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Newly Discovered Native Orchids of Taiwan

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ABSTRACT: In this report, four newly discovered native orchids: *Bulbophyllum fimbriperianthium*, *Eulophia pulchra* var. *actinomorpha*, *Saccolabiopsis wulaokenensis*, and *Tropidia nanhuae*, including a new record of the genus, *Saccolabiopsis*, are presented.

KEY WORDS: **Native orchid, *Bulbophyllum fimbriperianthium*, *Eulophia pulchra* var. *actinomorpha*, *Saccolabiopsis wulaokenensis*, *Tropidia nanhuae*.**

INTRODUCTION

In the past several years, the senior author, an enthusiastic amateur, explored many locations throughout the island of Taiwan to take pictures of wild orchids in their native habitats. With his keen sense for native orchids, he has discovered many species that have never been reported previously. This also indicates that many species were ignored by botanists due to extreme similarity of their vegetative parts even with repeat visits; thus the orchid flora of Taiwan is expected to continue to expand. In total, 330 species and varieties in 101 genera were described in the second edition of the *Flora of Taiwan* (Su, 2000). At this stage, a growing number of interested amateurs are involved in the search for new findings. These efforts will surely achieve very fruitful results, and as many as 360 species of orchids may be expected for Taiwan. Herein, we report several new plants in Taiwan.

TAXONOMIC TREATMENT

1. ***Bulbophyllum fimbriperianthium*** sp. nov.
流蘇豆蘭 Figs. 1 & 5A

> *Bulbophyllum fimbriperianthium* designur ciliis claviformibus marginem perianthii. – Typus: Weimin Lin *s.n.* (holo TAI 256489, Tahanshan, Pingtung County).

Rhizomes long creeping, terete, stiff, 1.8-3 mm in diameter. Pseudobulbs arranged ca. 0.5-1.5 cm apart, ovoid-conic, often oblique, rugose, 1-1.6 cm long, 6-10 mm wide. Leaves solitary, short petioled, oblong or oblong-oblanceolate, thick-coriacious, 4-8.5 cm long, 1.2-2 cm wide, slightly retuse at apex, cuneate at base. Scapes from base of pseudobulb, 6-8 cm long, 1 mm in diameter at base, thicker toward apex, lower part with 2 sheath-like scales, 5-9 mm long; bracts elongate-triangular, 7 mm long; pedicel and ovary 5-8 mm long. Flowers 4-8 in a very short raceme, umbellate, 2.4-3.5 cm long, 7-9 mm across; upper sepal oblong, obtuse, or rounded at apex, white with red veins, deep red at terminal, concave, 6-9 mm long, 4-6 mm wide, 5-nerved, with long white cilia on margins, much longer towards apex; lateral sepals apple-green at beginning, turning yellowish-green then yellow after that, obliquely linear-lanceolate, 2.3-3.3 cm long, 4-5 mm wide at base, obtuse at apex, incurved dense brown cilia along lower margins while loosely ciliate on upper margins; petals obliquely elliptical, obtuse or rounded at apex, white with red veins, deep red at terminal, open widely on terminal half, 4-5 mm long, 2.5-3 mm wide, with long white cilia; lip attached to tip of column foot, whitish-yellow tinged with orange-red towards base, horn-like, rounded at apex, 2.8-3 mm long, recurved, disc shallowly grooved, while deeply grooved on lower side; column semiterete, < 2 mm tall, column-foot without appendage, upcurved. Stylids (stelidia) with a slender tooth; anther operculate, cordate, or cubiform, erose on lower side; pollinia 4, ellipsoid, in 2 collateral pairs.

Flowering time: Flowering observed mainly in September and October.

Ecology: This species is known only from Dahanshan, Pingtung County at elevations of 1300-1400 m and was found by Chao-Ching Lee, Hong-Wen Liu, and Wei-Min Lin. It grows in aggregations on trunks and branches of conifers.

