

Vanoverberghia sasakiana H. Funak. & H. Ohashi (Zingiberaceae), a New Species and a New Generic Record for the Flora of Taiwan

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ABSTRACT: *Vanoverberghia* Merr. is formerly considered monotypic and endemic to the Philippines, but a new species, *Vanoverberghia sasakiana* H. Funak. & H. Ohashi is proposed here. The new species is distinguished from the other species, *V. sepulchrei*, by smaller habit with sessile leaves, translucent white bracts and smaller flowers without nectary. The new species was found at Lanyu Is., Taiwan, where is known for its rich flora containing many Philippine floristic elements. Description, illustration, and color photos of the new species are provided.

KEY WORDS: *Vanoverberghia sasakiana*, Zingiberaceae, New species, New generic record, Lanyu Island, Taiwan.

INTRODUCTION

In the course of preparing revision of Taiwanese *Alpinia*, specimens representing a new species of *Vanoverberghia* were found. Comparison was performed based on fresh material of the new species collected at Lanyu Is., Taiwan with *V. sepulchrei* cultivated in Lyon Arboretum, Hawaii.

Taxonomic Treatment

***Vanoverberghia sasakiana* H. Funak. & H. Ohashi, sp. nov.** 蘭嶼法氏薑 Figs. 1-5

Differt a *V. sepulchrei*, folio sessili, pedunculi viridi, bractea alba, tubo corollae brevior, petalo curto, apice lobi labeli leviter bifido, antherae brevi, nectario absenti.

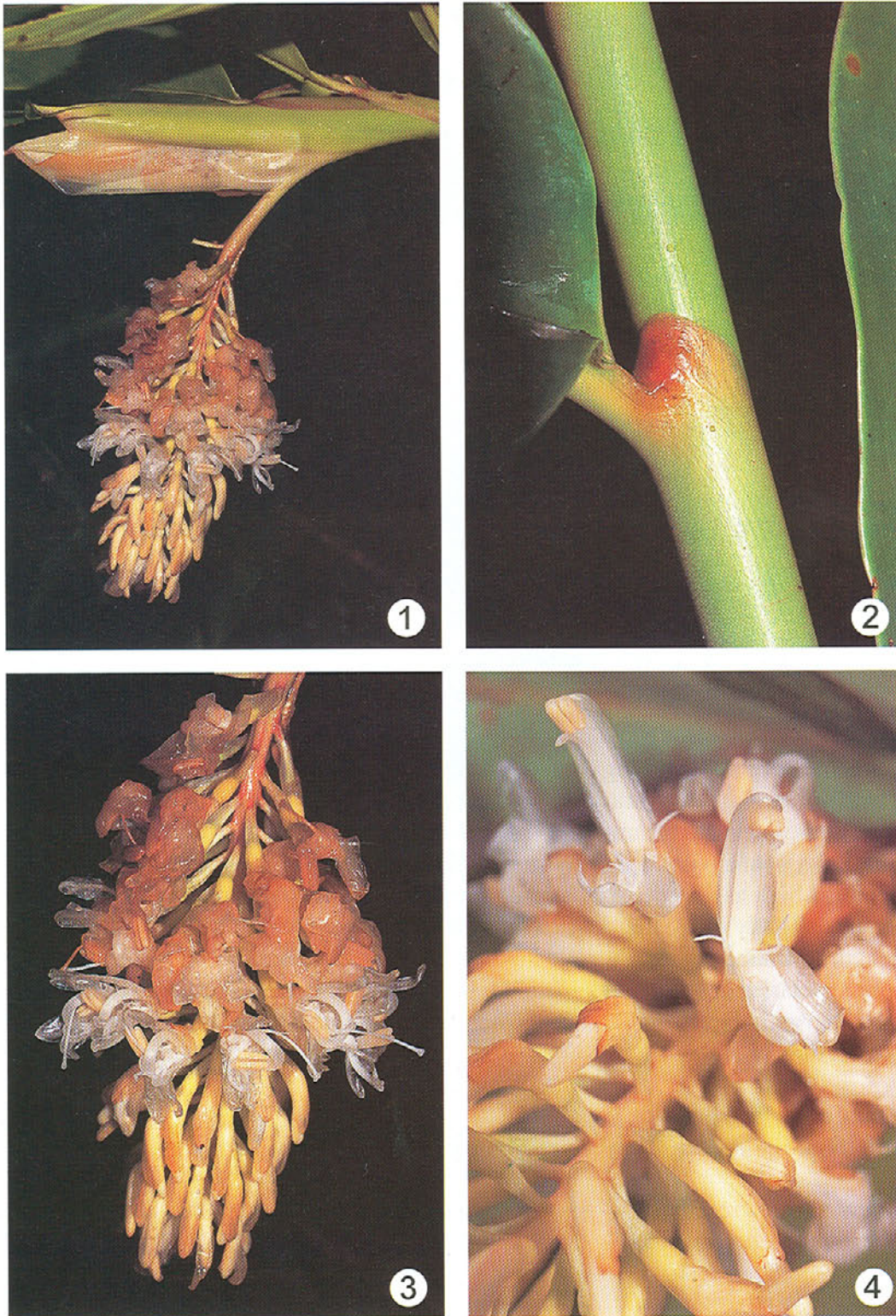
Specimens examined: Taiwan, Taitung County, Lanyu Is.: Yeyou Vill., Mt. Hontou, 350 m alt., 30 Sept. 1998, H. Funakoshi & T.-T. Chen 1936 (holotype, TI; isotype, AAU, K, TAI, US); Kotosho (=Lanyu Is.), July 1912, S. Sasaki s.n. (TAI); Wangnanchiau – Tengchi, alt. 20 – 350 m, 12 Nov. 1982, Tateishi et al. 15306 (TUS); Lanyu Is., 20 Sept. 1933, S. Sasaki, s.n. (TAI); 20 Sept. 1972, C.-T. Moo 2339 (TAI).

