

# 云南姜科新植物

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## NEW TAXA OF ZINGIBERACEAE FROM YUNNAN

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**Abstract** Twelve new species of Zingiberaceae are described from Yunnan Province, China. They are *Amomum fragile* S. Q. Tong, *A. quadrato-laminare* S. Q. Tong, *A. verrucosum* S. Q. Tong, *A. glabrum* S. Q. Tong, *A. capsiciforme* S. Q. Tong, *A. coriandriodorum* S. Q. Tong, *Alpinia rubromaculata* S. Q. Tong, *A. emaculata* S. Q. Tong, *Zingiber nigrimaculatum* S. Q. Tong, *Hedychium glabrum* S. Q. Tong, *Costus viridis* S. Q. Tong and *Costus oblongus* S. Q. Tong. A key to species of the genus *Costus* is given at the end of text.

**Key Words** Yunnan; Zingiberaceae; New taxa

**关键词** 云南; 姜科; 新分类群

### 脆舌砂仁 新种 图 1

*Amomum fragile* S. Q. Tong, sp. nov.

Species ligula longiore, vagina purpureo-rubra, capsula juvenili alata *A. purpureo-rubro* S. Q. Tong et Y. M. Xia affinis, praecipue differt inflorescentia anguste elliptica, pedunculo longiore, ad 10 cm longo, bractea elliptica, labello ovato, apice integro, corollae lobo non mucronato.

Herba erecta, c. 2 m alta. Folia sessilia, lamina lanceolata vel anguste lanceolata, 56—70 cm longa, 5—9 cm lata, apice acuminata vel caudato-acuminata, basi cuneata vel anguste cuneata, supra viridis, subtus viridula, utrinque glabra; ligula integra, c. 4 cm longa, leviter purpurea, membranacea, fragilis, glabra; vagina purpureo-rubra, glabra, striis longitudinalibus conspicue praedita. Spica anguste elliptica, 7—8 cm longa, 2.8—3.2 cm lata; pedunculus 2.5—10 cm longus, squamis membranaceis, glabris; bractea elliptica, 3.5—5 cm longa, 2—3 cm lata; bracteola anguste plicato-lanceolata, c. 4.5 cm longa, 7 mm lata. Calyx tubulosus, c. 3 cm longus, apice tridentatus, maculis purpureo-rubris et pubescentibus obsitus; corollae tubus c. 2.5 cm longus, albis, glaber, lobis subaequilongis, apice non mucronatis, dorsalibus anguste el-

lipticis, c. 3 cm longis, 1 cm latis, lateralibus c. 9 mm latis; labellum ovatum, c. 3.5 cm longum, 2.3 cm latum, margine crispatum, apice integrum; staminodiis lateralibus c. 2 mm longis, albis. Stamen c. 2 cm longum, filamento c. 5 mm longo, antherae thecis linearibus, c. 12 mm longis, albis, connectivi appendicula integra, c. 4 mm longa, 10 mm lata, alba, glabra; ovarium brunneolum, pubibus albis dense obsitum; pedicullo c. 1 cm longo, pubibus albis dense obsito. Capsula juvenilis anguste oblonga, alata, pubibus dense obsita.

Yunnan (云南): Menghai (勐海), in sylvis humidis, praesertim prope fossas in locis humidis, 1982. 06. 21., S. Q. Tong et A. M. Li (童绍全, 李安明) 32854 (Holotypus KUN).

直立草本, 高约 2m。叶无柄; 叶片披针形或狭披针形, 长 56—70cm, 宽 5—9cm, 顶端渐尖或尾状渐尖, 基部楔形或狭楔形, 叶面绿色, 背面淡绿色, 两面无毛; 叶舌全缘, 长约 4cm, 稍紫色, 膜质, 脆, 无毛; 叶鞘紫红色, 无毛, 具明显的纵条纹。穗状花序狭椭圆形, 长 7—8cm, 宽 2.8—3.2cm; 花序梗长 2.5—10, cm, 鳞片膜质无毛; 苞片椭圆形, 长



图1 脆舌砂仁 *Amomum fragile* 1. 具根茎和花序的叶茎基部 base of leafy shoot with rhizome and inflorescence; 2. 叶 leaf; 3. 叶舌 ligule; 4. 小苞片 bract; 5. 花萼 calyx; 6. 花冠背裂片 dorsal corolla lobe; 7. 花冠侧裂片 lateral corolla lobe; 8. 唇瓣 labellum; 9. 子房, 花冠管和雄蕊 ovary, corolla tube and stamen. (刘怡涛绘)

图2 方片砂仁 *A. quadrato-laminare* 1. 具根茎和花序的叶茎基部 base of leafy shoot with rhizome and inflorescence; 2. 叶舌和叶 ligule and leaf; 3. 苞片 bract; 4. 小苞片 bract; 5. 花萼 calyx; 6. 雄蕊和侧生退化雄蕊 stamen and lateral staminode; 7. 花冠背裂片 dorsal corolla lobe; 8. 花冠侧裂片 lateral corolla lobe; 9. 唇瓣 labellum. (刘怡涛绘)

3.5—5cm, 宽 2—3cm; 小苞片狭的折叠披针形, 长约 4.5cm, 宽 7mm; 花萼管状, 长约 3cm, 顶端具 3 齿, 被有紫红色斑点和短柔毛; 花冠管长约 2.5cm, 白色, 无毛, 裂片近等长, 顶端无短尖头, 背裂片狭椭圆形, 长约 3cm, 宽 1cm, 侧裂片宽约 9mm; 唇瓣卵形, 长约 3.5cm, 宽 2.3cm, 边缘皱波状, 顶端全缘; 侧生退化雄蕊长约 2mm, 白色; 雄蕊长约 2cm; 花丝长约 5mm; 花药室线形, 长约 12mm, 白色; 药隔附属体全缘, 长约 4mm, 宽 10mm, 白色, 无毛; 子房淡褐色, 密被白色柔毛; 花梗长约 1cm, 密被白色柔毛。幼嫩蒴果狭椭圆形, 具翅, 密被柔毛。

本种叶舌较长, 叶鞘紫红色, 幼嫩蒴果具翅与紫红砂仁 *A. purpureo-rubrum* S. Q. Tong et Y. M. Xia 接近, 特别不同在于花序狭椭圆形, 花序梗较长, 长达 10cm, 苞片椭圆形, 唇瓣卵形, 顶端全缘, 花冠裂片无短尖头。

#### 方片砂仁 新种 图 2

*Amomum quadrato-laminare* S. Q. Tong, sp. nov.

*A. villosu* Lour. affinis, sed differt foliis basi angustato-cuneatis, pedunculo squamis rubris subcoriaceis praedito, bractea ovata vel oblonga, rubra, subcoriacea, labello suborbiculato, staminodiis lateralibus quadrato-laminaribus.

Herba erecta, 0.8—1.5 m alta. Folia sessilia; lamina anguste lanceolata vel anguste elliptica, 14—34 cm longa, 4—5.5 cm lata, apice caudato-acuminata, basi anguste cuneata, utrinque galbra; ligula integra, 2—3 mm longa, dense pubescens; vagina viridula, striis graciliter longitudinalibus conspicue ornata. Spica capitata vel oblonga, 1—3 e rhizomate oriens, 2—3 cm longa, 1.4—2 cm lata; pedunculus 0.8—4 cm longus, squamis rubris, subcoriaceis, margine ciliatis; bractee ovatae vel oblongae, 1.5—2.1 cm longae, 0.8—1.5 cm latae, rubrae, subcoriaceae tantum margine ciliatae; bracteola 8 mm longa, dilute rubra. Calyx tubulosus longitudine bracteolam subaequans, apice bidentatus, praeter basem albam dilute ruber, glaber; corollae tubus calycem aequans, albus, leviter albo-pubescens, apice rubro-maculatus, lobis anguste ellipticis, albis, glabris, lobis dorsalibus lobos laterales aequantibus, c. 1.4 cm longis, 4 mm latis; labello suborbiculatum, c. 1.5 cm longum, 1.8 cm latum, margine leviter crispatum, praeter medium luteo-fasciarium et basem rubro-maculatam album, glabrum; staminodiis lateralibus quadrato-laminaribus, 2 mm longis; stamen c. 1.5 cm longum, antherae thecis ellipticis, c. 6 mm longis, filamentum c. 5 mm longum, albo, glabro, connectivi appendicula triloba, c. 4 mm longa, 8 mm lata, lobo medio emarginato; ovarium dense brunneo-pubescens; stylus albus, glaber; stigma album, ciliatum.

Yunnan (云南): Mengla (勐腊), alt. 800m, in sylvis siccis, 1984. 03. 20, S. Q. Tong et A. M. Li (童绍全, 李安明) 24895 (Holotypus KUN), ibid. s. Q. Tong et A. M. Li (童绍全, 李安明) 24895.

