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## 滇黔数种颇饶趣味的菌物

减 穆

(中国科学院昆明植物研究所隐花植物标本馆 昆明 650204)

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**摘要** 本文报道了我国西南地区所产担子菌类 3 新种: 即采自贵州省梵净山的梵净山小奥德蘑 *Oudemansiella fanjingshanensis* Zang et Wu (白蘑科 Tricholomataceae); 威宁县境的贵州华牛肝菌 *Sinoboletus guizhouensis* Zang et Wu (牛肝菌科 Boletaceae) 和采自云南省哀牢山的巨盖鬼笔 *Phallus megacephalus* Zang (鬼笔科 Phallaceae). 文中并讨论了有关该新分类群的地理区系成分, 田中线划分的见解。

**关键词** 梵净山小奥德蘑, 贵州华牛肝菌, 巨盖鬼笔, 田中线

真菌新种  
1 分类

## 1.1 梵净山小奥德蘑 新种 图 1-1—5

*Oudemansiella fanjingshanensis* Zang et Wu, \* sp. nov. Fig. 1-1—5

Pileus 6—9 cm latus, convexus demum plano-concavus, rubrus, rubrobrunneus, siccus. Caro albida. Lamellae adnatae vel adnexae, cum lamellulis confertae, crassae ad 0.5—0.8 cm. Stipes 5—10 cm longus, 0.8—1.2 cm crassus, obclavatus, albidus, candidus, rubineus. Epicutis pilei et hyphis clavatis ad vesiculosos, erecte dispositis. Basidia 4-sporigera; 45—65 × 12—20 μm. obclavata. Basidiosporae 18.5—20 × 13—17 μm, subglobose vel ovoideae, hyalinae, in solutione Melzeri brunneo-hyalinae. Pleurocystidia 65—175 × 14—20 μm, fusioidea. Cheilocystidia 70—160 × 20—26 μm, subfusioidea. Hyphae fibulatae.

Habitat in sylvis humidis praecipue quercinis.

Guizhou: Fanjingshan (梵净山), 3, IX. 1993. Wu Xing-liang (吴兴亮) 3780 (HKAS 39316, Typus).

菌盖宽 6—9cm. 初中凸, 后中凹至平展, 盖表红色, 红褐色, 表面干。肉白色。菌褶直生至弯生, 厚, 密集。褶幅宽 0.5—0.8cm. 柄长 5—10cm, 粗 0.8—1.2cm. 粗壮, 近棒状, 白色, 污白色, 红玉色, 基部膨大。菌环膜质, 易消失。盖表皮层细胞棒状至泡囊状, 拟子实层状直立排列。担子 55—75 × 14—20 μm. 近棒状, 孢子 4 枚。担子孢子 18.5—20 × 13—17 μm. 近圆形, 卵形, 透明, 在梅氏液下, 透明而微褐。侧生囊状体 65—175 × 14—20 μm, 长梭形。褶缘囊状体 70—160 × 20—26 μm, 近纺锤形。菌丝有锁状联合。

本种与云南小奥德蘑 *Oudemansiella yunnanensis* Yang et Zang<sup>[1]</sup> 相似, 但菌盖色

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\* Wu = Wu Xing-liang 吴兴亮(贵州科学院, 贵阳, 550001. Guizhou Academy sciences, Guiyang 550001).

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非白色,而呈红色,孢子小于后者,后者孢子  $24-38 \times 23-33\mu\text{m}$ 。

### 1.2 贵州华牛肝菌 新种 图 1-6-10

*Sinoboletus guizhouensis* Zang et Wu, sp. nov. Fig. 1-6-10

Pileus 4—6 cm latus, convexus demum planoconvexus, siccus, rugulosus, tomentosus, rubiginosus, aureo-brunneus, superficiei pilei hyphis 4—8  $\mu\text{m}$  crassis intertextis. Contextus 0.5—1.2 cm crassus, flavus, immutabilis. Hymenophorum aureum vel flavum, tenue. Tubi bistrati, superiores 0.2—0.3 mm longi, 0.1 mm crassi, interiores 0.1 mm longi, 0.1 mm crassi, adnati, sinuatoadnati. Pori minuti, rotundi vel subrotundi, 15—20 per cm. Stipes 4—6 cm longus, 1.5—3 cm crassus, clavatus, subaequalis, basim versus bulbosus, apice reticulatus, rubidus vel rubiginosus. Mycelio flavo. Basidiosporae 13—15.6  $\times$  5—8  $\mu\text{m}$ , ovoideae vel ellipsoideae, leves, aurantiacae, in solutione Melzeri brunneo-aurantiacae. Pleurocystidia 20—35  $\times$  6—10  $\mu\text{m}$ , clavata. Cheilocystidia 25—43  $\times$  6—15  $\mu\text{m}$  fusiformia. Fibulatae adsunt.