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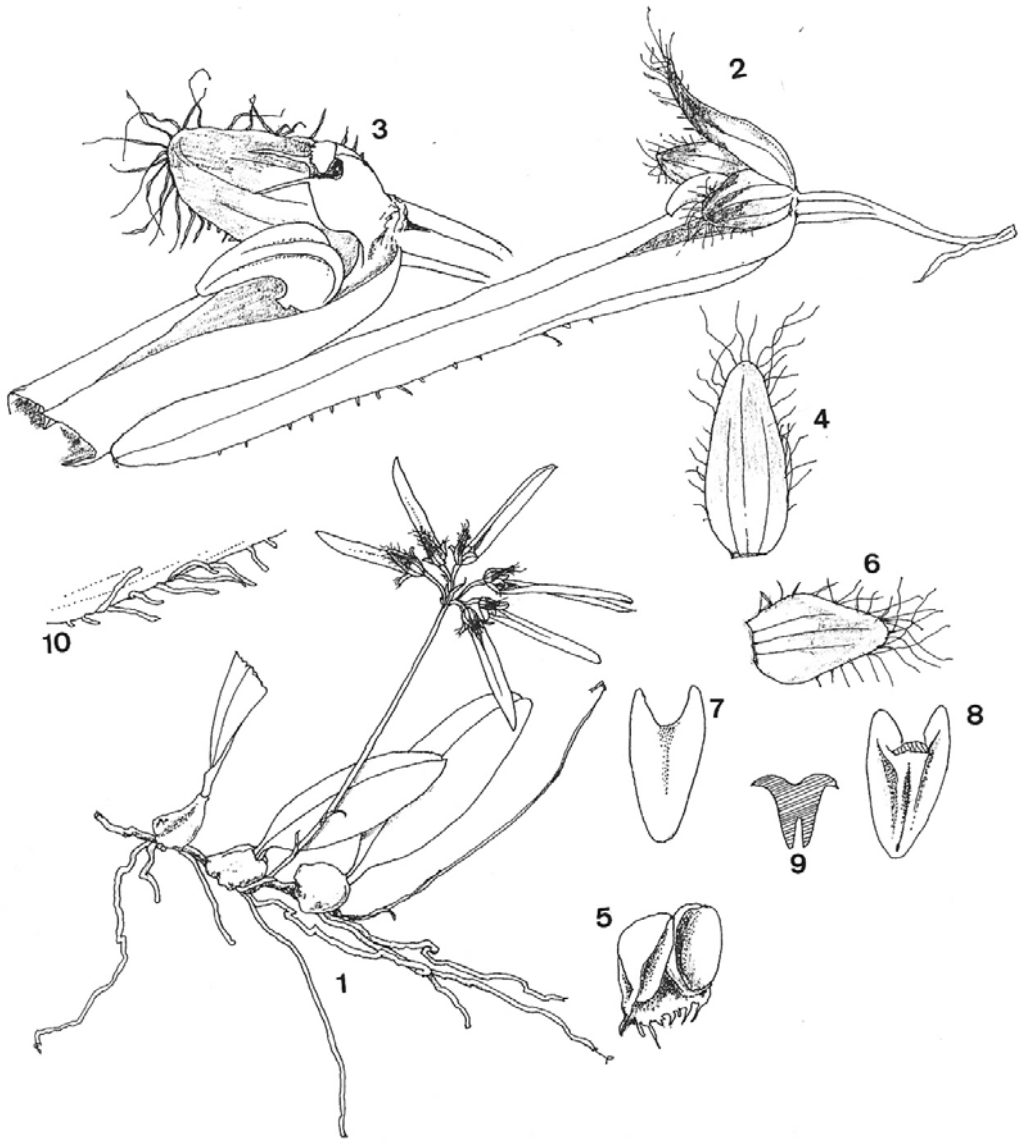


Fig. 1. *Bulbophullum fimbriperianthium* sp. nov. 1: Plant body and inflorescence. 2: Side view of flower. 3: Side view of flower without upper sepal. 4: Upper sepal. 5: Ventral view of anther cap. 6: Petal. 7: Top view of lip. 8: Ventral view of lip. 9: Cross-section of lip. 10: Lower margin of lateral sepal showing the club-like cilia.

Distribution: Endemic to southern Taiwan.

Notes: The specific name refers to the hairy margins of floral perianth. It is well characterized by the club-like white cilia occurring on the lower margin of lateral sepal (Fig. 1) that have never been found in other native species of *Bulbophyllum*.