直立草本, 高 0.8—1.2m。叶无柄; 叶片狭披针形或狭椭圆形, 长 14—34cm, 宽 4—5.5cm, 顶端尾状渐尖, 基部狭楔形, 两面无毛; 叶舌全缘, 长 2—3mm, 密被短柔毛; 叶鞘淡绿色, 具明显的纤细的纵条纹。穗状花序头状或长圆形, 从根基抽出 1—3 枚, 长 2—3cm; 宽 1.4—2cm; 花序梗长 0.8—4cm, 鳞片红色, 近革质, 边缘具睫毛; 苞片卵形或长圆形, 长 1.5—2.1cm, 宽 0.8—1.5cm, 红色, 近革质, 仅边缘具睫毛; 小苞片长约 8mm, 淡红色; 花萼管等长于小苞片, 顶端具 2 齿, 除基部白色外, 其余淡红色, 无毛; 花冠管等长于花萼, 白色, 微被白色短柔毛, 顶端具红色斑点, 裂片狭椭圆形, 白色, 无毛, 背裂片等长

于侧裂片,长约 1.4cm,宽 4mm;唇瓣近圆形,长约 1.5cm,宽 1.8cm;边缘微皱波状,除中央具黄色带和基部有红色斑点外,其余白色,无毛;侧生退化雄蕊方片状,长约 2mm;雄蕊长约 1.5cm;花药室椭圆形,长约 6mm;花丝长约 5mm,白色,无毛;药隔附属体 3 裂,长约 4mm,宽 8mm,中裂片微凹;子房密被淡褐色柔毛;花柱白色,无毛;柱头白色,具睫毛。

近于 *A. villosum* Lour., 但叶基部狭楔形,花序梗具红色近革质的鳞片,苞片卵形或长圆形,红色,近革质,唇瓣近圆形,侧生退化雄蕊方片状。

### 疣子砂仁 新种 图 3

#### *Amomum verrucosum* S. Q. Tong, sp. nov.

Species affinis *A. fulvicepi* Thw. a quo imprimis differt foliis magnioribus, bracteola tubulosa, unilateraliter ad medium dehiscenti, non carinata; calyce bracteola 1/4 plo longiore, apice tridentato, labello subsemiorbiculato, capsula globosa. Etiam *A. muricarpo* Elm. similis, sed folio 1—1.5 cm longe petiolato, subtus pubibus albis dense obsito, calyce tridentato, connectivi appendicula subtriloba, labello subsemiorbiculato, semine verrucoso differt.

Herba erecta, 3—3.5 m. Folia 1—1.5 cm longe petiolata; lamina anguste elliptica vel anguste lanceolata, 43—49 cm longa, 9—12 cm lata, apice acuminata vel caudato-acuminata, basi cuneata, supra glabra, subtus praeter nervum medium pubibus albis dense obsitum puberula, margine densissime ciliata; ligula 1—1.5 cm longa, apice truncata, dense brunneo-villosa; vagina conspicue longitudinaliter striata. Spica ovata vel capitata, 1—3 e rhizomate oriens, c. 9.5 cm longa, 8.5 cm lata; pedunculus dense brunneo-villosus, squamis caducis dense brunneo-villosis; rhachis dense brunneo-villosa post anthesim elongata; bracteae subellipticae, 3.5—4 cm longae, 2.3—2.5 cm latae, leviter luteovirides, praeter basem dense brunneolo-pubescentem puberulae; bracteolae tubulosae, 1.7—2.5 cm longae, subalbae, non carinatae, praeter basem dense brunneolo-pubescentem puberulae; calyx tubulosus, 2.5—3 cm longus, subalbus, non carinatus, apice tridentatus, praeter basem dense brunneolo-pubescentem puberulus; corollae tubus 2—2.2 cm longus, apice citreus pauca phoeniceo-striatus, lobis flavidis, subaequilongis, glabris, dorsalibus suborbiculatis, 2.5—2.8 cm longis, 2—2.5 cm latis, conspicue longitudinaliter phoeniceo-striatis, lateralibus 1.2—1.5 cm latis, non longitudinaliter phoeniceo-striatis; labellum subsemiorbiculatum, 3—3.5 cm longum, 3.5—4 cm latum, luteum, maculis et striis rubris; staminodiis lateralibus subulatis, c. 6 mm longis, flavidis, glabris; connectivi appendicula subtriloba, lutea, glabra; stamen c. 2.6 cm longum, antherae thecis linearibus, c. 1.5 cm longis. Capsula globosa, c. 3.5 cm diam. (in fructu maturitatis), purpureo-nigra, spinis ramosis, 3—5 mm longis; arilli albi, semina late elliptica, c. 4 mm longa, 3 mm lata, brunneo-nigra, verrucosa omnino cingentes.

Yunnan (云南): Hekou (河口), alt. 820m, in sylvis prope fossam, 1983. 06-04, S. Q. Tong(童绍全)32922(Holotypus KUN); Pingbian(屏边), P. I. Mao(毛品一)02756; Mengzi(蒙自), W. P. Fan(范文品)69.

直立草本,高 3—3.5m。叶具 1—1.5cm 长的叶柄;叶片狭椭圆形或狭披针形,长 43—49cm, 9—12cm 宽,顶端渐尖或尾状渐尖,基部楔形,叶面无毛,背面除主脉密被白色柔毛外,其余疏被柔毛,边缘具极密的睫毛;叶舌长 1—1.5cm,顶端截形,密被褐色长柔毛;叶鞘具明显的纵条纹。穗状花序卵形或头状,从根茎抽出 1—3 枚,长约 9.5cm,宽约 8.5cm;花序梗密被褐色长柔毛,花后延长;苞片近椭圆形,长 3.5—4cm,宽 2.3—2.5

cm, 稍黄绿色, 除基部密被淡褐色短柔毛外, 其余疏被柔毛; 小苞片管状, 长 1.7—2.5cm, 近白色, 无龙骨状凸起, 除基部密被淡褐色短柔毛外, 其余疏被柔毛; 花萼管状, 长 2.5—3cm, 近白色, 无龙骨状凸起, 顶端具 3 齿, 除基部密被淡褐色短柔毛外, 其余疏被柔毛; 花冠管长 2—2.2cm, 顶端柠檬色, 具少数鲜红色条纹, 裂片淡黄色, 近等长, 无毛, 背裂片近圆形, 长 2.5—2.8cm, 宽 2.2—2.5cm, 具明显的纵的鲜红色条纹, 侧裂片宽 1.2—1.5cm, 无鲜红色条纹; 唇瓣近半圆形, 长 3—3.5cm, 宽 3.5—4cm, 黄色, 具红色斑点和条纹; 侧生退化雄蕊钻状, 长约 6mm, 淡黄色, 无毛; 药隔附属体近 3 裂, 黄色, 无毛; 雄蕊长约 2.5cm; 花药室线形, 长约 1.5cm。蒴果球形, 直径约 3.5cm (果熟期), 紫黑色, 具分枝

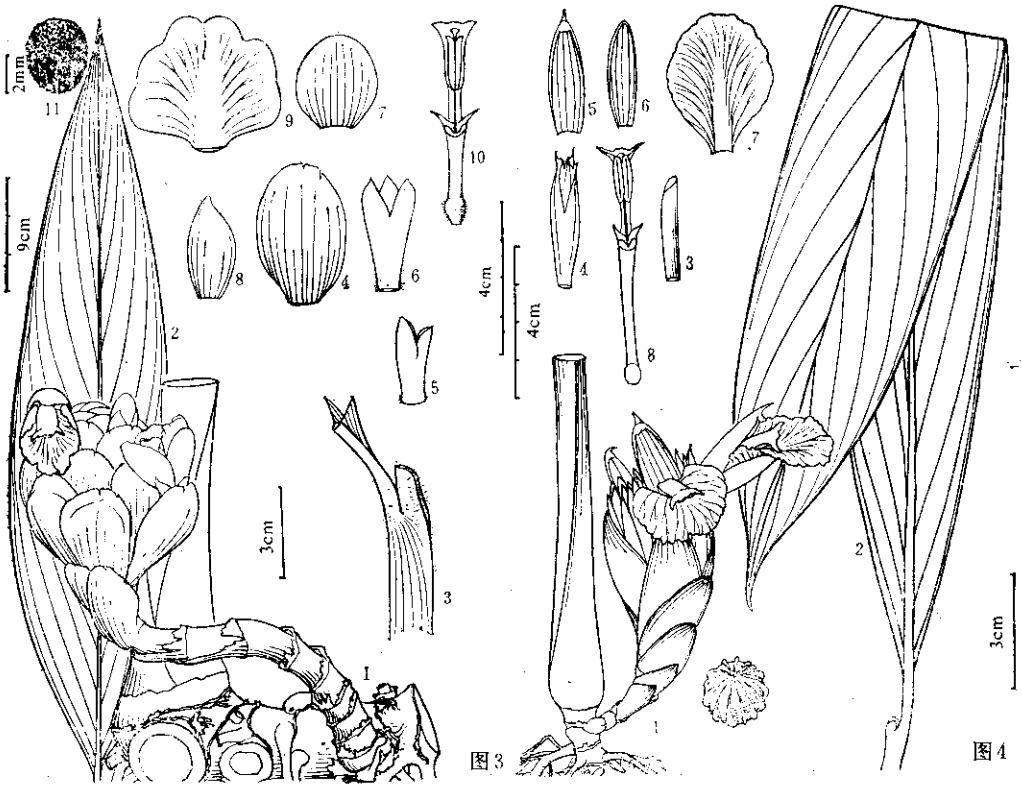


图3 疣子砂仁 *Amomum gangliiforme* 1. 具根茎和花序的叶茎基部 base of leafy shoot with rhizome and inflorescence; 2. 叶 leaf; 3. 示叶舌和叶柄 ligule and petiole; 4. 苞片 bract; 5. 小苞片 bracteole; 6. 花萼 calyx; 7. 花冠背裂片 dorsal corolla lobe; 8. 花冠侧裂片 lateral corolla lobe; 9. 唇瓣 labellum; 10. 示子房, 花冠管和雄蕊 ovary, corolla tube and stamen 11. 种子 seed.