Habitat in sylvis humidis praecipue Lithocarpinis.

Guizhou: Wei Ning Co (威宁县), Hei Shi Tou (黑石头) F. L. Zhou, 4002 (HKAS 29186, Typus).

菌盖宽 4—6cm。初中凸,呈半圆形,后平展而中微凸。表面干,皱而被毛茸,锈褐色,金褐色。盖表菌丝交织型,粗 4—8 $\mu\text{m}$ 。盖肉厚 0.5—1.2cm。淡黄色,伤后不变色。子实层体金黄色,或淡黄色,管层薄。菌管具双层,表层菌管长 0.2—0.3mm,阔 0.1mm。内层菌管长 0.1mm,阔 0.1mm。菌管近柄处贴生,弯曲贴生。表层菌管管孔小型,圆形,近圆形,每 cm 具管孔 15—20 枚。菌柄长 4—6cm,粗 1.5—3cm。棒状,近等粗,基部多膨大,柄表上端有明显网络,红色或锈红色。菌丝黄色。担孢子 13—15.6  $\times$  5—8 $\mu\text{m}$ ,卵形或椭圆形,平滑,金黄色,在梅氏液下呈褐黄色。侧生囊状体 20—35  $\times$  6—10 $\mu\text{m}$ ,棒状。管缘囊状体 20—35  $\times$  6—15 $\mu\text{m}$ ,纺锤形。未见锁状联合。

本种与重孔华牛肝菌 *Sinoboletus duplicatoporus* Zang 相近似,唯柄上部有明显网络,且孢子较大,后者孢子小,仅 10—11.5  $\times$  3.9—7 $\mu\text{m}$ 。<sup>[6]</sup>

### 1.3 巨盖鬼笔 新种 图 1-11-12

*Phallus megacephalus* Zang, sp. nov. Fig. 1-11-13

Basidiocarpus solitarius vel gregarius. Pileus conicus vel campanulatus, 6—7.2 cm longus, 4—5.5 cm latus, superficiei reticulatus, apice truncatus vel annulatus, in centro uniperforatus, margine expansus, ad materiam sporiferam brunneo-ater vel olivaceus. Receptaculum subroseum, cylindricum, fragile, alveolare, cavum, 10—15cm longum, 1.4—2 cm latum, ad parietem bistrato cavernularum aeriarum praeditum. Indusium album, rudimentarium, membranaceum, 3—4 cm longum, appressum, annulatum. Peridium album, ovatum vel anguste ovatum, 4—6 cm longum, 3—5cm latum. Mesoperidium glutinosum, 0.2—0.5 cm crassum. Basidia 6—11  $\times$  2.5—6 $\mu\text{m}$ , clavata, 4—8 sporigera. Basidiosporae anguste ellipticae, ovatae, levigatae, strictae vel arcuatae, 2.5—5.2  $\times$  1.3—1.5  $\mu\text{m}$ , hyalinae vel olivaceo-hyalinae, in solutione

