrettii* Seidenf. has a broad callus divided into three longitudinal ridges, each of which has a raised apex; and *D. gregulus* Seidenf. have midlobe margins that are extremely undulating

and unevenly crenate, but *D. garrettii* Seidenf. has evenly fringed (fimbriate) midlobe margins. These three species can also be differentiated by the flower color. *D. ellottianum* O'Byrne has white flowers (sometimes with pink-purple veins) with a lip that is pale green at the base but is otherwise pink-purple with darker veins and specks. *D. garrettii* Seidenf. has off-white flowers with violet veins and a white or green lip with a central yellow patch and purple veins on the sidelobes. *D. gregulus* Seidenf. has light sulphur-yellow flowers with red-purple veins on the sidelobes.

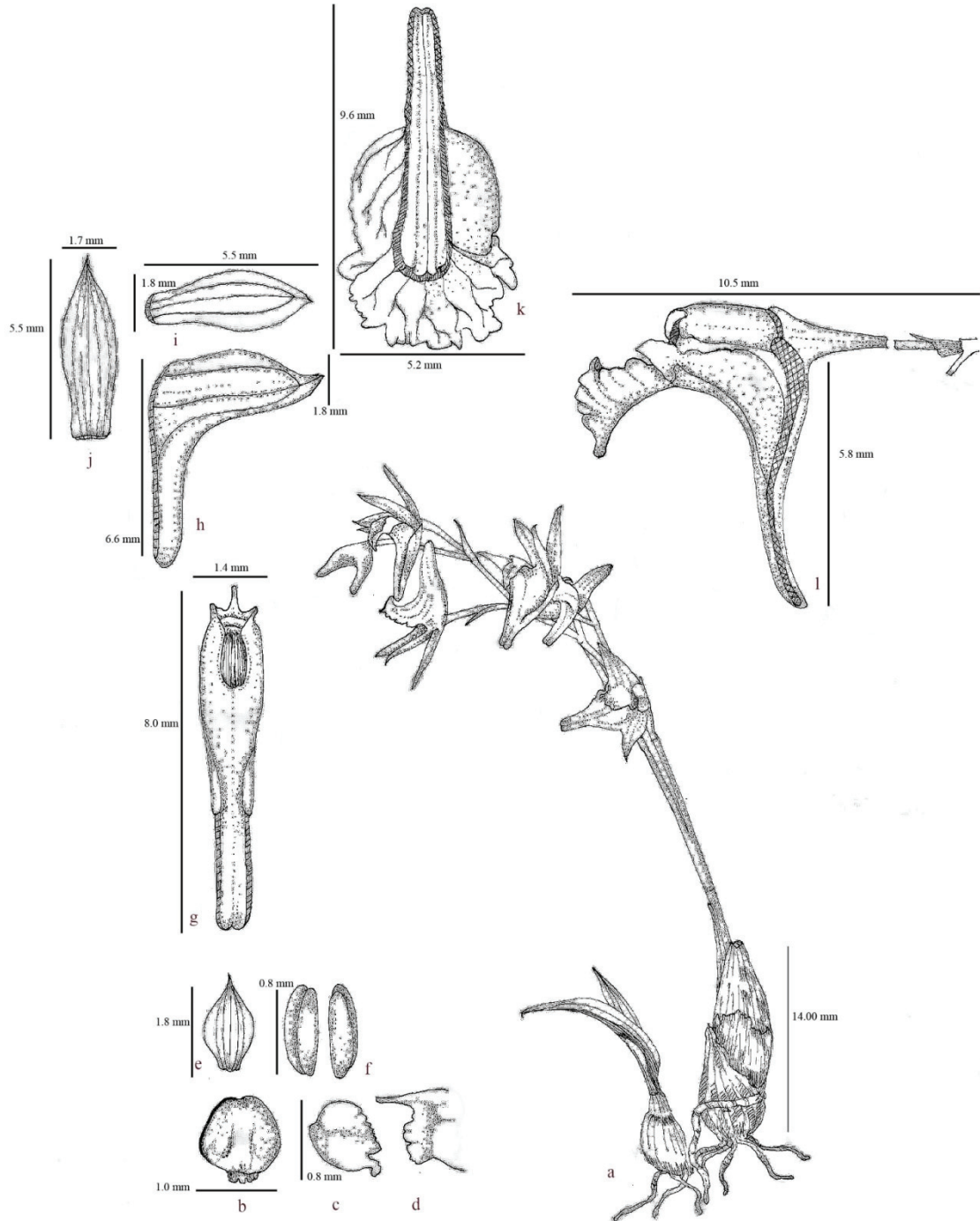


Figure 1 *Dendrobium elliotianum* O'Byrne.