图4 无毛砂仁 *A. glabrum* 1. 具根茎和花序的叶茎基部 1. base of leafy shoot with rhizome and inflorescence; 2. 示叶舌, 叶柄和叶片 ligule, petiole and lamina; 3. 小苞片 bracteole; 4. 花萼 calyx; 5. 花冠背裂片 dorsal corolla lobe; 6. 花冠侧裂片 lateral corolla lobe; 7. 唇瓣 labellum; 8. 子房, 花冠管和雄蕊 ovary, corolla tube and stamen; 9. 蒴果 capsule.

刺, 长 3—5mm; 种子宽椭圆形, 长约 4mm, 宽 3mm, 褐黑色, 具疣, 全包白色假种皮。

本种近于 *A. fulviceps* Thw., 特别与该种不同之处在于叶较大, 小苞片管状, 侧裂达中部, 无龙骨状凸起, 花萼较小苞片长 1/4 倍, 顶端具 3 齿, 唇瓣近半圆形, 蒴果球形。也与疣果豆蔻 *A. muricarpum* Elm. 相似, 但叶具 1—1.5cm 长的柄, 叶背密被白色柔毛,

花萼具 3 齿, 药隔附属体近 3 裂, 唇瓣近半圆形, 种子具疣而不同。

**无毛砂仁 新种 图 4**

***Amomum glabrum*** S. Q. Tong, sp. nov.

Species nova affinis, *A. subulato* Roxb. a quo foliis anguste oblongo-lanceolatis, inferis sessilibus, superis 1—3 cm longis, bractea et bracteola apice obtusa, corollae lobis dorsalibus apice breviter subulatis, lobis lateralibus non subulatis, calyce prope medium unilateraliter dehiscenti, labello late ovato, connectivi appendicula triloba, differt.

Herba erecta, 0.8—1.5 m alta. Folia inferiora sessilia, superiora 1—3 cm longe petiolata; lamina anguste oblongo-lanceolata, 25—55 cm longa, 4—5 cm lata, apice acuminata vel caudata, basi cuneata, utrinque glabra; ligula biloba, 3—4 mm longa, membranacea, glabra; vagina viridula, glabra, striis longitudinalibus conspicue praedita. Spica subobovata, 1—3 e rhizomate oriens, c. 4.5 cm longa, 3 cm lata; bracteae subovatae, c. 3.5 cm longae, 2 cm latae, apice obtusae, dilute rubrae, glabrae; bracteola tubulosa, c. 3 cm longa, apice integra, alba, glabra. Flores praeter labelium pubescens glabri; calyx tubulosus, 3.5 cm longus, apice tridentatus, unilateraliter prope medium dehiscens; corollae tubus c. 3 cm longus, lobis lanceolatis, subaequilongis, dorsalibus c. 3.3 cm longis, 1.1 cm latis, apice breviter subulatis, lateralibus 8 mm latis, apice obtusis; labelium late ovatum, c. 3.5 cm longum, 2.8 cm latum, margine crispatum; staminodiis lateralibus subulatis, superne albis, inferne rubris; stamen c. 2.5 cm longum, filamentum c. 1 cm longo, antherae thecis anguste ellipticis, 1.1 cm longis, connectivi appendicula triloba, c. 3 mm longa, 12 mm lata; ovarium viridulum, glabrum. Capsula globosa, 1.5—2 cm diam., crispato-alata.

Yunnan (云南): Jinghong (景洪), alt. 720m, in sylvis, 1958. 05. 15, Exped. Yunnan-Universitatis (云大考查队)952 (Holotypus HBYU\*); Mengla (勐腊), S. J. Pei (裴盛基) 59-9256, ibid. S. Q. Tong et A. M. Li (童绍全, 李安明)32801.

直立草本, 高 0.8—1.5m。下部叶无柄, 上部叶具 1—3cm 长的叶柄; 叶片狭椭圆状披针形, 长 25—55cm, 宽 4—5cm, 顶端渐尖或尾尖, 基部楔形, 两面无毛; 叶舌 2 裂, 长 3—4mm, 膜质, 无毛; 叶鞘淡绿色, 无毛, 具明显的纵条纹。穗状花序近倒卵形, 从根茎抽出 1—3 枚, 长约 4.5cm, 宽 3cm; 苞片近卵形, 长约 3.5cm, 宽 2cm, 顶端钝, 淡红色, 无毛; 小苞片管状, 长约 3cm, 顶端全缘, 白色, 无毛; 花除唇瓣被短柔毛外, 其余无毛, 白色; 花萼管状, 长约 3.5cm, 顶端具 3 齿, 侧裂近中部; 花冠管长约 3cm, 裂片披针形, 近等长, 背裂片长约 3.3cm, 宽 1.1cm, 顶端具短的钻尖, 侧裂片宽 8mm, 顶端钝; 唇瓣宽卵形, 长约 3.5cm, 宽 2.8cm, 边缘皱波状; 侧生退化雄蕊钻状, 上部白色, 下部红色; 雄蕊长约 2.5cm; 花丝长约 1cm; 花药室狭椭圆形, 长约 1.1cm; 药隔附属体 3 裂, 长约 3mm, 宽 12mm; 子房淡绿色, 无毛。蒴果球形, 直径 1.5—2cm, 具纵波状翅。

新种近于 *A. subulatum* Roxb., 不同在于其叶狭长圆状披针形, 下部叶无柄, 上部具 1—3cm 长的叶柄, 苞片与小苞片顶端钝, 花萼侧裂至近中部, 花冠背裂片顶端具短钻尖, 侧裂片无钻尖, 唇瓣宽卵形, 药隔附属体 3 裂可以区别。

**辣椒砂仁 新种 图 5**

***Amomum capsiciforme*** S. Q. Tong, sp. nov.

Species haec ab *A. pterocarpo* Thw. differt praesertim foliis sessilibus, basi symmetricis, ligula integra, brevior haud ultra 6 mm longa, subcoriacea, capsula capsiciformi, apice obtusa.

Herba erecta, 1—1.5 m alta, 1.5 cm diam., rhizomate squamis late ovatis subcoriaceis praedito. Folia sessile; lamina elliptica vel oblonga, 18—34 cm longa, 5.5—10 cm lata, apice caudato-acuminata, basi symmetricis, cuneata, supra viridis, nervis lateralibus prominentibus, subtus viridula, utrinque glabra; ligula integra, 3—6 mm longa, subcoriacea, glabra; vagina viridula conspicue longitudinaliter striata. Fructescentia c. 6 cm longa, 7 cm lata; stipes fructescentiae 3—5 cm longus, squamis late ovatis subcoriaceis. Capsula capsiciformis, apice obtusa, 4.8—5.2 cm longa, 1.8—2.2 cm lata, rubra, glabra, apice calyce persistente coronata; arilli albi semina subcapitata. c. 5 mm longa, 3 mm lata, verrucosa omnino cingentes.

Yunnan (云南): Yingjiang (盈江), alt. 1400m, in sylvis prope viam, 1983. 08<sup>o</sup> 06, S. Q. Tong et C. J. Liao (童绍全, 廖聪金) 24865 (Holotypus KUN).