Erect, tufted herb, ca. 2 m tall, drooping toward top of pseudostem. Leaves sessile, glabrous, coriaceous, oblong, longest blade 50-55 x 11-13 cm, apex sharply long-caudate with a flagellate tip twisting and 5-8 cm long, base attenuate, ligules auriculate, reddish brown, glabrous, coriaceous, entire, rounded, 5 mm long, about three uppermost sheaths inflated, when spread up to 3 cm wide with a little vestige of leaf. Inflorescences terminal, racemose, sometimes pendulous, flower-bearing part 7-25 cm long; peduncles green, often folded by

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Figs. 1-4. Habit, ligule, inflorescence, flower of *Vanoverberghia sasakiana*. Fig. 1: Habit. Fig. 2: Ligule. Fig. 3: Inflorescence. Fig. 4: Flowers.

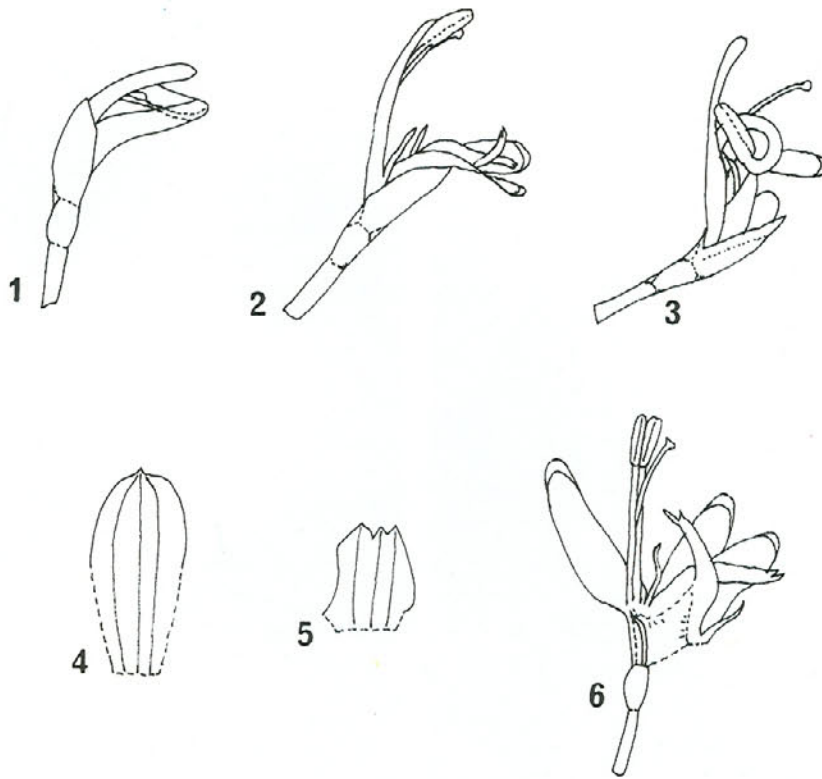


Fig. 5. *Vanoverberghia sasakiana* H. Funak. & H. Ohashi, *sp. nov.* 1: Flower bud. 2: Flower. 3: Flower after anthesis. 4: Bract dissected. 5: Calyx dissected. 6: Flower dissected; bract and calyx removed. (All x 1, from H. Funakoshi & T.-T. Chen 1936)