2. ***Eulophia pulchra*** (Thouars) Lindl. var. ***actinomorpha*** var. nov.

輻射芋蘭 Figs. 2 & 5B

Eulophia pulchra var. *actinomorpha* differt a typico varietato radialibus symmetriis dispositis perianthii. — Typus: Weimin Lin *s. n.* (holo TAI 256485, Beyishan, Pingtung County)

Habit of *Eulophia pulchra* var. *pulchra*. Flower pale green, not open widely. Sepals and petals more or less similar, 1.3-1.4 cm long, 3.4-4 mm wide, elongate-elliptic, acute to acuminate, slightly oblique; lateral sepals forming an angle of 60°; petals parallel, overarching the column, blotched purplish-red on upper (inner) halves. Lip with same shape as petal but slightly wider, blotched purplish-red. Column terete, 4.5 mm long, 3 mm wide; anther cap 1 mm tall; rostellum inconspicuous and tending to selfing; pollinia 2, yellow.

Flowering time: October to December.

Ecology: This variety was found for the first time in 2004 by Mrs. Ya-Wen Deng in a broadleaf forest

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Fig. 2. *Eulophia pulchra* var. *actinomorpha* var. nov. 1: Plant body and inflorescence. 2: Side view of flower. 3: Ventral view of flower. 4 and 5: Upper sepal and lateral sepal. 6: Petal. 7: Llip. 8: Upper view of column. 9: Ventral view of column. 10: Side view of column. 11: Side view of anther cap. 12: Ventral view of anther cap.

of Beyishan, Pingtung County at an elevation of 200 m.

Distribution: Endemic to southern Taiwan.

Notes: This orchid has exactly the same vegetative part as *Eulophia pulchra* var. *pulchra* (Lin, 1987), but is characterized by the actinomorphic flower. Since the lip is mutated to a perianth just like the petal, the round spur occurring in *Eulophia pulchra* var. *pulchra* has disappeared from this variety. This is so-called peloric because often time the gene(s) which control floral asymmetry have mutated. Determining this will require further investigation.

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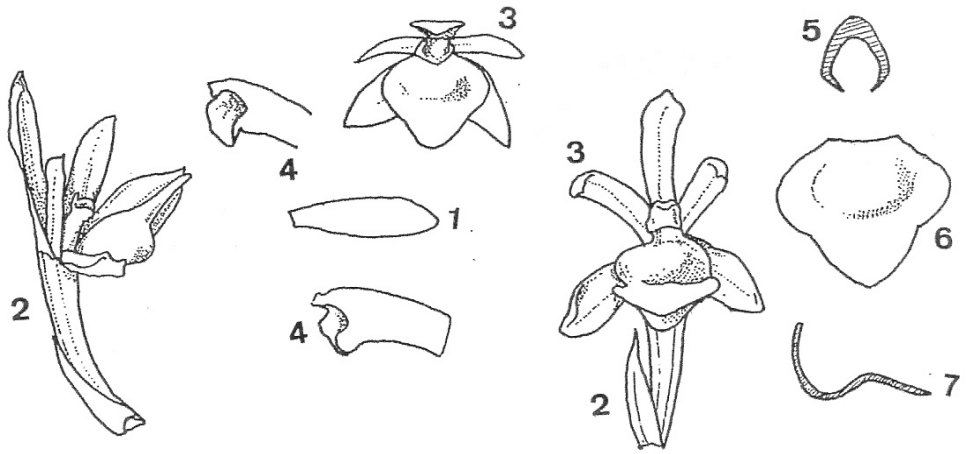


Fig. 3. *Saccolabiopsis wulaokenensis*. 1: Lateral sepal. 2: Side view of flower. 3: Front view of column. 4: Side view of column. 5: Cross section of column. 6: Top view of lip. 7: Longitudinal section of lip.