直立草本, 高 1—1.5m, 直径 1.5cm, 根茎具宽卵形的近革质的鳞片。叶无柄; 叶片椭圆形或长圆形, 长 18—34cm, 宽 5.5—10cm, 顶端尾状渐尖, 基部对称, 楔形, 叶面绿色, 具突起的侧脉, 背面淡绿色, 两面无毛; 叶舌全缘, 长 3—6mm, 近革质, 无毛; 叶鞘淡绿色, 且具明显的纵条纹。果序长约 6cm, 宽 7cm; 果序梗长 3—5cm, 具宽卵形的近革质的鳞片。蒴果辣椒形, 长 4.8—5.2cm, 宽 1.8—2.2cm, 红色, 无毛, 顶端冠以宿存的

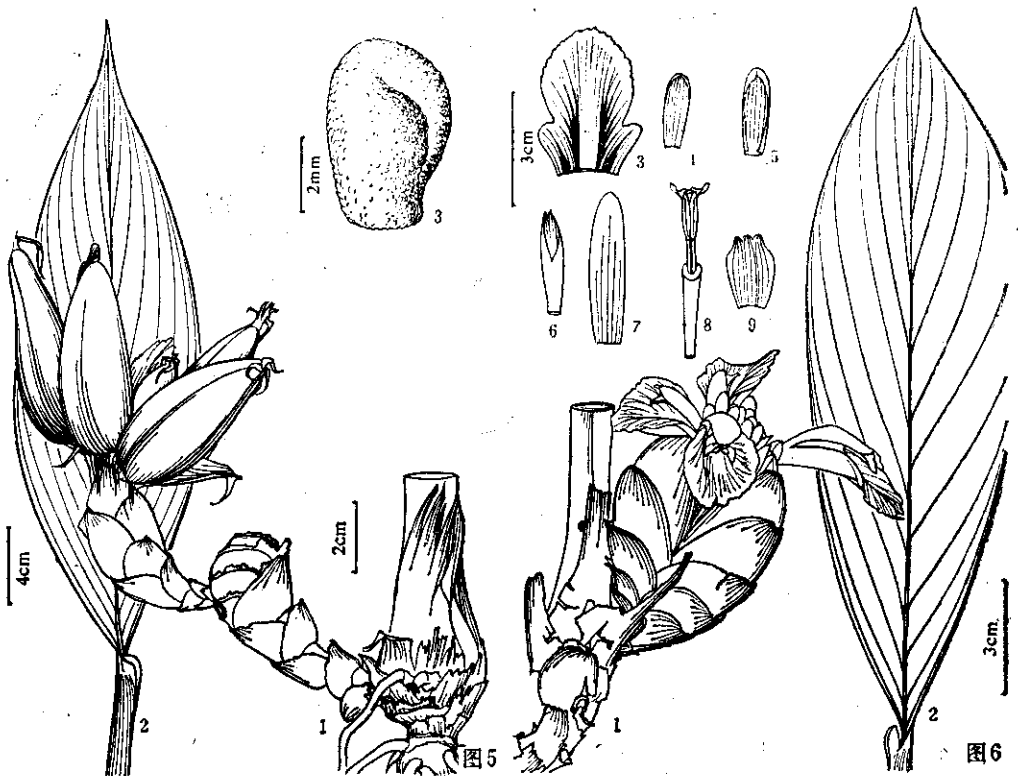


图5 辣椒砂仁 *Amomum capsiciforme* 1. 具根茎和果序的叶茎基部 base of leafy shoot with rhizome and fructescence; 2. 示叶舌和叶 ligule and leaf; 3. 种子 seed.

图6 萹味砂仁 *A. coriandriodorum* 1. 具根茎和花序的叶茎基部 base of leafy shoot with rhizome and inflorescence; 2. 示叶和叶舌 leaf and ligule; 3. 苞片 bract; 4. 小苞片 bracteole; 5. 花萼 calyx; 6. 花冠背裂片 dorsal corolla lobe; 7. 花冠侧裂片 lateral corolla lobe; 8. 唇瓣 labellum; 9. 示雄蕊和花冠管 stamen and corolla tube.

花萼;种子近头状,长约 5mm,宽 3mm,具疣,全包白色假种皮。

本种不同于 *A. pterocarpum* Thw., 主要在于叶无柄,基部不对称,叶舌全缘,较短,绝不超过 6mm,近革质,蒴果辣椒形,顶端钝。

### 荜味砂仁 图 6

*Amomum coriandriodorum* S. Q. Tong, in Acta Bot. Yunnanica **10**(2): 208—210. t. 4. 1988.

Ad descr. add.: Herba erecta, 1.5—1.7 m alta, 1.7—2 cm diam., rhizomate et folio coriandriodoro, basi vaginis elaminatis rubris praedita. Folia sessile; lamina elliptica vel anguste elliptica, 20—28 cm longa, 5—6 cm lata, apice acuminata vel caudata, basi cuneata vel attenuata, utrinque glabra; ligula integra, 4—8 mm longa, membranacea, infuscata, glabra; vagina viridula, glabra. Spica subobovata, 1—2 e rhizomate oriens, c. 7 cm longa, 4.5 cm lata; pedunculus 2—3 cm longus, squamis ordinatim distichis; bracteae c. 4 cm longae, 1 cm latae, rubrae, glabrae; bracteolae tubulosae, c. 2.8 cm longae, apice leviter bidentatae, rubrae, glabrae. Calyx tubulosus, c. 2 cm longus, apice obtuse tridentatus, ruber, glaber; corollae tubus c. 2 cm longus, leviter flavo-viridis, glaber, lobis subaequilongis, rubris, glabris, dorsalibus c. 2.4 cm longis, 8 mm latis, lateralibus 6 mm latis; labellum 3-lobum, c. 4 cm longum, 2.5 cm latum, margine crispatum medio lobo late ovato, armeniaco, lobis lateralibus parve auriculatis, dilute flavis; staminodiis lateralibus nullis; stamen c. 2.3 cm longum, antherae thecis anguste ellipticis, c. 1 cm longis, margine flavo-brunneis, filamentis c. 7 mm longo, leviter flavo-viridi, albo-puberulo, connectivi appendicula triloba, c. 3 mm longa, 11 mm lata, margine flavo-brunnea. Ovarium subellipticum, c. 7 mm longum, 4 mm latum, leviter flavo-viride pubibus albis dense obsitum; stylus linearis albus, pubibus albis; stigma viridulum, albo-ciliatum; glandes epigynae laminiformes, c. 3 mm longae, dilute flavo-brunneae.

Yunnan (云南): Menglian (勐连), alt. 1500m, in sylvis, 1985. 05. 14, B. J. Chen (陈必强) 001.

补充描述: 直立草本,高 1.5—1.7m,直径 1.7—2cm。根茎和叶具荜萋味,基部具红色的无叶片的鞘。叶无柄;叶片椭圆形或狭椭圆形,长 20—28cm,宽 5—6cm,顶端渐尖或尾尖,基部楔形或渐狭,两面无毛;叶舌全缘,长 4—8mm,膜质,淡褐色,无毛;叶鞘淡绿色,无毛。穗状花序近倒卵形,从根茎抽出 1—2 枚,长约 7cm,宽 4.8cm;花序梗长 2—3cm,具整齐 2 列的鳞片;苞片长约 4cm,宽 1cm,红色,无毛;小苞片管状,长约 2.8cm,顶端微具 2 齿,红色,无毛;花萼管状,长约 2cm,顶端具钝 3 齿,红色,无毛;花冠管长约 2cm,稍黄绿色,无毛,裂片近等长,红色,无毛,背裂片长约 2.4cm,宽 8mm,侧裂片宽 6mm;唇瓣 3 裂,长约 4cm,宽 2.5cm,边缘皱波状,中裂片宽卵形,杏黄色,侧裂片小,耳状,淡黄色;无侧生退化雄蕊;雄蕊长约 2.3cm,花药室狭椭圆形,长约 1cm,边缘黄褐色;花丝长约 7mm,稍黄绿色,具白色疏柔毛;药隔附属体 3 裂,长约 3mm,宽 11mm,边缘黄褐色;子房近椭圆形,长约 7mm,宽 4mm,稍黄绿色,密被白色柔毛;花柱线形,具白色柔毛;柱头淡绿色,具白色睫毛;上位腺体片状,长约 3mm,淡黄褐色。

### 红斑山姜 新种 图 7

*Alpinia rubro-maculata* S. Q. Tong, sp. nov.

Species nova *A. blepharocalyci* K. Schum. proxima, cujus calyce rubro, corollae lobo



ciliato. Differt vero folio basi asymmetricissimo, inflorescentia brevior et gracilior, calyce apice 4—6-dentato, corollae lobis dorsalibus ellipticis, apice obtusis, lateralibus basi appendiculatis, labello depresso-ovato, apice conspicue bilobato, margine luteo et rubro-maculato.