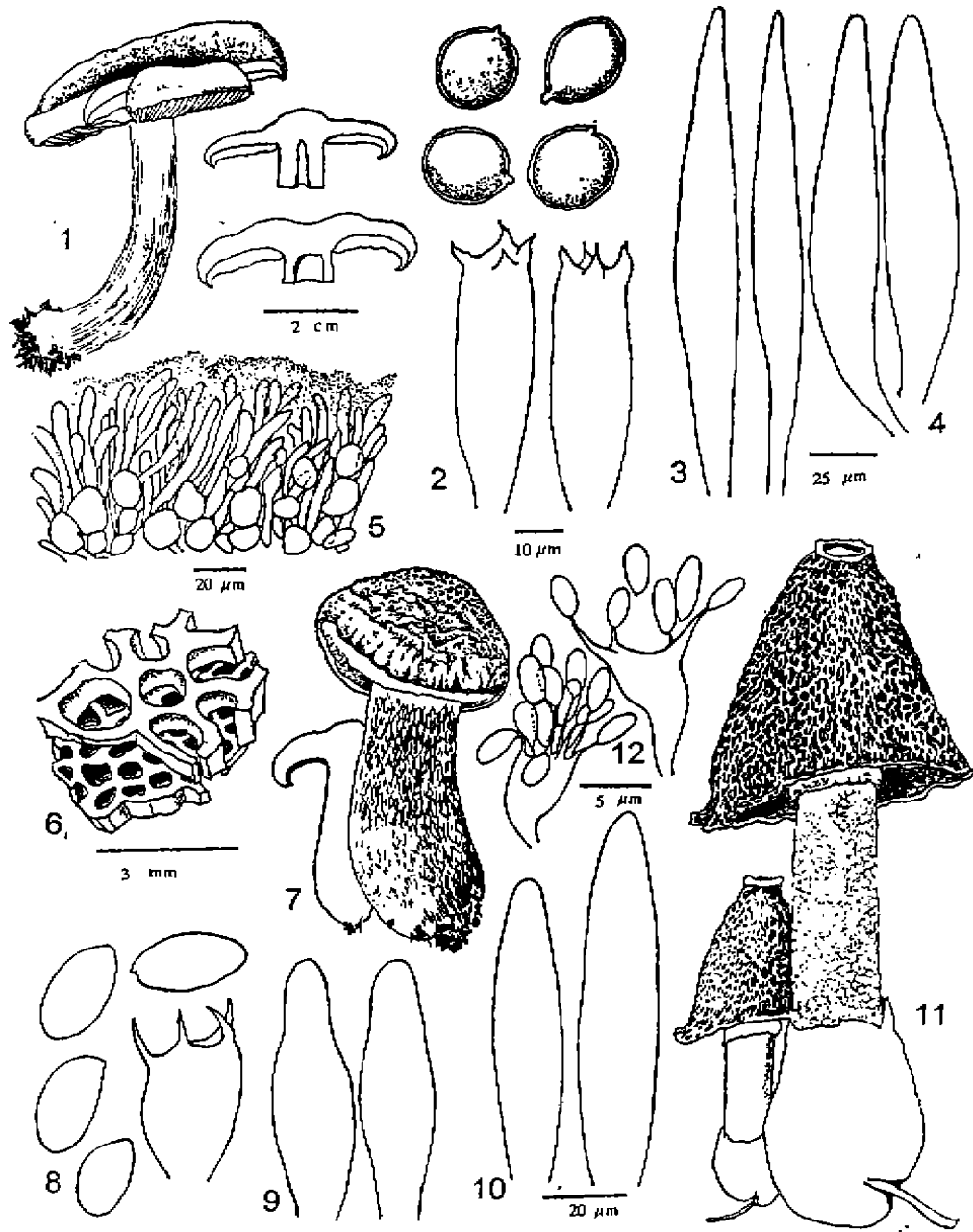


图 1 梵净山小奥德蘑 (1—5)

1. 担子果; 2. 担子和担孢子; 3. 侧生囊状体; 4. 褶缘囊状体; 5. 菌盖皮层。 贵州华牛肝菌 (6—10):  
6. 部分分子实层体; 7. 担子果; 8. 担子和担孢子; 9. 侧生囊状体; 10. 管缘囊状体。 巨盖鬼笔(11—12):  
11. 担子果; 12. 担子和担孢子

Fig. 1 *Oudemansiella fanjinshanensis* Zang et Wu (1—5)

1. Basidiocarps; 2. Basidia & Basidiospores; 3. Pleurocystidia; 4. Cheilocystidia;  
5. Pileipellis. *Sinoboletus guizhouensis* Zang et Wu(6—10); 6. A part of hymenophore;  
7. Basidiocarps; 8. Basidia & Basidiospores; 9. Pleurocystidia; 10. Cheilocystidia.  
*Phallus megacephalus* Zang (11—12); 11. Basidiocarps; 12. Basidia & Basidiospores

KOH flavidae, in solutione Melzeri brunneolae.

Habitat in sylvis humidis praecipue Lithocarpinis et Sinocalaminis.