3. ***Saccolabiopsis wulaokenensis*** sp. nov.
假囊唇蘭 Figs. 3 & 5D

Herba epiphytica. Caulis vix 3-6 cm altus, complanatus, vaginis foliorum obtectus. Folia 2.2-5 cm longs, 0.6-1.2 cm lata, oblongo-lanceolata. Pedunculus cum racemo 3-7 cm longus, multiflorus, angulatus. Flores minuti, virides, labello albido. Sepala petalaque unnervia. Sepala lateralia circa 2 mm longa. Sepalum uppere simile. Petala subspathulata, obtuse. Labellum circa 2 mm longum, leviter trilobatum, basi gynostemii adfixum, profunde saccatum; lobi laterals vix distincti; lobus medius semiovatus, obtusus. — Typus: Weimin Lin *s. n.* (holo TAI 258035, Wulaokenchi, Ilan County).

Plants epiphytic, 3-6 cm long. Leaves distichous, 3-8, oblong-lanceolate, slightly curved, 2.2-5 cm long, 0.6-1.2 cm wide. Flowering stem axillary, 3-7 cm long, dilated in the middle part, about 0.2 cm in diameter, tapering on both ends, grooved, bearing 10-35 well-spaced whitish-green flowers, branchless. Bracts triangular, 2 mm long. Flowers widely opened, 2.5-3.5 mm in diameter. Sepals oblong, 2-2.5 mm long; petals subspatulate, 2 mm long; lip 3-lobed, 1.5 mm wide, side-lobes round, midlobe semiovate or triangular, white, saccate at base and no appendage inside. Column 1 mm long, with conspicuous rostellum, footless; pollinia 2 on a long stipe, stigma deeply located underneath. Capsules club-like, 1.7-1.9 cm long.

Flowering season: April.

Ecology: Grows on branches in broadleaf forest of the Wulaoken River, Ilan County, northern Taiwan at an elevation about 300 m.

Distribution: Endemic to northern Taiwan.

Notes: Garay (1972) gave the following generic description: Characterized by the minute, thin flowers. Sepals and petals ringent. Lip firmly adnate to base of column, saccate or spurred with wide, broad opening, with no appendages inside. Column small, cylindric, footless. Pollinia 2, each completely divided into very unequal halves on a long, slender stipe. Plants usually small with slender inflorescence. Rachis loosely many-flowered, racemose or rarely subpaniculate. Basically our plant agrees well with the above description.
Schltr. or *Haraella retrocalla* (Hay.) Kudo, this new plant has a leaf texture close to *T. saruwatarii* and *Diploplora chmapionii* (Lindl.) Hook. *Saccolabiopsis* however is characterized by the greater diameter in the middle part of the peduncle, and smaller flowers that are comparable in size with those of *Schoenorchis paniculata* Bl.

4. *Tropidia nanhuae* sp. nov.
南化摺唇摺蘭 Figs. 4, 5C & 6

Tropidia nanhuae Tropidia curculigoides Lindel affine sed planta minore. — Typus: Weimin Lin *s. n.* (holo TAI 256769, Nan-Hua Dam, Tainan County)

Stem 25-40 cm tall, more or less flattened. Leaves 3-5 per stem, lanceolate-oblong, usually less than 16 cm long, 2.7 cm wide, apex acuminate, base rounded; sheaths long. Inflorescence terminal, 1.5 cm long; bracts lanceolate, glabrous. Flowers fewer than 25, dense, not resupinate, greenish-white, glabrous, 6.5 mm long, 4 mm wide; pedicel and ovary about 4 mm long; sepals subequal, upper

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Fig. 4. *Tropidia nanhuae* sp. nov. 1: Plant body and inflorescence. 2: Side view of flower. 3: Front view of flower. 4: Upper sepal. 5: Cross section of petal. 6: Petal. 7: Side view of flower without the upper sepal. 8: Dorsal view of column. 9: Ventral view of column. 10: Cross section of column. 11: Side view of lip and column. 12: Side view of column and anther cap. 13: Pollinia. 14: Top view of lip. 15: Cross section of lip. 16: Bottom view of lip. 17: Cross-section of stem.