Herba erecta, 1.5—2.5 m alta. Petiolus 1—2.5 cm longus; lamina elliptico-lanceolata vel oblongo-lanceolata, 40—77 cm longa, 10—14 cm lata, apice breviter acuminata, basi gradatim angustata, asymmetricissima, supra saturate viridis, subtus dense pubescens; ligula 0.8—1 cm longa, apice integra, coriacea caduce pubens; vagina conspicue longitudinaliter striata, apice non ciliata. Racemus 18—30 cm longus; rhachis dense brunneo-hispida; bracteola oblongo-triangulari, 3.5—4 cm longa, apice rotundo-tridentata. Calyx tubulosus, 2.3—2.6 cm longus, ruber, apice 4—6-dentatus et ciliatus, basi et apice dense albo-pubescens; corollae tubus c. 1 cm longus, albus, pubescens, lobis aequilongis, albis, membranaceis, margine ciliatis, dorsalibus ellipticis, 3.8—4.5 cm longis, 2.1—1.5 cm latis, lateralibus oblongis, 1.7—2 cm latis, basi parve appendiculatis; staminodiis lateralibus c. 8 mm longis, rubris, pubescentibus; labellum depresso-ovatum, 3.9—4.5 cm longum, 5—5.8 cm latum, apice luteum conspicue bilobatum, striis rubris pauve praeditum, medio armeniacum, margine luteum maculis dense praeditum, relique phoenicum. stamen c. 3 cm longum, filamentum c. 1.2 cm longum, inferne dense rubro-maculato, albo-pubescenti, stylo albo-puberulo, stigmatibus ciliato. Ovarium luteo-brunneum pubibus luteo-brunneis dense obsitum.

Yunnan (云南): mengla (勐腊), alt. 840m, in sylvis prope fossas, 1984. 03. 23, S. Q. Tong et A. M. Li (童绍全, 李安明) 24892 (Holotypus KUN).

直立草本, 高 1.5—2.5m。叶柄长 1—2.5cm; 叶片椭圆状披针形或长圆状披针形, 长 40—77cm, 宽 10—14cm, 顶端短渐尖, 基部渐狭, 不对称, 叶面深绿色, 背面密被短柔毛; 叶舌长 0.8—1cm, 顶端全缘, 革质, 被脱落性绒毛; 叶鞘具明显的纵条纹; 顶端无睫毛。总状花序长 18—30cm; 花序轴密被淡褐色粗毛; 小苞片长圆状三角形, 长 3.5—4cm, 顶端具近圆的 3 齿; 花萼管状; 长 2.3—2.6cm, 红色, 顶端具 4—6 齿和睫毛, 基部与顶部密被白色短柔毛; 花冠管长约 1cm, 白色, 具短柔毛; 裂片等长, 白色, 膜质, 边缘具睫毛, 背裂片椭圆形, 长 3.8—4.5cm, 宽 2.1—2.5cm, 侧裂片长圆形, 宽 1.7—2cm, 基部具小的附属体; 侧生退化雄蕊长约 8mm, 红色, 被短柔毛; 唇瓣扁卵形, 长 3.9—4.5cm, 宽 5—5.8cm, 顶部黄色, 明显 2 裂, 具少数红色条纹, 中央杏黄色, 边缘黄色, 密被红色斑点, 其余鲜红色; 雄蕊长约 3cm, 花丝长约 1.2cm, 下部密被红色斑点, 具白色短柔毛; 花柱被白色短柔毛; 柱头具睫毛; 子房黄褐色, 密被黄褐色柔毛。

本种最近于 *A. blepharocalyx* K. Schum. 有同该种相同的红色花萼和花冠裂片具睫毛。实际上不同于该种在于叶基部极不对称, 花序短而纤细, 花萼顶端具 4—6 齿, 花冠背裂片椭圆形, 顶端钝, 侧裂片基部具附属体, 唇瓣扁卵形, 顶端明显 2 裂, 边缘黄色, 且具红色斑点。

无斑山姜 新种 图 8

*Alpinia emaculata* S. Q. Tong, sp. nov.

Species *A. rubro-maculatae* S. Q. Tong proxima. et Differt vero calyce apice tridentato, labello apice integro, margine luteo non rubro-maculato, corollae lobis dorsalibus suborbiculatis, lateralibus basi non appendiculatis.

Herba erecta, 1.5—2.5 m alta, c. 2.5 diam. Petiolus 2.5—4 cm longus; lamina elliptico-

lanceolata vel oblongo-lanceolata, 40—77 cm longa, 10—18 cm lata, apice breviter acuminata, basi cuneata vel anguste cuneata, symmetricissima, supra glabra, subtus dense pubens, margine densissime ciliata; ligula 1—2 cm longa, apice integra, coriacea, caduce pubens; vagina longitudinaliter striata, apice non ciliata. Racemus 15—25 cm longus; rhachis dense brunneolohispida; pediculus 2—4 mm longus, dense brunneolohispidus; bracteola 3—4 cm longa, in vivo rubro-brunnea in sicco brunneola, caduce puberula, apice rotundo-dentata et ciliata. Calyx tubulosus, c. 2.2 cm longus, apice tridentatus, dilute ruber, pubibus albis; corollae tubus c. 1.5 cm longus, albo-puberulus, lobis aequilongis, albis, margine albo-ciliatis, dorsalibus suborbiculatis, 3.2—3.5 cm longis, 3—3.3 cm latis, lateralibus anguste ellipticis, 1.3—1.5 cm latis; staminodiis lateralibus subulatis, c. 1 cm longis, phoenuceis, dorsaliter albo-pubescentibus; labellum late ovatum, c. 4 cm longum, 6 cm latum, apice abrupte convexo, integro, cujus margine luteo, striis rubris paucis et medio armenaco phoeniceum; stamen c. 2.8 cm longum, antherae thecis filamentis subaequantibus, filamento basi dense albo-pubescenti; stylus glaber; stigma ciliatum. Ovarium flavo-viride, pubibus brunneolis dense obsitum. Capsula globosa c. 3.4 cm diam. (in fructu maturitatis) brunneola, apice calycis persistenti coronata.

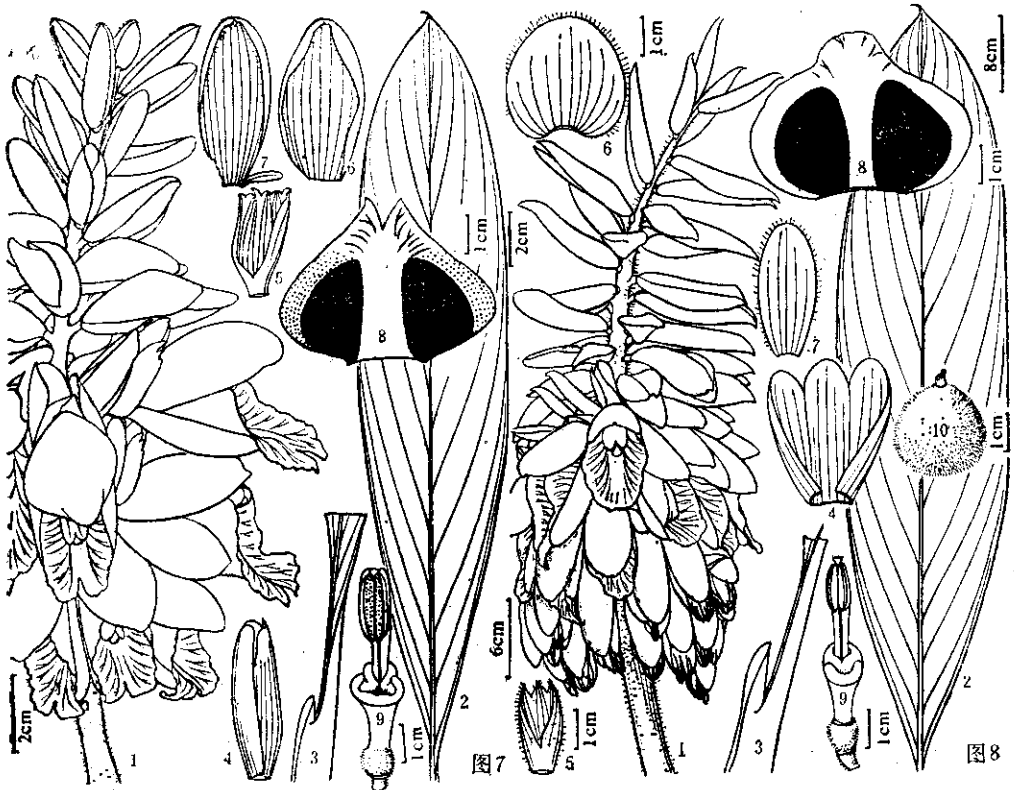


图7 红斑山姜 *Alpinia rubro-maculata* 图8 无斑山姜 *A. emaculata* 1.花序 inflorescence; 2.叶 leaf; 3.示叶舌和叶柄 ligule and petiole; 4.小苞片 bracteole; 5.花萼 calyx; 6.花冠背裂片 dorsal corolla lobe; 7.花冠侧裂片 lateral corolla lobe; 8.唇瓣 labellum; 9.示子房, 花冠管和雄蕊 ovary, corolla tube and stamen; 10. 蒴果 capsule.

