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Didymoplexis micradenia: A Newly Recorded Orchid (Orchidaceae) in Taiwan

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ABSTRACT: *Didymoplexis micradenia* (Rchb. f.) Hemsl. was recently found to be a new record of *Didymoplexis* Griffith in Taiwan. It is similar to *D. pallens* Griff. except that it is characterized by a smaller flower, very short column foot, and lip apical margin that is minutely denticulate. The description and illustration of *D. micradenia* and a key of *Didymoplexis* in Taiwan are provided in the present work.

KEY WORDS: Orchidaceae, *Didymoplexis micradenia*, new record, Taiwan, Taxonomy.

INTRODUCTION

Didymoplexis (Orchidaceae) is a small genus containing approximately 20 species found in tropical Africa, Madagascar, Southeast Asia, India, Pacific Islands, North Australia, and north to the Ryukyu Islands and Taiwan (Su, 2000; Pridgeon et al., 2005). Like other genera classified within Gastrodieae (Pridgeon et al., 2005), *Didymoplexis* species are all small saprophytic, achlorophylous plants and emerge aboveground only when flowering and fruiting. They are often neglected by field investigators because of their inconspicuous growth habits and limited flowering seasons. Previously only the type species of *Didymoplexis*, *D. pallens*, was recognized in Taiwan (Su, 2000; Huang, et al., 2003). Some specimens recently collected by the authors were identified to be the new record *D. micradenia*. It is similar to *D. pallens* but differs in floral morphology. In this study we provide the description, line drawing, color photos and distribution map of the new record *D. micradenia*, along with a key to distinguish the genus *Didymoplexis* in Taiwan.

Key to the species of *Didymoplexis* in Taiwan

1. Column with short foot ca. 2 mm long; lip orbitriangular when expanded, more than 6 mm wide, margin nearly rounded or a little undulate. ……..……. *D. pallens*
1. Column foot very short, less then 1 mm long; lip obovate when expanded, less then 5 mm wide, apical margin minute denticulate. ……..…..…..…..... *D. micradenia*

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TAXONOMIC TREATMENT

Didymoplexis micradenia (Rchb.f.) Hemsl., J. Linn. Soc. Bot. 20: 311, 1883; Lewis & Cribb, Orch. Vanuatu 1989: 24 ―Type: Ovalau, Fiji, *Seemann* 610 (holo. W; iso, K) 小鬼蘭 Figs. 1-3

Epiphanes micradenia Rchb. f. Seem. Fl. Vit. 295, 1868.
Didymoplexis minor J. J. Sm., Bull. Inst. Bot. Buit. 7: 1, 1900; Smith, Die Orchideen von Java. f. LIII ; Comber, Orch. Java 1990: 83.

Leafless and achlorophyllous terrestrial herbs. Plants 6-30 cm high. Rhizome subterranean, pale brown, fleshy, fusiform or moniliform, 1-5 cm long, 4-7 mm thick. Roots few, arising from apex of rhizome. Peduncle pale brown to whitish, 5-15cm long, 1.5-2 mm in diam., glabrous, with 3-5 scarious scales. Raceme 2-5 cm, 8-15 flowered; bract ovate, 1.5 mm long, acuminate; pedicel and ovary 4-6 mm long, glabrous. Flowers whitish, tinged with pale red, not opening widely; sepals and petals connate at base into floral tube; dorsal sepal 7-8 mm long, connate with petal for 1/2 to 2/3 their length, petals shorter, lateral sepals 5-7 mm long, connate for 2/3 to 4/5 their length, whole structure united with petals ca. 1/3 its length, free apex reflexed, 2-lobed, lobules semiorbicular. Lip white, obovate, 4-6 mm long, erect on both sides, 4-5 mm wide when flattened, base cuneate, apex obtuse, minute irregular denticulate in apical margin, disc with longitudinal raised keel of brownish warty papillae. Column white, clavate, ca. 5 mm long, apex enlarged, with 2 truncate rhombic wings, base expanded into inconspicuous short foot less than 1mm long; anther oval or orbicular, ca. 0.8 mm long, white; pollinia 4, 2

