Newly Discovered Native Orchids of Taiwan (II)

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ABSTRACT: In this report, two newly discovered native orchids, Corybas shanlinshiensis and Nervilia crociforals, are presented. Also description and figures of Dendrobium luzonense were provided.

KEY WORDS: Native orchid, Corybas shanlinshiensis, Dendrobium luzonense, Nervilia crociforals.

INTRODUCTION

In a long journey of searching for native orchids, the first author continues to find species that have never been reported. One of the great discoveries was Saccolabiopsis wulaokenensis Lin, Huang & Lin which we previously reported (Lin et al., 2006). These efforts have certainly produced very fruitful results, and many more new orchids are expected to be found in Taiwan. Herein, we report two new plants.

TAXONOMIC TREATMENTS

1. Corybas shanlinshiensis sp. nov.

杉林溪盔蘭 Figs. 1 & 2A


Plant including flower 3-4 cm tall. Tuberoids white, ovoid, usually < 4 mm long, minutely pilose. Rhizomes erect, 5-13 mm long, tapering downward, pilose where new rhizome and tuber are found. Stem usually < 3 cm long, buried in debris, glabrous, with a tubular sheath at base. Leaves sessile, cordate, usually < 2 cm long, 2 cm wide, cuspidate at apex, entire, greenish, glabrous on both sides, venation palmate. Pedicel and ovary 4 mm long, obliquely ovoid. Flowers solitary, purplish-red; bracts linear-lanceolate, < 12 mm long, 2 mm wide at base, acuminate; dorsal sepal incurved and embracing upper part of lip, spatulate, 17 mm long, 8 mm wide, round at apex, keeled longitudinally; lateral sepals connate at base for about 1/5 of length, filiform, 14 mm long, 1 mm wide at base; petals filiform, usually < 20 mm long, spreading. Lip orbicular in outline when flattened, both sides incurved and completely embracing column, forming a tube with opening about 8 mm across and 10 mm long, minutely serrate along front margins; disc with 5 red concentric markings, anterior limb abruptly recurved at apex, basal part forming 2 horn-like spurs; spurs 5 mm long and 6 mm apart. Column dark red, 2.5 mm long, 1 mm wide, forming a separate protruding callus-like structure in front; anther adnate on column, 1 mm long, anther connective membranaceous, covering pollinia below; pollinia 4, in 2 pairs, with viscidium; stigma protruding, cupular.

Flowering time: July. This orchid usually flowers slightly later than C. sinii (Su, 2000) by 1-2 weeks.

Distribution: So far, found in forests at about 1750 m in the central mountain region, often growing on mossy rocky slopes.

Note: At the Shanlinshi Recreation Area, Nantou County Wang and Lu (1994) have reported the occurrence of Corybas taiwanensis which Su (2000) later considered was different from C. taiwanensis originally described by Lin (1975) but a new record species as C. sinii. In November 2004 the senior author has found Corybas sp. in a planted pine forest, at an elevation of 1750 m in the Shanlinshi Recreation Area. In 2006, he saw a photo of Corybas sp. taken by another orchid amateur from the same location and noted that this Corybas exhibited a slightly different phenotype from C. sinii. In July 2007, he made another trip to the same location where he found about 100 individuals of Corybas,
in fact a mixture of *C. sinii* and another closely related but unknown species of Corybas (now known as *C. shanlinshiensis*). It is hard to imagine how two species of Corybas could grow together with overlapping flowering seasons and still be able to maintain different morphology. Could they be pollinated by different insects? Or have they already evolved reproductive isolation?

*C. taiwanensis* (Lin, 1977) is very similar to *C. sinii*, and *C. shanlinshiensis* and differs from them in the linear upper sepal (Lin, 1977). Basically, *C. taiwanensis, C. sinii, and C. shanlinshiensis* should be considered as a complex species and good material to study plant adaptations and local speciation. The following table lists differences between *C. sinii* and *C. shanlinshiensis*. (Table 1)
Table 1. The differences between *C. sinii* and *C. shanlinshiensis*.

<table>
<thead>
<tr>
<th>Character</th>
<th><em>C. shanlinshiensis</em></th>
<th><em>C. sinii</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper sepal</td>
<td>Apex wide and rounded</td>
<td>Apex narrow and caudate</td>
</tr>
<tr>
<td>Lip margins</td>
<td>Minute serrate</td>
<td>Fimbriate</td>
</tr>
<tr>
<td>Lip opening</td>
<td>Narrower at the opening, 0.8 cm across</td>
<td>Widely open, 1.3 cm across</td>
</tr>
<tr>
<td>Lip disposition</td>
<td>Basal lip and ovary almost parallel with the leaf surface</td>
<td>Basal lip and ovary almost perpendicular with the leaf surface</td>
</tr>
<tr>
<td>Lateral sepals</td>
<td>Connate at base</td>
<td>Entirely separated</td>
</tr>
<tr>
<td>Position between limb and spur</td>
<td>Limb recurved but still 1 cm away from the spur</td>
<td>Limb recurved and almost against the spur</td>
</tr>
</tbody>
</table>