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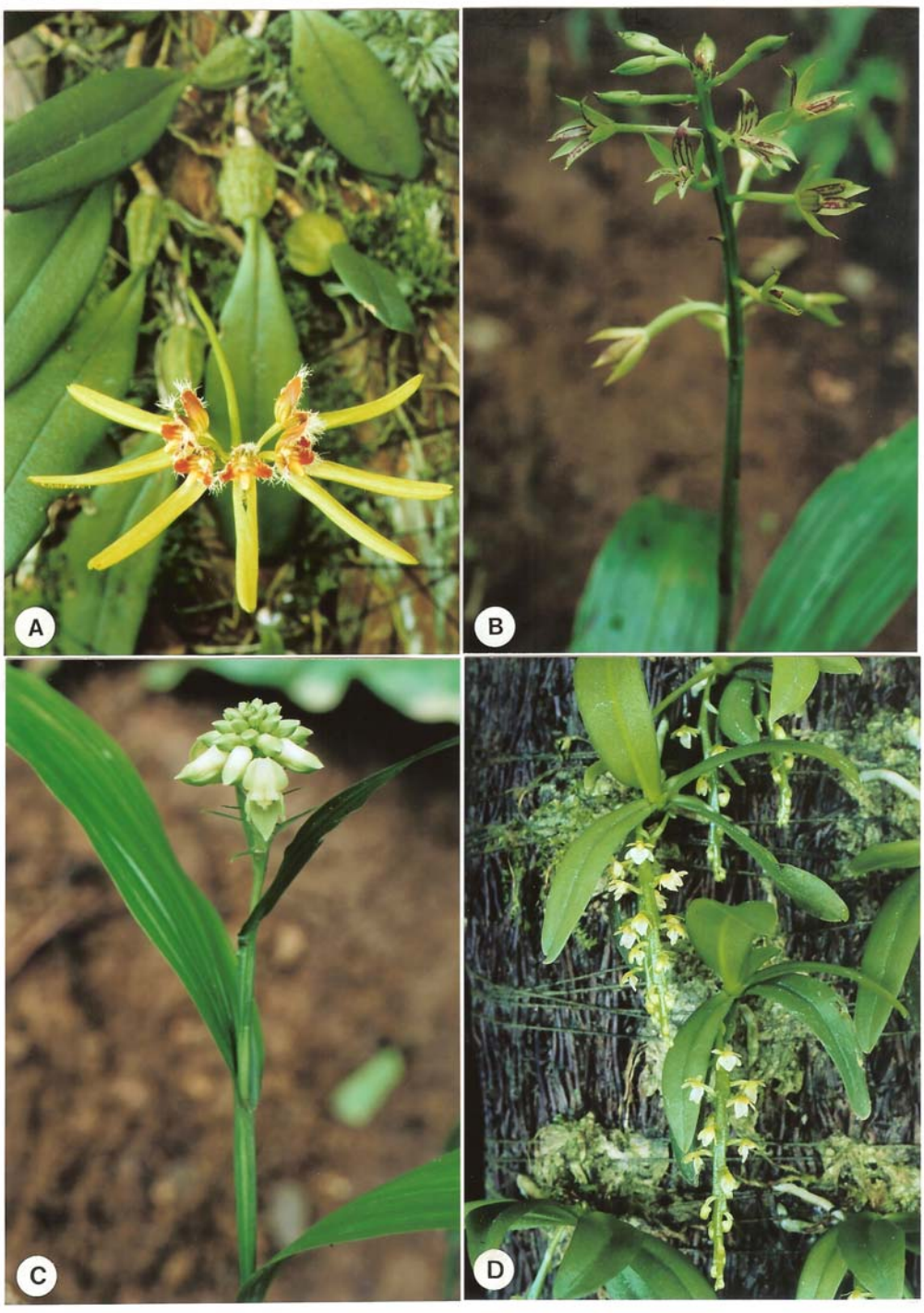


Fig. 5. A: *Bulbophullum fimbriperianthium* sp. nov. B: *Eulophia pulchra* var. *actinomorpha* var. nov. C: *Tropidia nanhuae* sp. nov. D: *Saccolabiopsis wulaokenensis* sp. nov.

sepal free, lanceolate, 5 mm long, 2.5 mm wide, concave; lateral sepal connate 3/5 their length and forming a saccate at base, about 6 mm long, 3 mm wide; petals lanceolate, 5 mm long, 2 mm wide,concave, keeled; lip ca. 5.5 mm long, 2 mm wide, bilobed saccate at base, ligulate and recurved at apex, 2 rounded calli at front part, disc with 2 longitudinal ridges; column straight, including rostellum 3 mm long; anther cap ovate, fleshy, 3-3.3 mm long, round at apex; pollinia clavate, stipe slender; viscidium linear-lanceolate; stigma broadly triangular.

