

# 中国姜黄属一新种—南昆山莪术

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**摘要:** 报道姜科姜黄属一新种—南昆山莪术(*Curcuma nankunshanensis* N. Liu, X. B. Ye & J. Chen)。该种与近缘种广西莪术(*C. kwangsiensis* X. X. Chen)的区别在于侧根茎分枝多, 叶片阔椭圆状披针形, 表面光滑无毛, 不育苞片下部白色顶端深紫红色, 能育苞片绿色。它与郁金(*C. aromatica* Salib)的区别在于根茎内面白色, 不育苞片下部白色顶端深紫红色, 具有种子。

**关键词:** 姜黄属; 南昆山莪术; 姜科; 广东; 中国; 新种

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## *Curcuma nankunshanensis* (Zingiberaceae), A New Species from China

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**Abstract:** A new species of *Curcuma* L., *C. nankunshanensis* N. Liu, X. B. Ye & J. Chen, is described and illustrated. The new species is similar to *C. kwangsiensis* X. X. Chen, but differs in its lateral rhizome multibranched, leaf blades broad-lanceolate and glabrous adaxially, coma bracts white except for purple toward the apex and fertile bracts green. It is also easily distinguished from *C. aromatica* by its rhizome white inside, coma bracts white except for purple toward the apex, seeds bearing. A key to *Curcuma* from Guangdong is provided.

**Kew words:** *Curcuma*; *Curcuma nankunshanensis*; Zingiberaceae; Guangdong; China; New species

The genus *Curcuma* L. (Zingiberaceae) contains many taxa of economic, medicinal, ornamental and cultural importance. It is distributed in S and SE Asia with a few species extending to China, Australia and the South Pacific, and some economic species worldwide introduced into the tropics<sup>[1]</sup>. The genus is characterized by the primary bracts united laterally forming pouches and by the versatile anther<sup>[2]</sup>. The lack of a comprehensive taxonomic revision makes little consensus on the number of species but recently estimates varies from about 50<sup>[2]</sup> to 80<sup>[3]</sup> or 100<sup>[4]</sup>. Moreover, high intra- and inter-population variation has led to debate on species concepts and boundaries<sup>[1]</sup>.

Many taxonomists were attempted to establish the natural systems for the genus. Roxburgh<sup>[5]</sup> divided the genus into two unnamed sections based on the characters of lateral or central spikes. while Baker<sup>[6]</sup> separated it into three sections, i. e. Sect. *Exantha* (spikes vernal, always lateral), Sect. *Mesantha* (spikes autumnal, terminal, bracts not recurved at the tip) and Sect. *Hitcheniopsis* (spikes autumnal, terminal, bracts very obtuse and spreading at the tip). Schumann<sup>[7]</sup> divided the genus into two subgenera, i. e. subgen. *Eucurcuma* K. Schum. (= subgen. *Curcuma*) and subgen. *Hitcheniopsis* (Bak.) K. Schum., based on the presence or absence of the anther spur. Schuman's

system was accepted by many authors<sup>[2,8-11]</sup>.

In China there are twelve species of *Curcuma*, mostly occurring in its southwest<sup>[12]</sup>. Among of them, only one species, *C. kwangsiensis* S. G. Lee et C. F. Liang, has both lateral and central spikes. And most of them can't produce seeds except for *C. kwangsiensis* and *C. exgua* N. Liu<sup>[12]</sup>. Five species have been recorded from Guangdong Province: *C. kwangsiensis*,

*C. aromatica*, *C. phaeoaulis*, *C. longa* and *C. wenyujin*<sup>[13]</sup>. On the expedition to Nankun Shan, Guangdong in 2003 and 2004, a plant of *Curcuma* which is similar to *C. kwangsiensis* in having both central and lateral spikes and bearing the seeds, attracted our attention. Further studies confirmed that it presents a new species described and illustrated bellow.