Notes: a. habit, b. anther cap, c. anther cap (side view), d. columnfoot apex (side view), e. bract, f. pollinia, g. columnfoot, h. lateral sepal, i. petal, j. dorsal sepal, k. lip, l. columnfoot and lip (callus indicated) Drawn by Mr. Peernat Bokorane from fresh specimens RMK 2007/340 (Krisda Buanaka) (RBG)

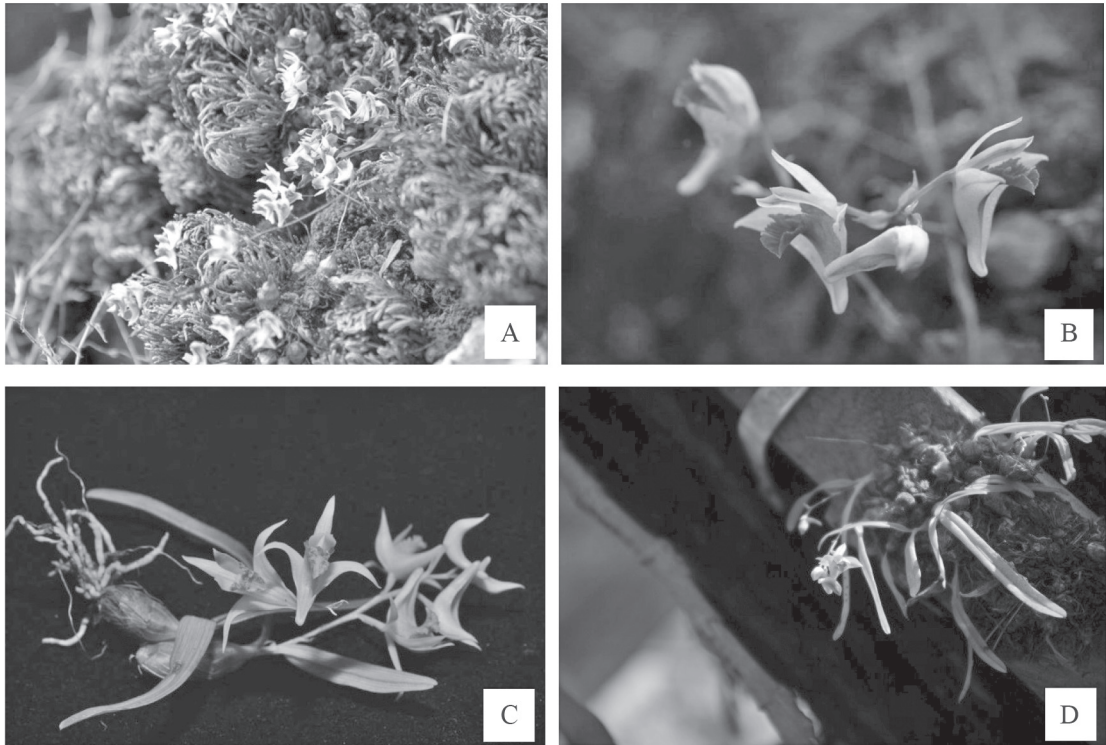


Figure 2 *Dendrobium elliotianum* O'Byrne.

- Notes:**
- A. Naturalized habitat (Suchart Chanhormhual-Tak)
 - B. Inflorescence (Suchart Chanhormhual-Tak)
 - C. Living collection from Thailand-Myrnmarr border market (Suchart Chanhormhual-Tak)
 - D. Cultivated living specimen at Romklao Botanical Garden under HM Queen' initiative, Phitsnulok Province (RBG) (Krisda Buanaka-Phitsanulok)

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