Yunnan (云南): Mengla (勐腊), alt. 800m, in sylvis humilibus, 1984. 03. 28, S. Q. Tong et A. M. Li (童绍全, 李安明) 24900 (Holotypus KUN); Jingping (金

平) S. J. Xuan (宣淑洁) 61-00159。

直立草本, 高 1.5—2.5m, 直径约 2.5cm。叶柄长 2.5—4cm; 叶片椭圆状披针形或长圆状披针形, 长 40—77cm, 宽 10—18cm, 顶端短渐尖, 基部楔形或狭楔形, 对称, 叶面无毛, 背面密被绒毛; 边缘被极密的睫毛; 叶舌长 1—2cm, 顶端全缘, 革质, 具脱落性的绒毛; 叶鞘具纵条纹, 顶端无睫毛。总状花序长 15—25cm; 花序轴密被淡褐色粗毛; 花梗长 2—4mm, 密被淡褐色粗毛; 小苞片长 3—4cm, 鲜时红褐色, 干时淡褐色, 具脱落性的疏柔毛, 顶端具圆齿和睫毛; 花萼管状, 长约 2.2cm, 顶端具 3 齿, 淡红色, 具白色柔毛; 花冠管长约 1.5cm, 疏被白色柔毛, 裂片等长, 白色, 边缘具白色睫毛, 背裂片近圆形, 长 3.2—3.5cm, 宽 3—3.3cm, 侧裂片狭椭圆形, 宽 1.3—1.5cm; 侧生退化雄蕊钻头状, 长约 1cm, 鲜红色, 背面具白色短柔毛; 唇瓣宽卵形, 长约 4cm, 宽 6cm, 顶部极凸, 不裂, 边缘黄色具少数红色条纹, 中央杏黄色, 其余鲜红色; 雄蕊长约 2.8cm; 花药室近等长于花丝; 花丝基部密被白色短柔毛; 花柱无毛; 柱头具睫毛; 子房黄绿色, 密被淡褐色柔毛。蒴果球形, 直径约 3.4cm (果熟期), 淡褐色, 顶端冠以宿存的花萼。

本种近于 *A. rubro-maculata* S. Q. Tong 但花萼顶端具 3 齿, 唇瓣顶端全缘, 边缘黄色, 无红色斑点, 花冠背裂片近圆形, 侧裂片基部无附属体, 与后者明显不同。

#### 黑斑姜 新种 图 9

*Zingiber nigrimaculatum* S. Q. Tong, sp. nov.

Species capsula et semine *Z. recurvato* S. Q. Tong similis, sed planta graciliore crassima ad 1.2 cm diam., ligula superiore bilobata, inferiora subtruncata; lamina supra nervis lateralibus prominentibus, subtus maculis nigris dense obsita, capsula leviter viridi-lutea (in fructu maturitatis) arillo albo semen omnino cingenti, rhizomate in vetustate lutea, juventute subalbo difert.

Herba erecta, 0.8—1.2 m alta, 0.6—1.2 cm diam, rhizomate in vetustate luteo, juventute subalbo. Petiolus 0.3—1 cm longus; lamina elliptica vel anguste lanceolata, 15—38 cm longa, 3—9 cm lata, apice acuminata vel caudato-acuminata, basi cuneata, supra saturate viridis, nervis lateralibus prominentibus, subtus viridula dense nigri-maculata, praeter costam puberulam glabra; ligula superior bilobata, inferiora subtruncata, margine phoenicea, albo-puberula; vagina viridula albo-puberula. Fructescentia capitata, 1—2 e rhizomate oriens, 3.5—5 cm longa, 5—6 cm lata; stipes fructescentiae 2—6 cm longus, squamis albis, glabris, apice purpureo-rubris; bracteola lanceolata, c. 2.5 cm longa, 6 mm lata, viridula, apice purpureo-rubra, glabra. Capsula trigono-ovoidea, 3.5—4 cm longa, 2—2.2 cm lata, viridi-lutea (in fructu maturitatis), apice calyce persistenti coronata, basi subalba; arilli albi, semina subovata, c. 7 mm longa, 5 mm lata, juventute alba, deinde rubra, tantem purpureo-nigra omnino cingentes.

Yunnan (云南): Mengla (勐腊), alt. 1800m, in sylvis, 1987. 11. 18, S. Q. Tong (童绍全) 42405 (Holotypus KUN); ibid.S. Q. Tong (童绍全) 32906。

直立草本, 高 0.8—1.2m, 直径 0.6—1.2cm, 根茎老的黄色, 幼的近白色。叶柄长 0.3—1cm; 叶片椭圆形或狭披针形, 长 15—38cm, 宽 3—9cm, 顶端渐尖或尾状渐尖, 基部楔形, 叶面深绿色, 侧脉突起, 背面淡绿色, 密被黑色斑点, 除主脉疏被柔毛外, 其余无毛; 下部的叶舌近截形, 上部 2 裂, 边缘鲜红色, 疏被白色柔毛; 叶鞘淡绿色, 疏被白色柔毛。果序头状, 从根茎抽出 1—2 枚, 长 3.5—5cm, 宽 4.5—6 cm; 果序梗长 2—6cm,

具白色的无毛鳞片,顶端紫红色;小苞片披针形,长约 2.5cm,宽 6mm,淡绿色,顶端紫红色,无毛。蒴果三棱状卵形,长 3.5—4cm,宽 2—2.2cm,绿黄色(果熟期),顶端冠以宿存的花萼,基部近白色;种子近卵形,长约 7mm,宽 5mm,幼时白色,以后红色,最后紫黑色,白色假种皮全包种子。

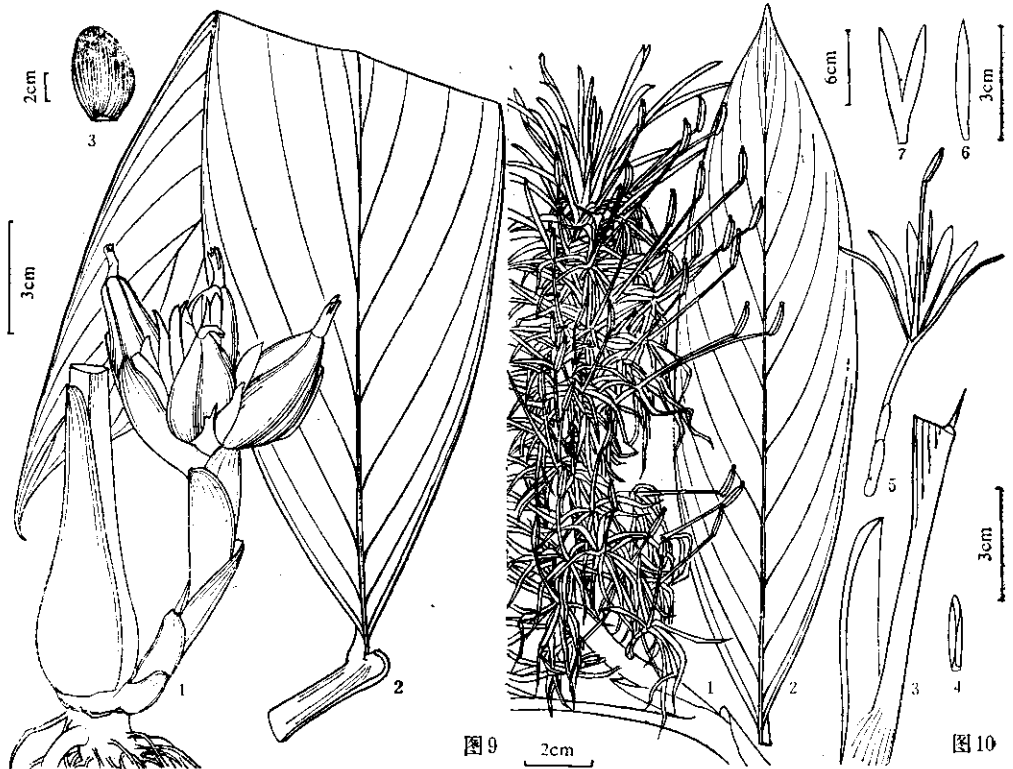


图9 黑斑姜 *Zingiber nigrimaculatum* 1.具根茎和果序的叶茎基部 base of leafy shoot with rhizome and fructescence; 2.示叶和叶舌 leaf and ligule; 3.种子 seed.

图10 无毛姜花 *Hedychium glabrum* 1.花序 inflorescence; 2.叶 leaf; 3.示叶柄和叶舌 petiole and ligule; 4.苞片 bract; 5.花 flower; 6.侧生退化雄蕊 lateral staminode; 7.唇瓣 labellum.