sheaths, when emerged 3 cm long; bracts spathaceous, translucent white with a brownish tip, 27 x 12 mm when dissected; bracteoles absent. Flowers white, persistent and turning brown after anthesis; pedicels ca. 9 mm long; calyx 3-dentate, 12 x 11 mm when dissected; corolla tube 7 mm long; petals oblong, 22 x 6 mm, slightly cucullate at the apex; labellum connate to lateral petals as high as middle of labellum, free part split into two subulate lobe, 12 x 2.5 mm, of which apex slightly bifid; filament 20 mm long, channeled on the inside, enclosing style up to half length of filament, spirally coiled after anthesis; anther 6 x 2.5 mm; staminodes linear, 10 mm long; nectaries absent; ovary 5 mm long, 3 mm in diameter. Fruits subglobose, 15 x 12 mm, glabrous, with faint longitudinal costae, dehiscent into three divisions. Seeds black, angular, ca. 2 mm.

Habitat: In lowland primary forest.

Distribution: Endemic to Lanyu Is., Taitung County, Taiwan.

The new species resembles *Vanoverberghia sepulchrei*, but both are distinguished from each other in reproductive and vegetative characters as shown in Table 1.

DISCUSSION

After Merrill (1912) established *Vanoverberghia* based on its type species *V. sepulchrei*, Elmer (1915) described another species, *V. diversifolium* from Northern Luzon, Philippines.

But his species was based on fruiting material only and no explicit evidence was shown for its features of the genus, so later treatments exclude the species from *Vanoverberghia* (Merrill, 1925; Larsen *et al.*, 1998).

Table 1. Differences between *Vanoverberghia sasakiana* and *V. sepulchrei*.

	<i>V. sasakiana</i>	<i>V. sepulchrei</i>
pseudostem	2 m high	4 m high
petiole	sessile	1 cm
peduncle color	green	red
bract color	translucent white	brown
corolla tube	7 mm long	17 mm long
petal	22 mm long	30 mm long
labellum lobe	Bifid at apex, 11 mm	Entire at apex, 18 mm
anther	6 mm long	12 mm long
nectary	absent	Present, 2

Vanoverberghia has been regarded as monotypic and endemic to Northern Luzon, Philippines, so the discovery of *V. sasakiana* has its phytogeographical significance. Lanyu Is. is a small volcanic island (46 km²) which locates ca. 70 km SE of Taiwan proper and known for its unique flora. Among 850 species of indigenous vascular plants of the island, 110 species occur in Philippine flora but not in Taiwan proper (Lin and Lu, 1982). To explain this phenomenon, geological evolution of this region is thus considered (Hall, 1998). At 15 Ma (mid Miocene), proto-Luzon Island with some highlands emerged in lat. 10°N, Taiwan had yet to be formed. At 10 Ma (late Miocene), volcanic activity arose to form Batanes Isls. as stepping stones for the Philippine flora. At 5 Ma (early Pliocene), Luzon Is., Batanes Isls. and Lanyu Is. on the Philippine Sea Plate were moving north-westward tectonically (Wang, 1990), while Taiwan proper on eastern edge of the Eurasian Plate had already emerged with high mountain range. At present, Lanyu Is. is much nearer to Taiwan proper geographically than to the Philippines. But historical background affects so much to the floristic component of Lanyu Is., and distribution of *Vanoverberghia* must be a good example to support this hypothesis.

The specific epithet is named in honor of Mr. Shun'ichi Sasaki, who was a devotedly contributive collector of Taiwan Forestry Department and who first noticed this plant as new to science.

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台灣植物之新記錄屬及新種—蘭嶼法氏薑

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摘 要

法氏薑屬 (*Vanoverberghia* Merr.) 原為特產於菲律賓之草型屬，本文提出一新種—蘭嶼法氏薑。此新種發現於蘭嶼，該地素以植物相豐富聞名，其中並包含許多菲律賓植物要素。本文提供新種之描述、繪圖及彩色照片。

關鍵詞：蘭嶼法氏薑，薑科，新種，新記錄屬，蘭嶼，台灣。

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