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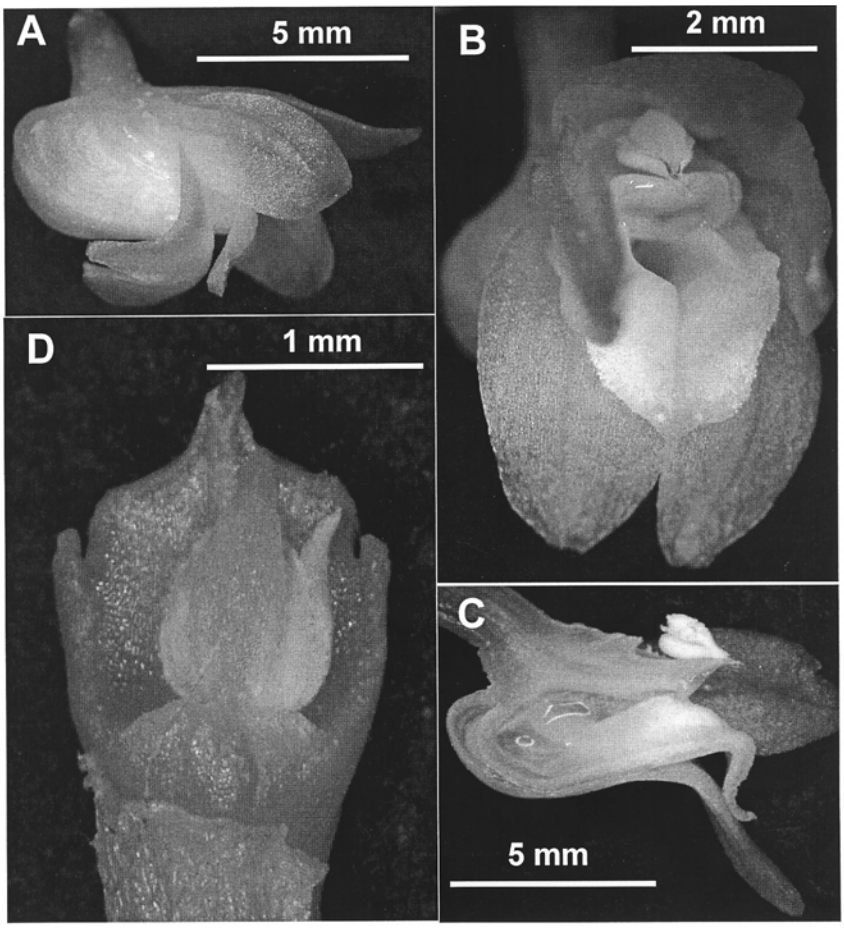


Fig. 6. Enlargement of flower of *Tropidia nanhuae* sp. nov. A: Side view of flower. B: Front view of flower showing connate lateral sepals. C: Longitudinal section of flower. D: Top view of column with anther cap.

Flowering time: October to November

Ecology: This orchid was first collected by Mr. Yu-Shan Huang, an orchid-hobbyist, from a trail near the Nan-Hua Dam (close to Chiahsien), Tainan County at an elevation about 150 m. It grows in a bamboo forest, but only 5 individuals have been located.

Distribution: Endemic to southwestern Taiwan.

of *T. curculigoides*, however, are usually separated instead (Leou, 1991). *Tropidia nanhuae* bears a long inflorescence stem, more than 20 flowers in a dense raceme, and a greenish perianth. In contrast, the inflorescence of *T. curculigoides* is mostly axillary, and the raceme is almost sessile, with only a few white flowers in the inflorescence. According to these characteristics, we tentatively consider this a new species of *Tropidia*.

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台灣新發現的野生蘭

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摘　　要

本文介紹四種臺灣新的野生蘭：流蘇豆蘭、輻射芋蘭、假囊唇蘭、南化摺唇摺蘭，包含新紀錄屬假囊唇蘭屬 *Saccolabiopsis*。

關鍵詞：野生蘭、流蘇豆蘭、輻射芋蘭、假囊唇蘭、南化摺唇摺蘭。

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