NOTE

Gastrodia theana Aver. (Orchidaceae) a Newly Recorded Species from the Central Taiwan

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ABSTRACT: *Gastrodia theana* Aver. was first publicized in Vietnam (2005). Recently, the species was found in humus of broad-leaved forest at elevations about 1,000 m in the central Taiwan. A line-drawing, photographs and distribution map of this newly recorded species are provided to aid in identification. The distinguished characters of *G. theana* are the perianth tube is distinctly striate outside and the column short, hardly visible.

KEY WORDS: Orchidaceae, *Gastrodia theana*, newly recorded, Taiwan.

INTRODUCTION

Gastrodia is a genus of the holomycotrophic orchid and consists of 20–50 species ranged from Asia to Oceania (Chen *et al*., 2009; Leou, 2000; Hsu and Kuo, 2011). In Taiwan, over 15 species have been reported (Hsu and Kuo, 2010; Hsu and Kuo, 2011). Recently, a newly recorded species *Gastrodia theana* Aver. was found in central Taiwan during our field research.

G. theana was first collected from the remote unstudied mountain areas of Vietnam and described by Averyanov in 2005. Now the newly recorded species in Taiwan is described and illustrated below.

TAXONOMIC TREATMENTS

Gastrodia theana Aver., Rheedea. 15 (2): 90.
短柱赤箭 Figs. 1–3

Terrestrial tuberiferous perennial leafless herbs. Tubers fleshy fusiform-cylindrical or tubular, 2–4 cm long, 0.5–0.8 cm in diameter, hairy and covered with lanceolate scales, rooting above the apex. Peduncle straight or slight flexuose, white turning yellowish-brown, 2–8 cm tall, 2–3 mm in diameter, with 2–3 sheathed bracts, bracts ovate-oblong, 5–6 mm long, obtuse or acute at apex. Inflorescence a terminal raceme; raceme 5–10 mm long, bearing 2–8 flowers; floral bracts white turning yellowish-brown, ovate-oblong, 4–6 mm long, 2–3 mm wide, acute; ovary 3–3.5 mm long; pedicel 3–4.5 mm long. Flowers white turning yellowish-brown, hardly opening, arched, slightly flattened from ventral side; sepals 16–20 mm long, verrucose outside, bearing 8 longitudinal grooves at dorsal side, 1–2 grooves at ventral side, very fleshy at apex and turning thinner toward the base, the dorsal one connate with the laterals on 9/10 of their length from base, the laterals connate each other on 1/4–1/3 of their length from base; free parts of sepals incurved at tips; petals located near the sinus between dorsal and lateral sepals, oblong-ovate, *ca.* 2.7 mm long, 1.4 mm wide, thin above, fleshy and ventricose or rarely flat below, glabrous at both surfaces; lip variable in their shape and length, blade elliptic ovate or lanceolate, cordate or truncate at base, acute or acuminate at apex, 3–7 mm long, 2–2.5 mm wide, finely denticulate along margins; disc slightly elevate longitudinally at middle, with 2 elevate processes along midrib half way to lip apex and 2 laterale longitudinal ridges half way to blade margins; claw elongate, geniculate, 0.6–1.2 mm long, with 2 globose or ellipsoid calli at base, column short, hidden, hardly visible, white, *ca.* 4 mm long, 2 mm wide, bearing 2 long stelidia on lateral side; stelidia protruding at column apex, incurving below anther; rostellum and clinandrium lacking; anther hemispheric, 1 mm across; pollinia light yellow, *ca*. 0.6 mm long; stigma round,

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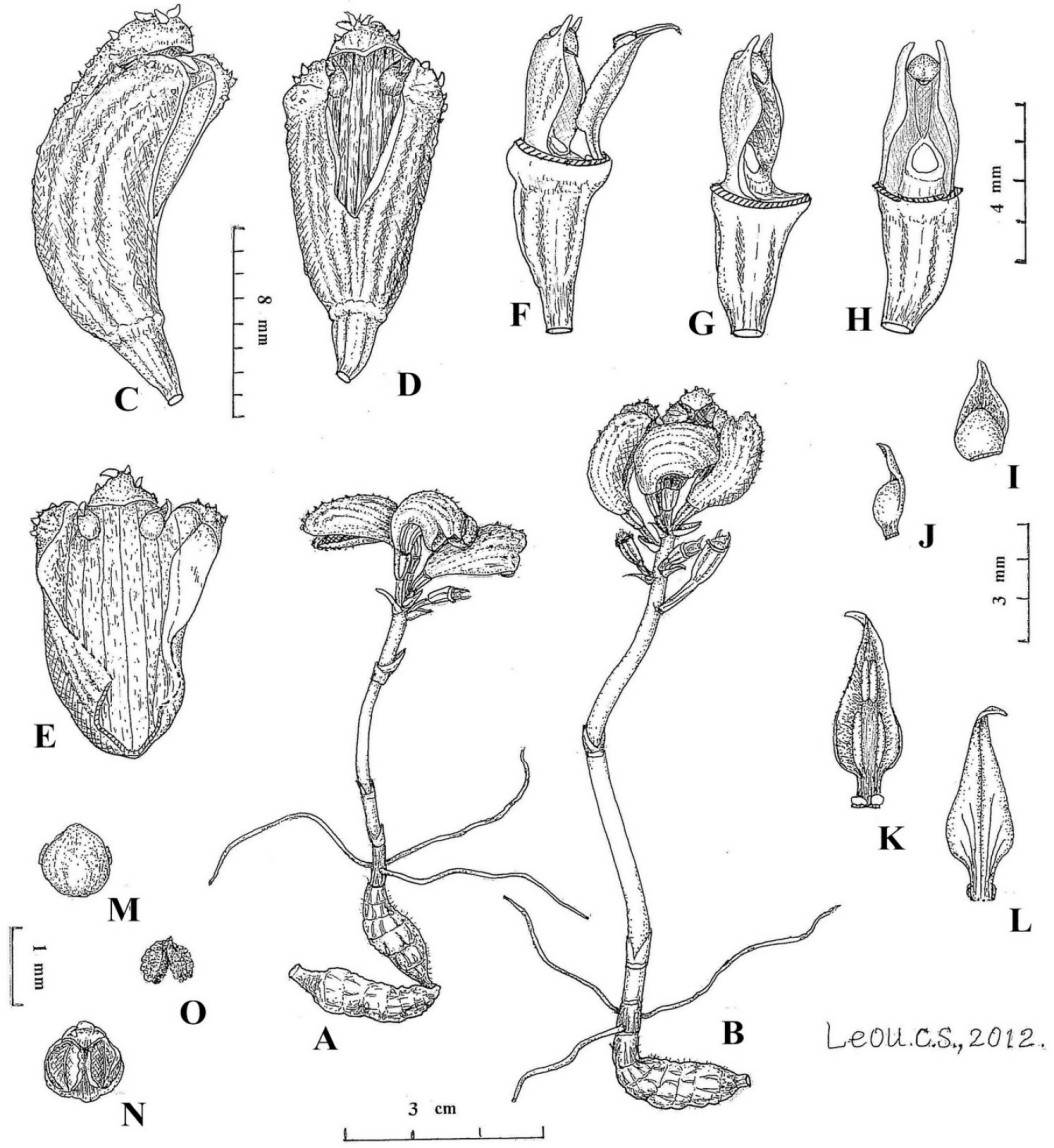