Yunnan: Jing dong County (景东县), Ai Lao Mts. (哀牢山), Xu Jian-Ba (徐家坝), 25. VIII. 1994. M.Zang (臧穆) 12402 (HKAS 28176, Typus).

担子果单生或集生。菌盖圆锥形, 钟形, 高 6—7.2cm, 阔 4—5.5cm, 外表面呈网络状, 顶端平截, 呈圆圈状, 中央具穿孔, 盖缘外展。产孢层黑褐色或橄榄褐色。子层托粉红色, 质脆, 表面具小孔, 壁具 2 层气室, 高 10—15cm. 粗 1.4—2cm. 具发育不良的菌幕残片, 白色, 高 3—4cm. 环状, 贴生。包被白色, 卵形或狭卵形, 高 4—6cm. 阔 3—5cm. 包被中层具胶质, 厚 0.2—0.5cm. 担子 6—11 × 2.5—6 $\mu$ m. 棒状, 具 4—8 枚孢子。担孢子狭椭圆形, 卵形, 壁光滑, 直或微弯曲, 透明, 透明橄榄色。在 KOH 液下呈淡黄色, 梅氏液下呈淡棕褐色。

本种与香笔菌 *Phallus fragrans* Zang 相似, 但子层托为粉红色, 非白色, 且菌盖大而张开, 孢子较大, 2.5—5.2 × 1.3—1.5 $\mu$ m, 而后者较小, 2.5—3.7 × 0.8—1.7 $\mu$ m.<sup>[9]</sup>

## 2 菌物地理

上述三种各归于白蘑科 Tricholomataceae, 牛肝菌科 Boletaceae, 和鬼笔科 Phallaceae, 该三科蕴藏的种类和分布量在滇、黔既丰富, 又有较多的特有种。从本区菌物的温带和亚热带区系成分以及地理分布型的交汇组合来看, 是很有代表性的。在研究我国西南地区的植物区系和植被组合时, 田中线 (Tanaka Line) 往往被植物学家所注意。以此来了解菌物的地理分布和区系的关联, 确有可借鉴处。所谓田中线, 这是日本近代的柑桔类专家田中长三郎 (Tyozaburo [Chozaburo] Tanaka) 在他研究亚洲柑桔属 *Citrus* 的分类分布过程中设想出一条该属分布型规律的界线。该线大致在北纬 19—28 度, 东经 98—106 度附近, 其南点大致在越南的红河口, 逆流而上, 即我国的元江, 再向西北经个旧, 楚雄, 北越云岭到西藏的察隅; 此线以西的植物和菌物区系成分似以中国-喜马拉雅区系成分为主, 此线以东则似以中国-日本区系成分为常见<sup>[11, 12]</sup>, 此线的划分是基于田中长三郎长期对柑桔属的研究得出的一个结论, 但不可能适用于所有的植物和菌物, 因为生物本身各有其特性和独自的生态多样性, 东西通道的多样迁移, 生物间形形色色的相应变异, 在长期的地史和环境的千变万化中, 怎能一成不变? 此线的东西划分, 又岂能不可逾越? 如果机械的把此线从个旧以南到察隅, 划一直线, 不管山川走向, 不论局部环境, 只以“唐标铁柱”式的截然两界, 恐难能完整理解田中线的梗概。华牛肝菌属的重孔华牛肝菌 *Sinoboletus duplicatoporus* Zang 和巨孔华牛肝菌 *Sinoboletus magniporus* Zang 均产于滇西南, 生于壳斗科植物林下, 与石栎属 *Lithocarpus* 和栎属 *Quercus* 有菌根关系<sup>[6]</sup>, 近来调查, 重孔华牛肝菌总是较多的生于景东石栎 *Lithocarpus jingdongensis* Hsu et Qian 树下。菌与树种菌根共生的专化性和长期性, 在这一地区表达了中国-喜马拉雅成分的印记。景东栎和重孔华牛肝菌从未在此线以东出现。而贵州华牛肝菌 *Sinoboletus guizhouensis* Zang et Wu 最近在贵州西部的威宁县石栎林下发现, 这可能是中国-喜马拉雅区系成分的东移。小奥德蘑属 *Oudemansiella* Speg. 在西南的针叶林和壳斗科林下, 已知有 6 种<sup>[9]</sup>, 梵净山小奥德蘑 *Oudemansiella fanjingshanensis* Zang et Wu 见于贵州东部梵净山的栎林下, 在田中线以东, 是西南地区的温带和亚热带与石栎属可能有菌