四重溪脈葉蘭 Figs. 2C & 3


Plant including inflorescence 3-4 cm tall. Corms whitish, ovoid or nearly globose, < 1 cm across. Leaves petiolate, polygonal-ovate or cordate, 3 cm in diameter, acute, cordate at base, green on upper surface, pale green on lower surface, wavy-ruffled along margins, with 7 palmate major veins, leaf emergence only after anthesis; petiole short. Peduncle slender, 2.5-3.0 cm tall, with several sheaths, sheaths tubular; pedicel and ovary 4 mm long. Flowers solitary, not resupinate, facing upward, perianth spreading, 1.8 cm across, anthesis only lasting for 1 day and flower pendent thereafter; sepals lightly greenish, lanceolate, 13-14 mm long, 2 mm wide, acute or acuminate; petals similar to sepals but slightly narrower, 11 mm long, 1.5 mm wide. Lip rhombic, 13 mm long, 8 mm wide, not lobed, both sides embracing column and tube-like, upper part suddenly incurved downward, basal part lightly greenish otherwise whitish, inner surface covered with white hairs, margins in front undulate and fringed, apex acute, disc with 3 longitudinal keels, yellowish. Column white, 6.5 mm long, dilated upward, keeled on dorsal side; anther cucullate; pollinia 4, without viscidium; stigma semiorbicular.

Flowering Season: May to June.

Distribution: Pettersson (1990) reported that *N. crociformis* is very widespread from Africa to Australia and varies widely in flower size and lip morphology. In Australia, it is known as the round shield orchid (Jones, 2006).

Note: This species is only restricted to southern Taiwan: Syhchurngshi and Chechen, Pingtung County (Weimin Lin s.n. TAI259404). This is also the sixth species in the genus *Nervilia* in Taiwan.

Mr. P. Ormerod suspected the *N. trichophylla* Fukuyama is the same as *N. crociformis* (personal communication). Unfortunately we didn’t find the specimen in the TAI for further examination.

Though similar in gross morphology, our entity still has some characteristics different from the description appeared in many publications of
N. crociformis, especially in the labellum. In the Fig. 92 of Seidenfafen (1978) who noted that the labellum was hairy and more or less tri-lobed. In the Lavarack and Gray (1985), they described the labellum trilobed and the disc covered with hair and short papillae. Then in the Pettersson (1991), the labellum trilobed, and the inner surface covered with thin hairs and a few thicker formations more or less arranged in three rows along the center of the lip. He considered this is a widely distributed species in Africa, India, Indo-China, the Philippines and Australia, etc. It is hardly to see hairs on the lip of the Taiwanese N. crociformis. We tentatively consider this plant is a variation of the species.

Dendrobium luzonense was recorded for the first time in the book entitled *A field guide to wild orchids of Taiwan*, Vol. 2 (Lin, 2006). Here, we provide more information about this orchid.

3. *Dendrobium luzonense* Lindl. in Bot. Reg. 1844, Misc. 54; Merrill in An Enum. Philippine Flowering Pl. 1: 351. 1925. 呂宋石斛 Figs. 2B & 4

*D. alagense* Ames in Phil. J. Sci. 2: 328. 1907.

Stems tufted, stiff, straight, up to 75 cm long, 2.7 mm in diameter, greenish-brown, leafy in upper part; internodes 2.5-3.5 cm long, loosely covered with leaf sheaths. Leaves linear, 9 cm long, 9 mm wide, acuminate, base contracted, articulated with tube-like sheath. Cymes lateral on leafy part of stem, 2-flowered; no peduncle; pedicel and ovary 1.1 cm long. Flowers yellowish, glabrous, ca. 1.6 cm across; upper sepal oblong, 9 mm long, 4 mm wide, yellowish, apex revolute; lateral sepal 9 mm long and 7 mm wide at base, more or less recurved, forming a mentum 4 mm long; petals 8 and 3 mm long. Lip 3-lobed, 8.5 mm long, glabrous, brownish, central part yellow and slightly ridged, basal part clawed and connate with a column-foot; terminal lobe oblong, 4-4.5 mm long and 3.5 mm wide; side lobes triangular or tooth-like, 2 mm long. Column about 3 mm long and 2 mm wide; column-foot 4 mm long; pollinia 4, oblong.

Flowering season: Sporadic, flowers last for only 2 days.

Distribution: The Philippines and Taiwan.
Note: This orchid was first discovered growing on Bischofia trifoliata Hook. by Mr. Chien-Chung Chen in a creek-side forest in Lichiashi, Taitung County, southeastern Taiwan at an elevation of 400 m. The medium-sized to large clump-forming species grows on the trunk or overhanging branches. The location is dry with bright sunshine in the winter season. This is a new record species for Taiwan with vegetative part indistinguishable from D. furcatopedicellatum Hay. but with very different flower characteristics.

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Thanks are given to Dr. Chang-Fu Hsieh for writing the Latin description for the new species. Thanks also to Mr. Hong-Wen Liu who provided the photo of Dendrobium luzonense. We are grateful to Mr. P. Ormerod who kindly provided references concerning N. crociformis.

LITERATURE CITED


Taiwan新發現的野生蘭（二）

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摘        要

本文介紹兩種臺灣新的野生蘭：杉林溪盔蘭與四重溪脈葉蘭。此外我們對呂宋石斛加以描述並提供圖片。

關鍵詞：野生蘭、杉林溪盔蘭、呂宋石斛、四重溪脈葉蘭。

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