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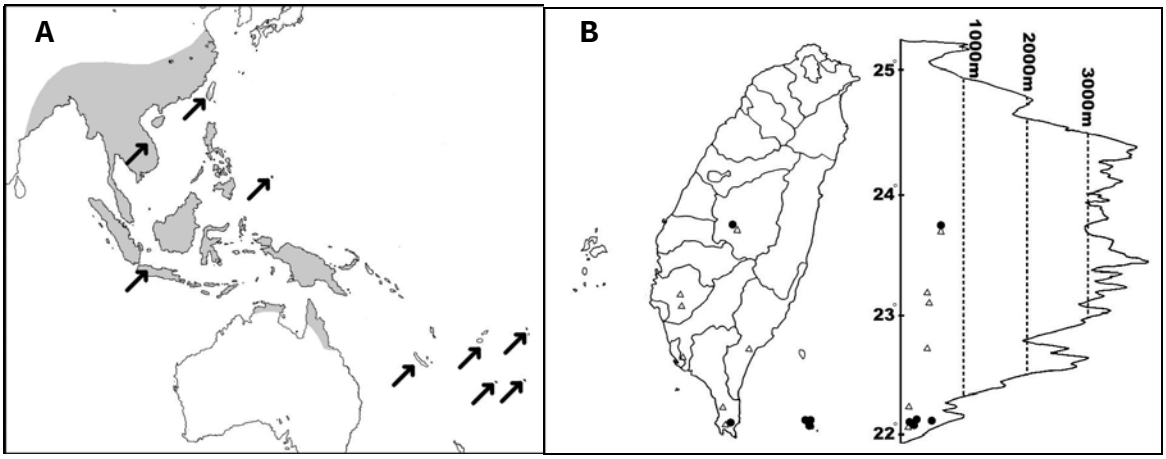


Fig. 1. Distribution map of *Didymoplexis micradenia* (arrowhead / solid circle) and *D. pallens* (gray colored area / open triangle) in the world (A) and in Taiwan (B).

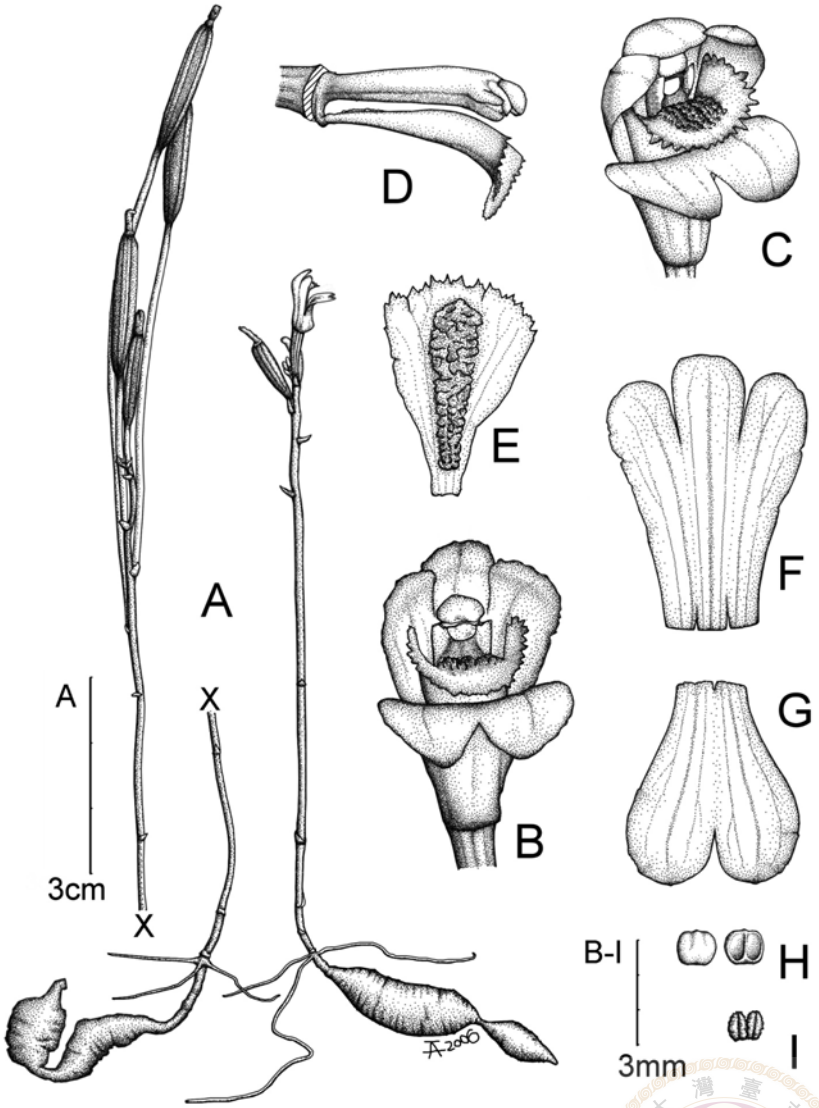


Fig. 2. *Didymoplexis micradenia* (Rchb.f.) Hemsl. A: Habits in different growth phase. B, C: Varied views of flowers. D: Column and lip. E: Lip. F: Connate dorsal sepal and petals. G: Connate lateral sepals. H: Various views of anther. I: Pollinia.