根关系的菌种。菌根菌随着寄主的分布范围而建立起的共生组合，这是生物在长期演化中的绝妙契合<sup>[3]</sup>。关于巨盖鬼笔 *Phallus megacephalus* Zang, 多见于云南境内的慈竹 *Sinocalamus affinis* McClure 和景东石栎林下, 现知仅分布于横断山南段的哀牢山中, 这应理解是一个局限属于中国-喜马拉雅区系成分的种。

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ON THREE INTERESTING FUNGI FROM YUNNAN AND  
GUIZHOU, CHINA

Zang Mu

(Cryptogamic Herbarium, Kunming Institute of Botany, Academia Sinica, Kunming 650204)

**ABSTRACT** Three new Basidiomycetous taxa are proposed here based on a comparative study of mycological collections from Yunnan and Guizhou during the period 1993—1994.

1. Taxonomy: (1). *Oudemansiella fanjingshanensis* Zang et Wu, (Family Tricholomataceae). This species is closely related to *Oudemansiella yunnanensis* Yang et Zang, but it is clearly distinct from the latter in the reddish cap instead of whitish colour, and the smaller basidiospores, the latter is  $24-38 \times 23-33 \mu\text{m}$ . (2). *Sinoboletus guizhouensis* Zang et Wu (Family Boletaceae). It resembles to *Sinoboletus duplicatoporus* Zang in appearances, but differs in that the basidiospores  $13-15.6 \times 5-8 \mu\text{m}$  are larger than the latter ( $10-11.5 \times 3.9-7 \mu\text{m}$ ) and in the obvious strong stipe reticulation. (3). *Phallus megacephalus* Zang, (Family Phallaceae). It is very close to *Phallus fragrans* Zang, from which it differs in the pinkish receptacle colour and with the big cap, the basidiospores  $2.5-5.2 \times 1.3-1.5 \mu\text{m}$ , a little larger than the latter ( $2.5-3.7 \times 0.8-1.2 \mu\text{m}$ ).

2. Mycogeography. The genus *Oudemansiella* Speg., there are more than 6 species that occur in forest with Conifers and Fagaceae from South-western China. The *Oudemansiella fanjingshanensis* it occurs in fagaceous forest associated with ectomycorrhizal genera such as *Quercus* in Fanjingshan (Mts.) area, eastern Guizhou. The Genus *Sinoboletus* Zang, it is an endemic genus from South western China. The *Sinoboletus guizhouensis* that differs in the distribution pattern from the other two species from Yunnan. Species of the genus occur in fagaceous forest associated with ectomycorrhizal genera such as *Lithocarpus* and *Quercus*, probable, it is absent in Eastern China even though compatible phytobiont host genera are present. The *Pha-*

*llus megacephalus*, occurs under *Sinocalamus affinis* McClure, and *Lithocarpus chingtungensis* Hsu et Qian, It is possible that is a mycorrhizal fungus in Ailo Mt., a southern terminal of Hengduan Mts. Understanding the mycogeography of the South western China can better be achieved in the term of the Tanaka Line, which is suggested by Dr. Tyozaburo [Chozaburo] Tanaka, who is well documented the distribution pattern of genus *Citrus*, and pointed out this line may be is effectively delimited the eastern boundaries of Sino-Japanese floristic element and the western bountaries of Sino-Himalayan ones. the *Phallus megacephalus* is exact belonging to Sino-Himalayan element. Species of genus *Sinoboletus* have a disjunct distribution. Its species *Sinoboletus duplicatoporus* and *S. magniporus* occur in fagaceous forest, associated with *Lithocarpus*, *Quercus* in Yunnan, they are believed to have been crucial to the Sino-Himalayan one, the *Sinoboletus guizhouensis*, it seems to has a wide spectrum of hosts and could has migrated to the western are of Guizhou. The *Oudemansiella fanjingshanensis*, it probably widely dispersed with its hosts in Laurasia.

**KEY WORDS** *Oudemansiella fanjingshanensis*, *Sinoboletus guizhouensis*, *Phallus megacephalus*, mycogeography