

Research note

A New Species, *Alpinia nantoensis* (Zingiberaceae), from Taiwan

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【 Summary 】

A new species of *Alpinia*, *A. nantoensis* F. Y. Lu & Y. W. Kuo, from Taiwan is presented in this paper. This species is found in mountainous areas of central Taiwan, at around 900~1500 m in elevation. This new species can be distinguished from *A. pricei* by the tubular and persistent conformation of the bracteole and the rhombic labellum. But the lack of a bracteole in *A. pricei* is the greatest difference. It is also similar to *A. shimadai* var. *shimada*, but *A. nantoensis* has a tubular unlobed, bracteole, and *A. shimadai* var. *shimada* has a shelly bracteole, which is lobed on 1 side.

Key words: *Alpinia nantoensis*, *Alpinia*, Zingiberaceae.

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研究簡報

台灣產月桃屬(薑科)植物之一新種—南投月桃

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摘 要

本文發表台灣產月桃屬(*Alpinia*)植物之一新種植物，南投月桃(*A. nantoensis*)，本種植物特產於台灣中部之山區，海拔高度介於900至1,500 m。本新種在形態上與普來氏月桃(*A. pricei*)相似，但可從其小苞片形態及唇瓣形狀來區分，而普來氏月桃(*A. pricei*)不具小苞片是兩種間最大的差異點。此外，亦近似於島田氏月桃(*A. shimadai* var. *shimadai*)，其差異為島田氏月桃(*A. shimadai* var. *shimadai*)具殼狀小苞片且一端開裂，而南投月桃(*A. nantoensis*)則為管狀小苞片。

關鍵詞：南投月桃、月桃屬、薑科。

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Alpinia, of the tribe Alpinieae in the family Zingiberaceae and containing about 230 species around the world, is mainly distributed in Indonesia, Malaysia, and mainland South and East India (Smith 1990). Plants in this genus can mainly be distinguished by the characters of the inflorescence, bracts, bracteoles, calyx, and labellum (Hussin et al. 2000). The results of DNA sequence-based methods (Kress et al. 2005) showed that the genus *Alpinia* is a polyphyletic group. It is represented by 6 polyphyletic clades containing species of *Alpinia* distributed across the tribe Alpinieae. Unfortunately, those results do not entirely correspond to Smith's (1990) classification of the genus. In the earliest classification literature, *A list of plants from Formosa* written by Henry (1896), 5 species of *Alpinia* were recorded. Hayata (1915, 1916, 1920) recorded 24 species of *Alpinia*, 19 of which were proposed as new species. Later, some investigations and studies were carried out on this genus, and a lot of problems still remain (Masamune 1936, Moo 1973, 1978, Yang 1993, Yang and Wang 1998). A revision of the taxonomy of *Alpinia* was carried out in the past 4 yrs (Kuo 2006), and in this paper, a new species, *A. nantoensis*, from Taiwan is described.

Taxonomic treatment

Alpinia nantoensis F. Y. Lu & Y. W. Kuo sp. nov. 南投月桃 Figs. 1, 2

Caulis 1~1.5 m altis. Folia oblonga vel lanceolata, 25~30 cm longa, 3~6 cm lata, apice acuminata, basi cuneata, utrinque pagina glabra, margine villosa, subtus praeter costas sparse villosas, ligula oblonga, ca 0.3 cm longa, integra vel biloba, extus hirsuta, petioles 0.5~1.5 cm longis. Spica recta erecta, rachis 5~10 cm longa, bracteae sub rachis ellipticae caducosae, bracteola subflore cylindrica 1.5~2.3 cm longa, extus sparse hirsuta, mar-

gine ciliata. Calyx rubellus, cylindricus, ca 1.8 cm longus, leviter 2-lobatus. Corollae albae, tubus ca 0.6 cm longus, lobis 3, lobo postico ca 2.5 cm longo, 1.2 cm lato, lobis laterali-bus angustioribus, apice ciliatibus. Labellum album, ellipticum, vel rotundatum, 2.3~2.5 cm longum, 2~2.3 cm latum, medio rubro-striatum, apice integrum vel crenulatum. Stamen 1, filamentum ca 1.8 cm longo, anthera ca 1.3 cm longa. Staminodia obsoleta. Ovarium viridulum, albo-villosum, ca 0.5 cm longum, 0.4 cm latum. Stylus filiformis, ca 3.5 cm longus, apice infundibuliformis, sparse hirsutus, glandulae connatae, globosae. Capsula rubra, globosa, 1~1.5 cm longa, 1.2~1.4 cm lata, 15~17 costulata, sparse villosa. Semina 20~30, nigro-castanea, polygona, arillis membranaceis albicantibus.