本种蒴果与种子相似于 *Z. recurvatum* S. Q. Tong, 但植株纤细,最粗达 1.2cm,顶部的叶舌 2 裂,达下部近截形,叶面具突起的侧脉,背面密被黑色斑点,蒴果稍绿黄色(果熟期),假种皮全包种子,根茎老时黄色,幼时近白色可以区别。

#### 无毛姜花 新种 图 10

#### *Hedychium glabrum* S. Q. Tong, sp. nov.

Species nova floribus albis, axilla bracteae uniflora *H. yunnanense* Gagnep. similis, sed petiolo longiore ad 7 cm longo, ligula longiore ad 6 cm longa, labello non obovato, cujus lobis anguste lanceolatis, staminodia lateralia aequantibus differt.

Herba erecta, 1—1.2 m alta. Petioli superiores 3—7 cm longi; lamina lanceolata vel anguste oblonga, 60—70 cm longa, 12—15 cm lata, apice acuminata vel breviter acuminata, basi cuneata, utrinque glabra; ligula integra, 3—6 cm longa, membranacea, dilute rubra, glabra; vagina praeter marginem apicis dilute rubrum viridis, glabra. Spica dense pluriflora, 20—

30 cm longa, 8—12 cm lata; pedunculus longitudinaliter angulosus, viridulus, glaber; bractea c. 2 cm longae, viridulae, glabrae, axillis bractearum uniflorae; bracteola c. 1 cm longa, membranacea, apice integra et rubro-maculata, glabra; flores albi deinde luteoli, glabri; calyx tubulosus, c. 2 cm longus, dilute luteus, apice integer et rubro-maculatus; corollae tubus c. 4 cm longus, dilute luteus, lobis linearibus, c. 3.5 cm longis; staminodiis lateralibus anguste lanceolatis, c. 3 cm longis, 4 mm latis; labellum c. 3 cm longum, bipartitum, basi in stipitem angustatum, lobis anguste lanceolatis staminodia lateralia aequantibus; filamentum c. 4.4 cm longo, rubro; antherae thecis c. 7 mm longis.

Yunnan (云南): Ximeng (西盟), alt. 2100m, in sylvis, 1986. 06. 19, S. Q. Tong et Y. M. Xia (童绍全, 夏永梅) 24984 (Holotypus KUN).

直立草本, 高 1—1.2m。上部的叶柄长 3—7cm; 叶披针形或狭椭圆形, 60—70cm 长, 宽 12—15cm, 顶端渐尖或短渐尖, 基部楔形, 两面无毛; 叶舌全缘, 长 3—6cm, 膜质, 淡红色, 无毛; 叶鞘除顶部边缘红色外, 其余绿色, 无毛。穗状花序密集多花, 长 20—30cm, 宽 8—12cm; 花序轴具纵棱, 淡绿色, 无毛; 苞片长约 2cm, 淡绿色; 无毛, 1 朵花; 小苞片长约 1cm, 膜质, 顶端全缘, 且具红色斑点, 无毛; 花白色, 以后黄色; 无毛; 花萼管状, 长约 2cm, 淡黄色, 顶端全缘, 且具红色斑点; 花冠管长约 4cm, 淡黄色, 裂片线形, 长约 3.5cm; 侧生退化雄蕊狭披针形, 长约 3cm, 宽 4mm; 唇瓣长约 3cm, 裂成 2 瓣, 基部狭缩成柄, 裂片狭披针形相等于侧生退化雄蕊; 花丝长约 4.4cm, 红色; 花药室长约 7mm。

本种花白色, 每苞片 1 朵花以 *H. yunnanense* Gagnep. 相似, 但叶柄长达 7cm, 叶舌长达 6cm, 唇瓣非倒卵形, 裂片狭披针形, 相等于侧生退化雄蕊而不同。

绿苞闭鞘姜 新种 图 11

*Costus viridis* S. Q. Tong, sp. nov.

Species nova affinis *C. specioso* (Koen.) Smith, quod praecipue differt antheris ad partem superiorem staminis urceolati insertis; tubo calycis dente calycis 2 plo longiore; labello et lobis corollarum dense albo-pubentibus.

Herba erecta, 2—3 m alta. Folia subsessilia; lamina ovata vel elliptica, 24—30 cm longa, 6—9 cm lata, apice breviter acuminata, basi cuneata vel rotunda, supra saturate viridis, glabra, subtus dense albo-sericea; vagina viridis pubibus albis dense obsita, apice longe albo-ciliata. Spica terminata late ovata c. 6 cm longa, 5 cm lata; bractea imbricatae, ovatae vel late ovatae, 3.5—4 cm longae, 1.8—2.4 cm latae, praeter partem nudam viridem subalvae, coriaceae, glabrae, margine membranaceae, leviter virides, apice pungenter rubro-mucronatae; bracteola plicata, ovata, c. 2.5 cm longa, viridis maculis rubris parce obsita, glabra. Calyx c. 2 cm longus, glaber, coriaceus, dentibus calycis triangulis tubis calycis 1 plo longioribus, apice pungenter aureolino-mucronatis; tubus corollae c. 1 cm longus, albus, glaber, lobis subaequilongis, resesolis, glabris, dorsalibus ellipticis, c. 6 cm longis, 3.2 cm latis, lateralibus ovatis, c. 3 cm latis, ad basin in stipites breviter angustatis; labellum tubatum, 5—5.5 cm diam., roseolum dorsaliter glabrum, margine crispatum; stamen oblongum, c. 5 cm longum, 1.8 cm latum, praeter dorsum longe pubentibus dense obsitum glabrum anguste ellipticis, albis. Ovarium viridulum, glabrum.

Yunnan (云南): Wanding (婉町), alt. 1050m, in sylvis frondosis praesertim in locis humidis, 1983. 06. 22, S. Q. Tong et W. D. Liao (童绍全, 廖聪金) 24822

(Holotypus KUN).

直立草本,高 2—3m。叶近无柄;叶片卵形或椭圆形,长 24—30cm,宽 6—9cm,顶端短渐尖,基部楔形或近圆形,叶面深绿色,无毛,叶背密被白色绢毛;叶鞘绿色,被白色柔毛,顶部具长的白色睫毛。穗状花序顶生,宽卵形,长约 6cm,宽 5cm;苞片覆瓦状排列,卵形或宽卵形,长 3.5—4cm,宽 1.8—2.4cm,除裸露部分绿色外,其余白色,革质,无毛,边缘膜质,微绿色,顶具锐利的短尖头;小苞片折叠卵形,长约 2.5cm,绿色,具少量

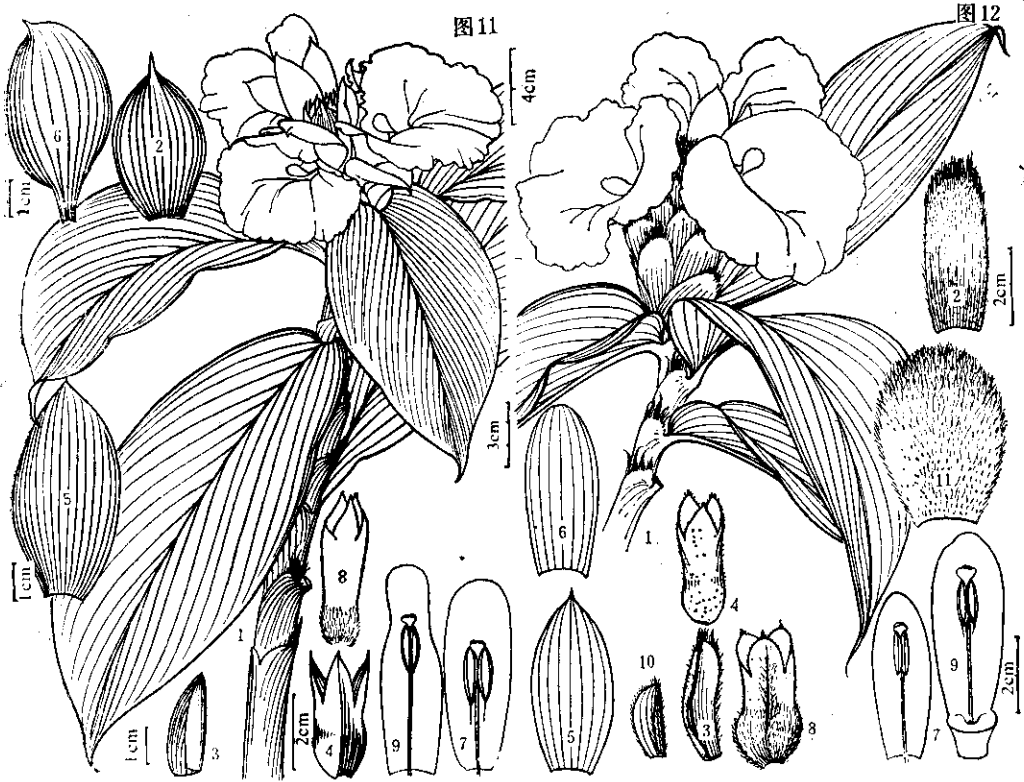


图 11 绿苞闭鞘姜 *Costus viridis* 1.具叶的花序 inflorescence with leaves; 2.苞片 bract; 3.小苞片 bracteole; 4.具花萼的子房 ovary with calyx; 5.花冠背裂片 dorsal corolla lobe; 6.花冠侧裂片 lateral corolla lobe; 7.雄蕊,柱头和花柱 stamen, stigma and style. 闭鞘姜 *Costus speciosus* 8.具花萼的子房 ovary with calyx; 9.雄蕊,柱头和花柱 stamen, stigma and style.