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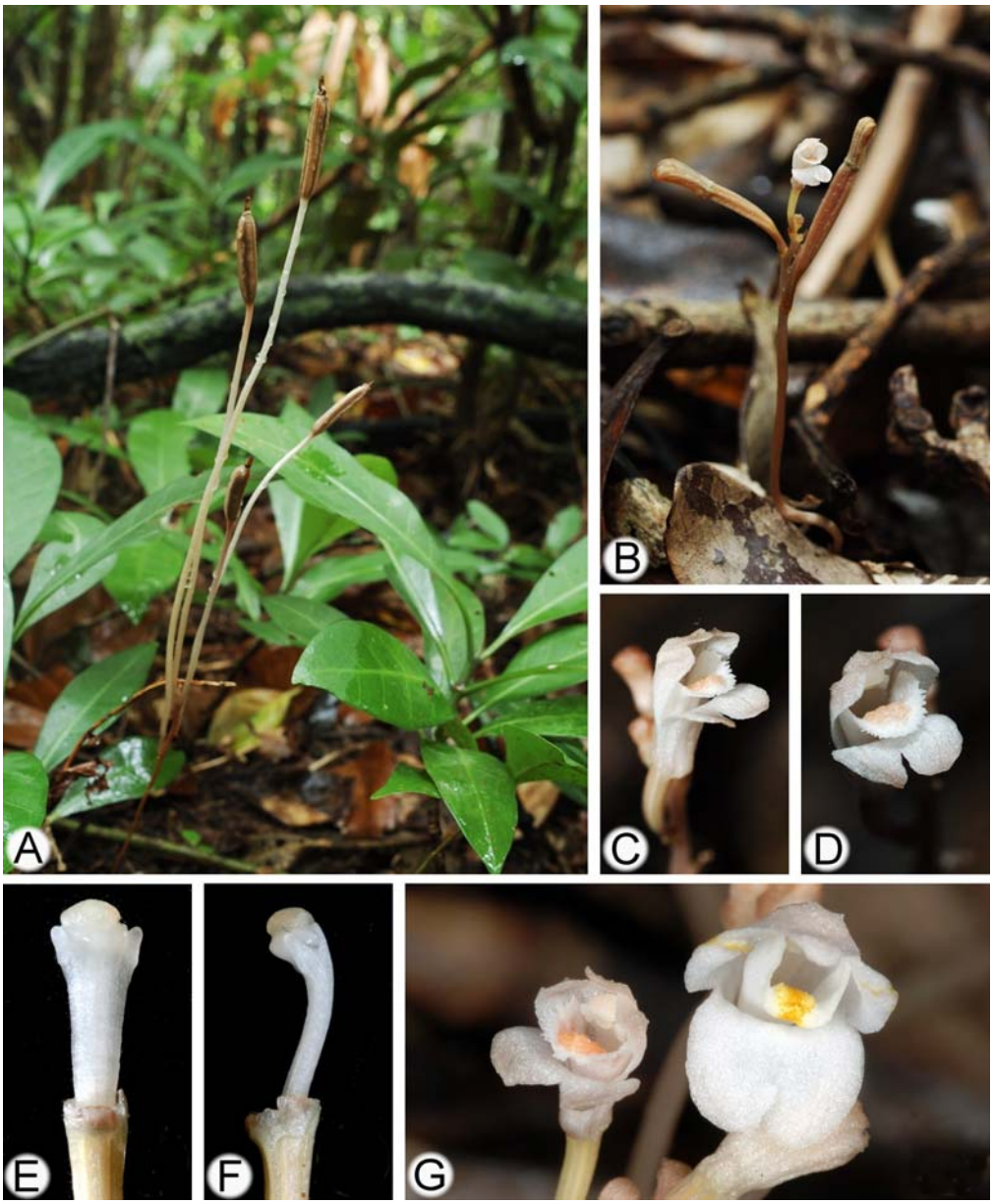


Fig. 3. *Didymoplexis micradenia* (Rchb.f.) Hemsl. A: Habitat and growth habit in fruit. B: Growth habit. C & D:Varied views of flowers. E: Ventral view of column. F: Side view of column. G: Flowers of *D. micradenia* (left) and *D. pallens* (right).

pairs, white, soft, ellipsoid, connected by broad viscidium detached from rostellum. Capsules cylindrical, 1.8-2.2 cm long, triagonal in cross section; pedicel lengthening 10-25 cm long in fruit, ca. 2 mm in diam., fleshy.