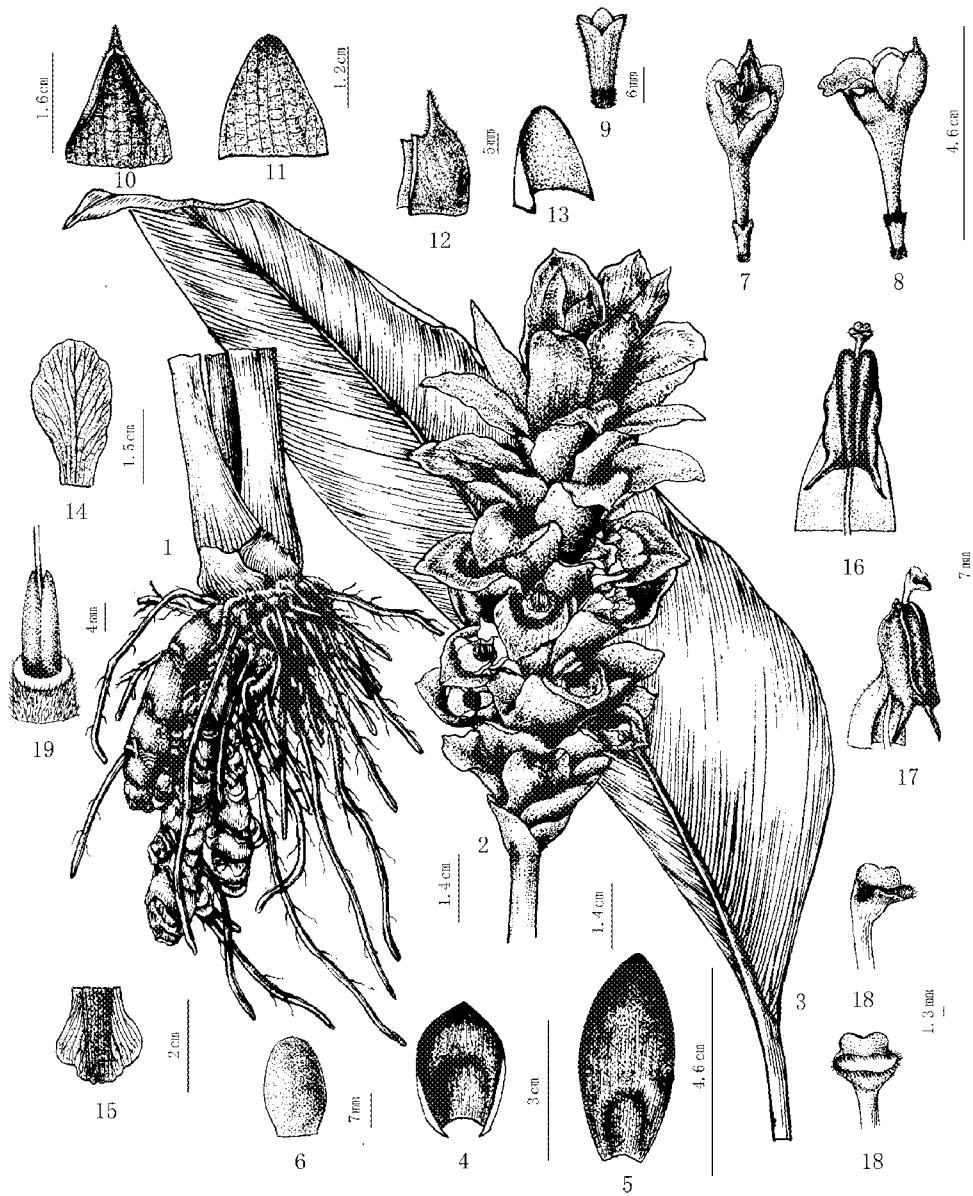


Fig. 1 *Curcuma nankunshanensis* N. Liu, X. B. Ye & J. Chen

1. Rhizome; 2. Upper part of an inflorescence; 3. Leaf; 4. Fertile bracts; 5. Coma bract; 6. Bracteole; 7. Front view of a flower; 8. Side view of a flower; 9. Calyx tube with ovary; 10. Dorsal lobe; 11. Lateral lobe; 12. Upper part of dorsal lobe (side view); 13. Upper part of lateral lobe (side view); 14. Lateral staminode; 15. Labellum; 16. Front view of an anther basal with 2 long spurs, stigma and style; 17. Side view of an anther; 18. Stigma; 19. Ovary with epigenous glands. (Drawn by Liu Yun-xiao from Liu Nian et Ye Xiang-bin 20060905002).

*Curcuma nankunshanensis* N. Liu, X. B. Ye & J. Chen, sp. nov. Fig. 1, Plate 1.

Species *C. kwangsiensis* S. G. Lee et C. F. Liang similis, sed rhizomatibus lateralibus evolutis, laminis supra subglabris differt. Species *C. aromaticae* Salisb. subsimilis, sed rhizomatibus intus griseis, vaginis badiris, bracteis superjectis purpureo-rubris, seminibus producentibus differt.

Perennial herbs, 80~120 cm tall. Rhizomes obconical, 6~10 cm × 4~6 cm, multibranched, white or pale creamy inside; lateral rhizomes well-developed, 1~2 cm in diam, flesh, grayish white inside; roots bearing tubers, slender, white inside. Leaf clumps sparsely. Leaves 3~7; sheath brown; petiole 10~28 cm; ligule conspicuous, ca. 2 mm broad, pubescent; blade broad-lanceolate to lanceolate, 55~79 cm × 7.5~15 cm, base cuneate, apex shortly caudate, adaxially green with faint purple stripes when fresh, then disappearing, glabrous, abaxially densely pubescent. Spikes 14~18 cm × ca. 8 cm, terminal on pseudo-stems or lateral on separate shoots arising from rhizomes, 4~6-flowered; peduncle ca. 15 cm long. Coma bracts white except for purple toward the apex, elliptic to oblong-elliptic, 5~6 cm × 3~4 cm, pilose, apex mucronate; fertile bracts green, ovate-elliptic, ca. 4.5 cm × 3.5 cm, connate to 1/3 above the base, pilose. Bracteoles white, elliptic, ca. 2.6 cm × 0.8 cm. Calyx tubular, white, ca. 1.5 cm, apex 3-toothed, pilose. Corolla tube