图 12 长圆闭鞘姜 *C. oblongus* 1.具叶的花序 inflorescence with leaves; 2.苞片 bract; 3.小苞片 bracteole; 4.具花萼的子房 ovary with calyx; 5.花冠背裂片 dorsal corolla lobe; 6.花冠侧裂片 lateral corolla lobe; 7.雄蕊,柱头和花柱 stamen, stigma and style. 莨笋花 *costus lacerus* 8.具花萼的子房 ovary with calyx; 9.雄蕊,柱头和花柱 stamen, stigma and style; 10.小苞片 bracteole; 11.苞片 bract.

红色斑点,无毛;花萼长约 2cm,无毛,革质,萼齿三角形,较长于萼管近 1 倍,顶具锐利的金黄色短尖头;花冠管长约 1cm,白色,无毛,裂片近等长,淡红色,无毛,背裂片椭圆形,长约 6cm,宽 3.2cm,侧裂片卵形,宽约 3cm,基部狭缩成短柄;唇瓣喇叭形,直径 5—5.5cm,淡红色,背面无毛,边缘皱波状;雄蕊长圆形,长约 5cm,宽 1.7cm,白色,除背面密被白色长柔毛,余无毛;花药狭椭圆形,白色;子房淡绿色,无毛。

近于闭鞘姜 *C. speciosus* (Koen.) Smith, 但后者特别不同在于雄蕊花瓶状, 花药着生在上部; 萼管较长于萼齿 2 倍; 唇瓣与花冠裂片密被白色绒毛。

### 长圆闭鞘姜 新种 图 12

***Costus oblongus*** S. Q. Tong, sp. nov.

Species aspecto et bracteis dense villosis deinde in fibras laceris *C. lacero* Gagnep. similis, sed floribus albis, bracteis oblongis, bracteolis plicatis anguste suboblongis, dentibus calycis triangulis, stamine elliptico, apice non convexo differt.

Herba erecta, 1.8—3 m alta, 1.4—2.3 cm diam.. Folia subsessilia; lamina elliptica vel lanceolato-elliptica, 18—33 cm longa, 6—14 cm lata, apice acuminata, basi rotunda vel cuneata, supra saturate viridis, glabra, subtus dense villosa; ligula brevis, 2—4 mm longa, dense villosa; vagina viridis pubibus albis dense obsita, apice longe albo-ciliata. Spica terminata, ovata vel late ovata, 4—13 cm longa, 3—9 cm lata; bractea oblonga, 2.8—4 cm longa, 1.2—1.6 cm lata, phoenicea dense villosa, apice fibris laceris; bracteola plicata anguste suboblonga, c. 3.2 cm longa, dilute rubra, margine ciliata. Calyx c. 2 cm longus, dilute ruber, dense pubescens, apice dentibus triangulis subaequilongis, margine ciliatis, tubus corollae c. 1 cm longus, albus, glaber, lobis subaequilongis, apice rubro-maculatis, dorsalibus ellipticis, c. 4.5 cm longis, 2.2 cm latis, lateralibus c. 2 cm latis; labellum tubatum, 5—6 cm diam., album, glabrum, margine crispatum; stamen ellipticum, c. 4.5 cm longum, 1.5 cm latum, apice non convexum, dorsaliter glabrum, antheris anguste ellipticis ad partem superiorem staminis insertis; stylus linearis, albus, glaber; stigma turbinatum, apice flavidum; ovarium rubrum pubibus albis dense obsitum.

Yunnan (云南): Yingjiang (盈江), alt. 1200m, in sylvis et ad margine fossae, 1983. 08. 06, S. Q. Tong et C. J. Liao (童绍全, 廖聪金) 24866 (Holotypus KUN); Ruli (瑞丽), S. Q. Tong et C. J. Liao (童绍全, 廖聪金) 24840; Tengchong (腾冲), W. Q. Yin (尹文清) 60-1042 Lincang (临沧), J. S. Xin (辛景三) 482; Xizang (西藏); Mèdog (墨脱), Exp. Qinghai-Xizang (青藏考察队) 74-1916, 74-4583.

直立草本, 高 1.8—3m, 直径 1.4—2.3cm。叶近于无柄; 叶片椭圆形或披针状椭圆形, 长 18—33cm, 宽 6—14cm, 顶端渐尖, 基部近圆形或楔形, 叶面深绿色, 无毛, 背面密被短柔毛; 叶舌短, 长 2—4mm, 密被长绒毛; 叶鞘绿色, 密被白色柔毛, 顶具长的白色睫毛。穗状花序顶生, 卵形或宽卵形, 长 4—13cm, 宽 3—9cm; 苞片长圆形, 长 2.8—4cm, 宽 1.2—1.6cm, 鲜红色, 密被长绒毛, 顶具撕裂状纤维; 小苞片折叠, 近狭长圆形, 长约 3.2cm, 淡红色, 边缘具睫毛; 花萼长约 2cm, 淡红色, 密被短柔毛, 顶具近等的三角状齿, 齿缘具睫毛; 花冠管长约 1cm, 白色, 无毛, 裂片等长, 顶具红色斑点, 背裂片椭圆形, 长约 4.5cm, 宽 2.2cm, 侧裂片宽约 2cm; 唇瓣喇叭形, 直径 5—6cm; 白色, 无毛, 边缘皱波状; 雄蕊椭圆形, 长约 4.5cm, 宽 1.5cm, 顶端不凸起, 背面无毛; 花药狭椭圆形, 着生于雄蕊的中部; 花柱线形, 白色, 无毛; 柱头陀螺状, 顶具淡黄色; 子房红色, 密被白色柔毛。

本种外形与被长绒毛的苞片, 以后成撕裂状纤维与莴笋花 *C. lacerus* Gagnep. 相似, 但花白色, 苞片长圆形, 小苞片折叠, 近狭长圆形, 花萼齿三角形, 雄蕊椭圆形, 顶端不凸起可以区别。

我国有关分类工作者长期将本种与开淡红色花的植物归入闭鞘姜 *C. speciosus* (Koen.) Smith 中, 后经吴德邻教授(1978), 根据苞片无硬质短尖头, 密被粗长毛, 叶片较

大,背被粗长毛等特点,将开白色与淡红色花的这两种植物定为一新种,即莴笋花 *Costus chinensis* T. L. Wu & Senjen. P. J. Mass (1979) 将我国的这类标本归入 *C. lacerus* Gagnep. 吴德邻教授(1981)又将他的新种归入 *C. lacerus* Gagnep.。作者近几年在模式产地采得花标本,经核实,他们均将两种不同的植物混为一种植物,其中开淡红色花的苞片卵形或宽卵形,小苞片折叠卵形,花萼齿圆形,雄蕊长圆形,顶端凸起,即莴笋花<sup>1)</sup> *C. lacerus* Gagnep.——*C. chinensis* T. L. Wu & Senjen Syn. nov., 植物分类学报 16(3): 41. 1978; 开白花的苞片长圆形,花萼齿三角形,雄蕊椭圆形,顶端不凸起,应从中分出,为作者上述的一个新种。

### 闭鞘姜属分种检索表

1. 花序从根基基部抽出;叶两面无毛 ..... 1. 光叶闭鞘姜 *C. tonkinensis* Gagnep.
1. 花序顶生;叶背密被毛。
  2. 叶背密被长绒毛;苞片顶端不具锐利的短尖头,以后撕裂成纤维。
    3. 花白色;苞片长圆形;小苞片折叠,近狭长圆形;花萼齿三角形;雄蕊椭圆形,顶端不凸起 ..... 2. 长圆闭鞘姜 *C. oblongus* S. Q. Tong
    3. 花淡红色;苞片卵形或宽卵形,小苞片折叠,卵形;花萼齿顶端圆形;雄蕊长圆形,顶端凸起 ..... 3. 莴笋花 *C. lacerus* Gagnep.
  2. 叶背密被绢毛;苞片顶端具锐利的短尖头,以后不撕裂成纤维。
    4. 花白色;苞片红色;雄蕊花瓶状;花萼红色,齿顶具红黑色的锐利短尖头,密被绢毛 ..... 4. 闭鞘姜 *C. speciosus* (Koen.) Smith
    4. 花淡红色;苞片绿色;雄蕊长圆形;花萼绿色,齿顶具金黄色的锐利短尖头,无毛 ..... 5. 绿苞闭鞘姜 *C. viridis* S. Q. Tong

1) 为模式产地的土名。