Specimens examined: Nantou County, Lugu Hsiang, Xidicheng, ca. 300 m in elevation, 2007 May 18, *T. C. Hsu & S. W. Chung 801* (TAIF); Pintung County, Manjhou Hsiang, Jiutzuo, ca. 100m in elevation, 2007 May 26, *T. C. Hsu & S. W. Chung 821* (TAIF); Taitung County, Lanyu Hsiang, Tianchi, mountain ridge, ca. 220 m in elevation, 2004 Apr 13, *S. W. Chung 8327* (TAIF); Xiaotianchi, ca. 200 m in elevation, 2006 Apr 14, *T. C. Hsu 469* (TAIF); same loc., 2007 May 25, *T. C. Hsu 821* (TAIF); Lanyu Lighthouse, ca. 200 m in elevation, 2006 Apr 14, *T. C. Hsu 470* (TAIF); same loc., 2005 Mar 19, *C. L. Yeh & C. R. Yeh 4032*, *4033* (PPI). From roadway to Tianchi, trailside, ca. 150 m in elevation, 2006 Apr 15, *T. C. Hsu 474* (TAIF); same loc., 2005 Mar 19, *C. L. Yeh & C. R. Yeh* 4034, 4035 (PPI); Dongqingxi, ca. 300m in elevation, 2007 May 24, *T. C. Hsu 815* (TAIF)

Distribution: Samoa, Vanuatu, New Caledonia, Fiji, Tonga, Niue, Palau, West Java and Vietnam; Taiwan, scattered on central and southern lowlands, and the southeast islet of Lanyu.

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Phenology: Flowering observed from late March to May. Fruiting from April to June.

Notes: In the past *Didymoplexis pallens* Griff., which is distributed in the central to southern part of the main island (Su, 2000), has been the only reported *Didymoplexis* in Taiwan. Recently, few photographs have been taken and specimens collected for the *Didymoplexis* species in Lanyu, but most researchers regarded them as *D. pallens* (Yeh et al., 2006). After thoroughly studying the fresh flowering *Didymoplexis* samples collected in Lanyu, we found that some characteristics differ from those of *D. pallens* in Taiwan. The Lanyu species exhibits a smaller growth habit and flower, narrower and more connate lateral sepal, narrower lip with erose apical margin, and very short column foot. These characters almost agree with the description and line drawing of a Java species *D. minor* (Smith, 1908; Comber, 1990).

Lewis and Cribb (1989) treated *D. minor* as a synonym of *D. micradenia* (Rchb. F.)Hemsl. The description of *D. micradenia* (Hemsley, 1938; Lewis and Cribb, 1989; Cribb and Whistler, 1996) showed similar floral morphology with *D. minor*, except for the almost entirely fused lateral sepal. These differences may be regarded as normal variation between populations. We follow this treatment here and our discovery extends the northern distributional range of *D. micradenia* into Taiwan.

In 2007 we found *D. micradenia* populations again in central and southern Taiwan that differ from the Lanyu populations which grow in the wet rain forests. *Didymoplexis micradenia* in the main island was found mixed with *D. pallens* in seasonal drought forests, or under bamboo plantations. Despite overlapping habitats and flower season, these two species can be clearly distinguished by floral morphology mentioned above, and no transition forms or hybrids were found in the field. Additionally, *D. pallens* has not been found in Lanyu to date. The fruit stalks of *D. micradenia* elongate rapidly after pollination, which is also observed in other *Didymoplexis* and some *Gastrodia* species in Orchidaceae.

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臺灣新紀錄蘭科植物：小鬼蘭

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摘　　要

近年我們在臺灣中南部與蘭嶼發現了臺灣蘭科的新紀錄種：小鬼蘭 *Didymoplexis micradenia* (Rchb. f.) Hemsl.。本種近似吊鐘鬼蘭 *D. pallens* Griff.，但由唇瓣較窄且末端具細齒緣、蕊柱足部不顯著等特徵可清楚分辨。本文並提供描述、圖片與臺灣鬼蘭屬之檢索表。

關鍵詞：蘭科、小鬼蘭、新記錄、分類、臺灣。

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