Plant ca 1~1.5 m high. Leaves oblong to lanceolate, blade 25~30 by 3~6 cm, apex acuminate, base cuneate, glabrous on both sides except for margin and midrib below; ligule oblong, ca 0.3 cm long, entire or bilobed, hairy on outer surface; petiole 0.5~1.5 cm long. Inflorescence spicate, erect, rachis villose, pale white, 5~10 cm long; bract deciduous, oblong; bracteoles tubular, 1.5~2.3 cm long, sparsely pubescent, margin ciliate; calyx pale red, tubular, ca 1.8 cm long, short 2-lobed; corolla white, tube ca 0.6 cm long, dorsal lobe 2.5 × 1.2 cm, laterals oblong, 2.5 × 1 cm, margin ciliate; labellum white, ovate, 2.3~2.5 × 2~2.3 cm, with red stripes and spots in center, apex emarginate, margin crispate; stamens 1, filament ca 1.8 cm long, anther ca 1.3 cm long; staminodes minute; ovary greenish, villose, villi white, 0.5 × 0.4 cm, styles ca 3.5 cm long, apex funnel-shaped, sparsely hairy, epigynous glands united on 1 side, columnar. Fruit capsular, red, globose, 1~1.5 × 1.2~1.4 cm, 15~17 costellate, sparsely hairy; seeds 20~30, blackish-brown, angled; aril white, membranous.

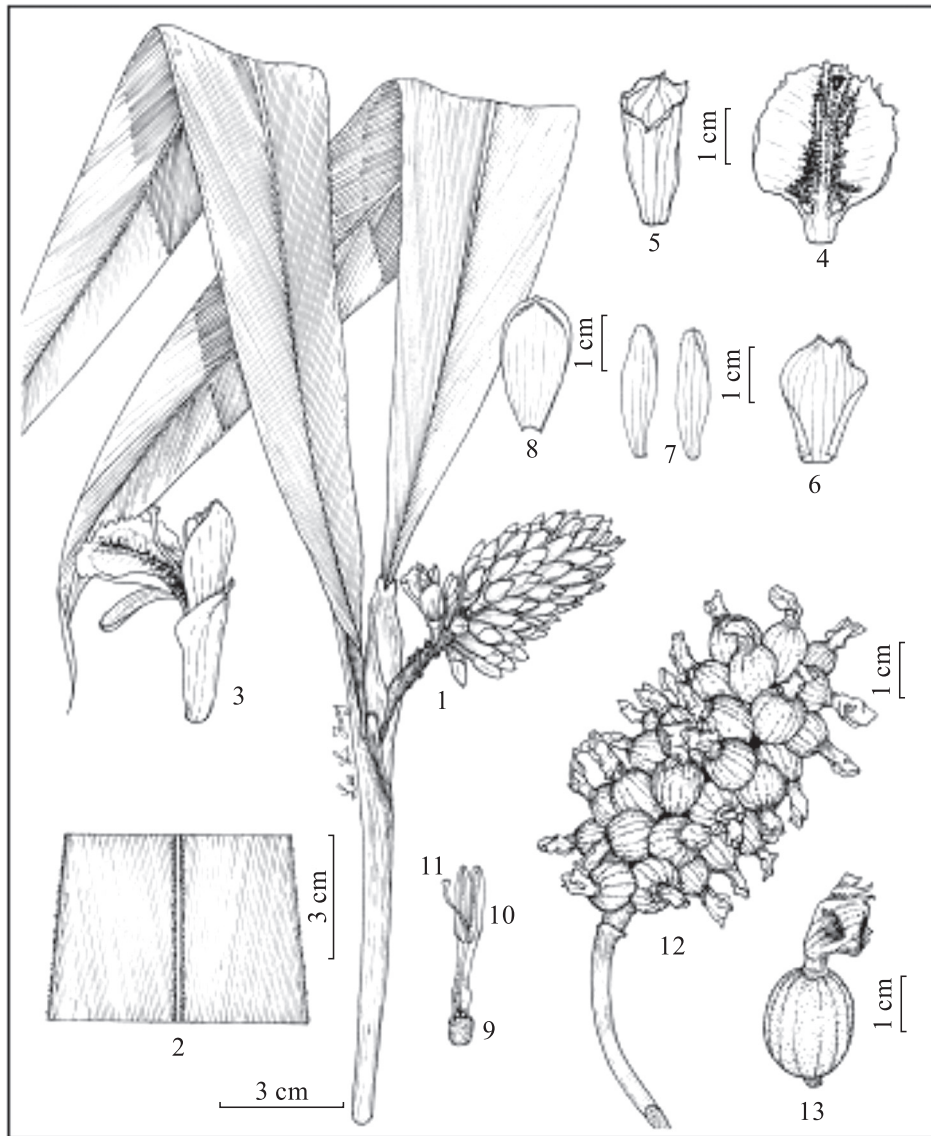


Fig. 1. *Alpinia nantoensis* F. Y. Lu & Y. W. Kuo sp. nov. 1, Inflorescence; 2, leaf below; 3, flower; 4, labellum; 5, bracteole; 6, calyx; 7, lateral lobe of corolla; 8, dorsal lobe; 9, ovary; 10, anther; 11, style; 12, fruiting branch; 13, fruit.

Distribution: Endemic to Taiwan, presently known from mountainous areas of central Taiwan, at elevations of 900~1,500 m.