Fig. 1. ***Gastrodia theana*** **Aver. A&B: Habit. C: Flower, sideview. D: Flower, ventral view. E: Flower, opened, ventral view. F: Column and lip, side view. G: Column, side view. H: Column, ventral view. I: Petal, ventral view. J: Petal, lateral view. K: Lip, inside, claw straightened. L: Lip, outside, claw straightened. M: Anther, outside. N: Anther, inside. O: Pollinaria.**

located near the base of column. Capsule linear ellipsoid, 1.5–3 cm long; pedicel elongating to 20–30 cm long in fruit.

Distribution: Vietnam (Thua Thien-Hue Prov., Nam Dong Distr.) (Averyanov, 2005). Taiwan. (The species is found in the humus of broad-leaved forest at elevations about 1,000 m in the central part of the island. It grows on the slopes off the roads.)

Specimens examined: TAIWAN, Nantou County, Sinyi Township, 23°50'50" N, 120°56'15" E, alt. 950–1,100 m, 1 May 2012, *C. T. Lee 005* (PPI), same loc., *C. T. Lee 006* (TAI).

Notes: *G. theana* in Vietnam is similar to *G. albida* in Taiwan, but can be recognized by its perianth tube with distinctive striations outside and very small sometimes even hardly visible free parts of the petals which are narrowly triangular, the lip cordate at base, and the column short, hidden, and hardly visible (Averyanov, 2005; Hsu and Kuo, 2011). According to our observation, both of them are actually lacking in rostellum, not like what was described in the paper, "*G. theana has* a well-developed rostellum" (Hsu and Kuo, 2011).

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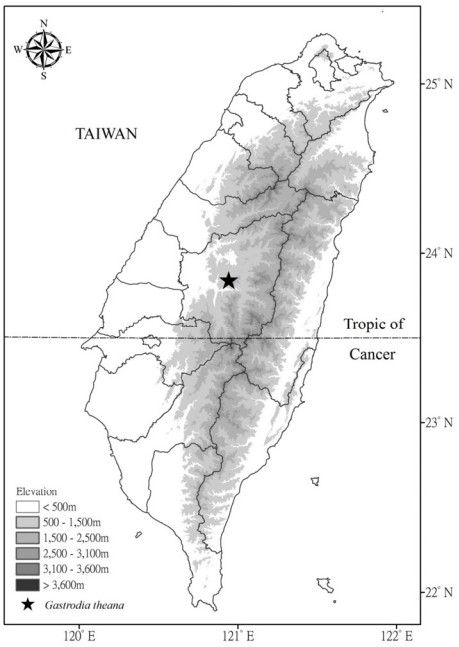


Fig. 2. Distribution of *Gastrodia theana* Aver. in Taiwan.



Fig. 3. Photographs of *Gastrodia theana* Aver. A: Flowers. B: Fruits. C: Column and lip, side view. D: Column with pollinaria, ventral view.

Compared with *G. theana* in Vietnam, the petals of that in Taiwan are bigger, oblong-ovate, thin above, fleshy and ventricose or rarely flat below, and glabrous at both surfaces. Furthermore, the lip has 7 nerves, just the same as what was shown in the line drawing of *G. theana* (Averyanov, 2005: Fig. 6g; Fig. 1I), but it is different from the description that the lip has 5 nerves in the text (Averyanov, 2005). (That is, the description of the *G. theana*'s lip is not in accordance with its line drawing in the report.) The morphological differences between the two species need to be studied in further.

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臺灣中部新記錄植物：短柱赤箭（蘭科）

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摘要：短柱赤箭2005年首次於越南發表，近期亦被發現生長於臺灣中部海拔1,000 m之森林。本文提供此新記錄種之線描圖、彩色照片及分佈圖供鑑定之用。短唇赤箭之辨識特徵為花被筒外側有溝紋，蕊柱隱藏不易見。

關鍵詞：蘭科、短唇赤箭、新紀錄、臺灣。

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