ca. 2 cm, yellow, densely villous on throat; lobes 3, purple, glabrous; lateral ones elliptic, ca. 1.9 cm × 0.5 cm, posterior one larger, cucullate, apex mucronate, beak-like. Lateral staminodes yellow, obovate, ca. 1.5 cm × 0.5 cm, glabrous. Labellum yellow, suborbicular, ca. 1.7 cm long, 2-cleft at apex, glabrous. Filaments broad, flat; anther linear, white, ca. 4 mm long, pubescent, base spurred. Ovary villous. Capsule subglobose; seeds small, aril lacinate.  $2n = 84$ . Flowering: Apr. ~ Jun. & Aug. ~ Sep.; fruiting: Jul. & Oct.

China. Guangdong: Longmen Xian, Nankun Shan, alt. 500 m, 2006-09-05, LIU Nian et YE Xiang-bin 20060905002 (holotypus, IBSC); Guangzhou, South China Botanical Garden, introduced from Nankun Shan, 2008-05-27, CHEN Juan 0815 (IBSC).

Etymology: The species is named after its type locality, Nankun Shan, Longmen Xian, Guangdong, China.

*Curcuma nankunshanensis* is similar to *C. kwangsiensis*, but differs in its multibranched lateral rhizome, leaf blades broad-lanceolate and glabrous adaxially, coma bracts white except for purple toward the apex and fertile bracts green. It is also easily distinguished from *C. aromatica* by rhizome white inside, coma bracts white except for purple toward the apex, seeds bearing (Table 1). The key to *Curcuma* from Guangdong is provided below.

Table 1 Comparison of *Curcuma nankunshanensis*, *C. kwangsiensis* and *C. aromatica*

Character	<i>C. nankunshanensis</i>	<i>C. kwangsiensis</i>	<i>C. aromatica</i>
Plant height (m)	0.8~1.2	0.3~0.5 m	1
Main rhizome	Multibranched	Unbranched	Multibranched
Main rhizome size (cm)	6~10 × 4~6	4~5 × 2.5~3.5	7~11 × 5~7
Color of main rhizome	White or pale creamy inside	White or pale creamy inside	Yellow inside
Leaf clumps	Sparsely	Densely	Sparsely
Leaf shape	Broad-lanceolate	Narrow-lanceolate	Elliptic
Colour of leaf blades	Green with faint purple stripes abaxially when fresh, then disappearing	Green or green with purple permanently	Green
Ratio of leaf length/width	7.2	4.2	3.0
Indumentum of leaves	Adaxially glabrescent, abaxially pubescent	Densely pubescent on both surfaces	Adaxially glabrescent, abaxially pubescent
Coma bract size (cm)	5~6 × 3~4	3.5~4 × 2~2.5	5.5~6.5 × 3~4
Color of coma bract	White except for purple toward the apex	Purple-red	Purple-red
Seed	Present	Present	Absent

Key to *Curcuma* from Guangdong

## 1. Leaf sheath base pale brown; seeds bearing.

2. Rhizomes multibranched; leaf clumps densely; leaf blades narrow-lanceolate, densely pubescent on both surfaces. .... *C. kwangsiensis*
2. Rhizomes unbranched; leaf clumps sparsely; leaf blade broad-lanceolate, adaxially glabrous, abaxially densely pubescent. ... *C. nankunshanensis*

## 1. Leaf sheath brown or green; seed not bearing.

3. Leaf sheath brown; leaf blade with purple cloud at center. .... *C. phaeoaulis*
3. Leaf sheath green; leaf blade without purple cloud at center.
4. Leaf blades abaxially densely pubescent. .... *C. aromatica*
4. Leaf blades glabrous on both surfaces.
5. Rhizomes pale creamy inside; inflorescences on separate shoots arising from rhizomes. .... *C. wenyujin*
5. Rhizomes orange and bright yellow inside; inflorescences terminal on pseudostems. .... *C. longa*

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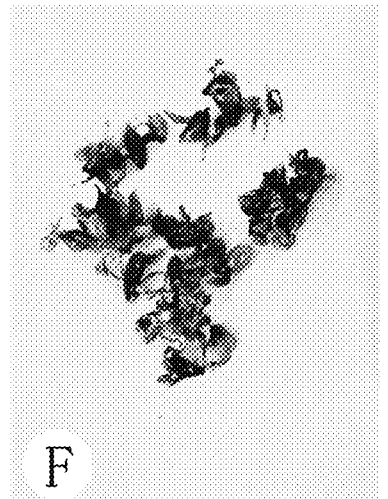
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**Explanation of plate**

## Plate I

A. Inflorescence on separate shoots; B. Rhizomes; C. Inflorescence terminal on pseudostems; D. Bracteole and corolla; E. Bracteole, lateral staminodes, labellum, anther; F. Seeds.



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Plate I