Holotype: Taiwan. Nantou Co. Wanta mt., April 2004, Y. W. Kuo 0126 (Department of Forestry, National Chiayi University Taiwan: NCAI).

Specimens examined: Taichung Co.: Anma mt., P. F. Lu, 5839 (TAIF); Nantou Co.: Wanta Mt., Y. W. Kuo, 0120, 0125 (NCAI); Ou et Kau, 9358 (TAI); Meifeng, H. L. Chiang, 2454 (TAIF); Puli, S. Y. Lu, 1546 (TAIF); Huisun, Y. W. Kuo, 0263 (NCAI); J. J. Yang, 1214 (TNU).

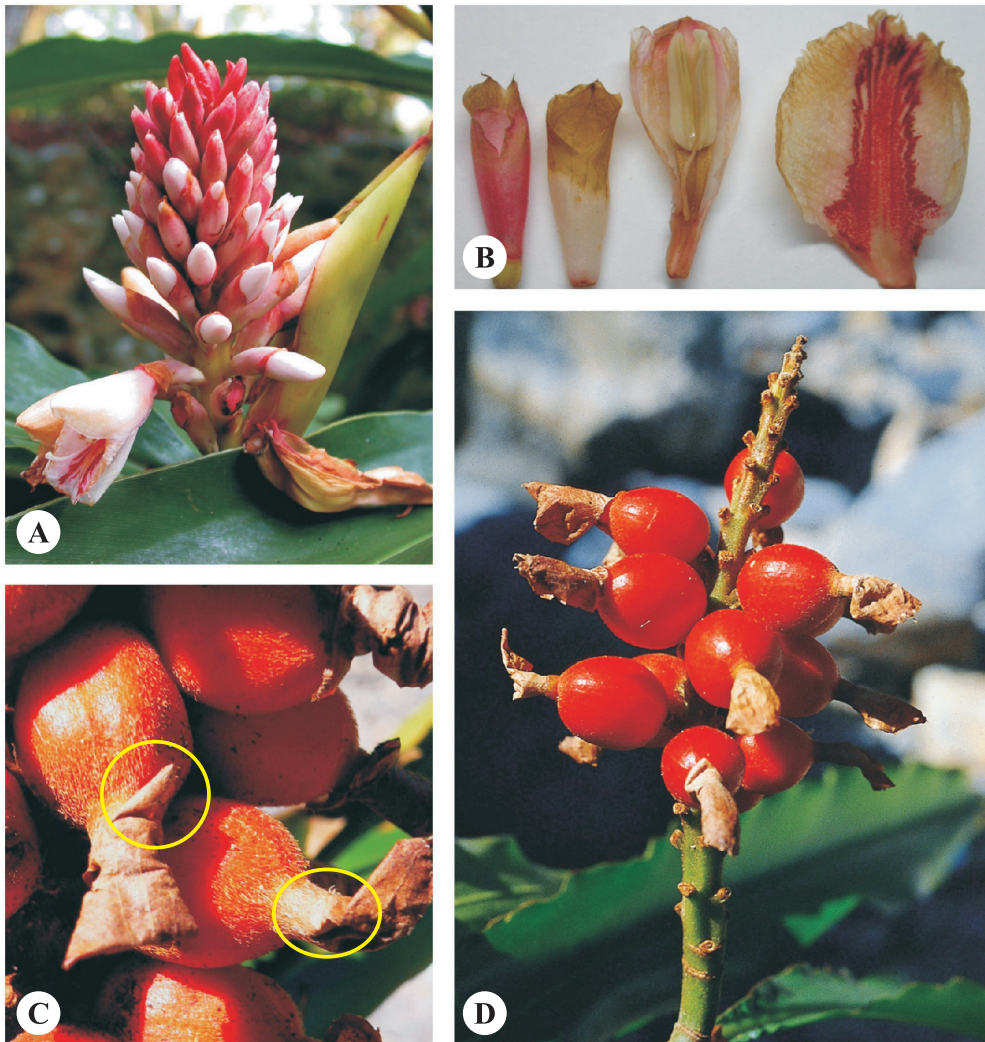


Fig. 2. Color photograph of *Alpinia nantoensis* F. Y. Lu & Y. W. Kuo sp. nov. **A**, inflorescence spicate, erect; **B**, (a) calyx tube; (b) tubular bracteole; (c) anther and lobe of corolla; (d) labellum; **C**, (a) tubular bracteole, persistent; (b) tubular calyx; **D**, bracteole remaining on apex with a fruiting branch and red capsules.

Notes: The size of the leaves and form of the flowers of this species are similar to those of *A. pricei*. Its flower has a bracteole and an oblong labellum, which differs from its congeneric native species of *A. pricei*, which has no bracteole and has a rhombic labellum. It is also similar to *A. shimadai* var. *shimadai*, but in *A. nantoensis*, the tubular bracteole is

1.5~2.3 cm long, and unlobed, while *A. shimadai* var. *shimadai* has a shelly bracteole, ca 1.5 cm long, 1 side of which is lobed, and the fruit usually has persistent bracteoles.

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