

## Notes on *Dentipellis* (Russulales, Basidiomycota)

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**Abstract:** *Dentipellis acystidiatata* Y.C. Dai, H.X. Xiong & Sheng H. Wu is described as new from China, and its illustrated description is provided. The species is characterized by hydnceous hymenophore, a monomitic hyphal structure, lack of both cystidia and gloeoplerous hyphae, and small, rough, strongly amyloid basidiospores (4.1–5.2 × 2.4–3.2 μm). All the accepted species in *Dentipellis* were studied, and the knowledge of them is briefly summarized in an identification key.

**Key words:** *Dentipellis*, *Dentipellis acystidiatata*, taxonomy

### 软齿菌属（红姑目，担子菌纲）小记

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**摘要:** 本文对世界范围内的软齿菌属种类进行了研究, 并发现无囊软齿菌 *Dentipellis acystidiatata* 为一新种, 且对该种进行了详细描述。该种的主要特征是子实层体齿状、单系菌丝系统、无囊状体和胶化菌丝、担孢子小 (4.1–5.2 × 2.4–3.2 μm)、表面粗糙、具淀粉质反应。对软齿菌属的种类进行了总结, 并给出了该属所有种类的检索表。

**关键词:** 软齿菌属, 无囊软齿菌, 分类

### INTRODUCTION

The genus *Dentipellis* Donk was described by Donk (1962), and an extensive study on the genus was made by Ginns (1986), and he accepted three species. *Amylodontia parmastoi* Nikol. was described from the Russian Far East with rough and amyloid basidiospores

(Nikolajeva 1967), and Stalpers (1996) proposed it in *Dentipellis*. Two additional species, *D. microspora* Y.C. Dai and *D. taiwaniana* Sheng H. Wu, were recently reported from East Asia (Dai 1998; Wu 2007).

Several hydnceous corticioid specimens were collected from rotten coniferous wood in northeastern China. They have a monomitic hyphal structure, clamp

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connections on generative hyphae, oblong-ellipsoid basidiospores which are slightly thick-walled, finely roughened, amyloid and acyanophilous. These characters show that they should belong to *Dentipellis*, but no known name fits them, hence a new species is described for them.

Specimens of all accepted species of *Dentipellis* were studied, and an identification key is made. In addition, statistical variations of spore dimensions of each species were measured, and they are included in the key.

## 1 MATERIALS AND METHODS

The studied specimens are deposited at the Herbarium of the Institute of Applied Ecology, Chinese Academy of Sciences (IFP). Description of macroscopic characters was based on both fresh and dried specimens. Anatomy was studied, and measurements and drawings were made from slide preparations stained with Cotton Blue. Drawings were made with the aid of a drawing tube. In presenting the variation in the size of the spores, the 5% of the measurements at each end of the range are shown in parentheses. The following abbreviations are used: IKI = Melzer's reagent, IKI<sup>-</sup> = negative in Melzer's reagent, KOH = 5% potassium hydroxide, CB = Cotton Blue, CB<sup>+</sup> = cyanophilous, CB<sup>-</sup> = acyanophilous, L = mean spore length (arithmetic average of all spores), W = mean spore width (arithmetic average of all spores), Q = variation in the L/W ratios between the specimens studied, n = number of spores measured from given number of specimens. Special colour terms are from Petersen (1996).

## 2 Description

*Dentipellis acystidiata* Y.C. Dai, H.X. Xiong & Sheng H. Wu, sp. nov. Fig. 1

Carpophorum annuum, resupinatum, contextus cremeus. Spinae albae vel cremae. Systema hypharum monomiticum, hyphae fibulatae. Sporae pallidae, oblongae vel ellipsoideae, amyloideae, 4.1–5.2 × 2.4–3.2 μm.

Holotype: China. Heilongjiang Prov., Ningan County, Jingbohu Forest Park, rotten gymnosperm wood,

10 IX 2007 *Dai 8948* (IFP).

Etymology — *Acystidiata* (Lat., adj.), referring to absent of cystidia.

Fruitbody — Basidiocarps annual, resupinate, inseparable, 10cm or more in longest dimension, up to 3cm wide, without odour or taste. Fresh spines soft, snow-white, white to cream, when dry cream, buff to cinnamon-buff, fragile, up to 5mm in length, 0.5mm in diam. at their base. Margin white to cream, very narrow, less than 1mm wide. Subiculum cream, soft corky, less than 1mm thick.

Hyphal structure — Hyphal system monomitic; generative hyphae with clamp connections, IKI<sup>-</sup>, CB<sup>-</sup>; tissue unchanged in KOH.

Subiculum — Generative hyphae colourless, thin-walled, straight, occasionally branched at right angles from the clamp connection, sometimes collapsed, regularly arranged or loosely interwoven, IKI<sup>-</sup>, CB<sup>-</sup>, 2.5–4.8 μm in diam. Gloeoplerous hyphae absent.

Spines — Hyphae in trama colourless, thin-walled, occasionally branched, IKI<sup>-</sup>, CB<sup>-</sup>, parallel along the spines or loosely interwoven, 2–4 μm in diam., gloeoplerous hyphae absent. Gloeocystidia absent; basidia clavate with four sterigmata and a basal clamp connection, 12.5–25 × 4–5.2 μm; basidioles are similar to basidia by the shape, but slightly smaller.

Spores — Basidiospores oblong-ellipsoid, slightly thick-walled, colourless, minutely rough, strongly amyloid, CB<sup>-</sup>, (3.7–)4.1–5.2(–5.4) × (2.2–)2.4–3.2(–3.4) μm, L = 4.75 μm, W = 2.84 μm, Q = 1.51–1.8 (n = 120/4, L1 = 4.37 μm, W1 = 2.9 μm, Q1 = 1.51; L2 = 4.91 μm, W2 = 2.66 μm, Q2 = 1.55; L3 = 4.89 μm, W3 = 2.71 μm, Q3 = 1.8; L4 = 4.83 μm, W4 = 2.98 μm, Q4 = 1.62).

Remarks — *Dentipellis acystidiata* is closely related to *D. parmastoi* (Nicol.) Stalpers, and both species are lack of gloeocystidia. The type material of *D. parmastoi* was examined, and its basidiospores are (3.9–)4–5(–5.1) × (2.7–)2.8–3.4(–3.6) μm, L = 4.57 μm, W = 3.07 μm, Q = 1.49 (n = 30/1). *Dentipellis acystidiata* has fairly similar basidiospores as *D. parmastoi*. The remarkable difference between the two species is that the gloeoplerous hyphae are frequently present in *D. parmastoi*, but are absolutely absent in *D. acystidiata*.

**Key to species of *Dentipellis* (after each species, spore dimensions are given)**

1. Cystidia absent.....2
1. Cystidia present .....3
2. Gloeoplerous hyphae absent. .... *D. acystidiata* Y.C. Dai & H.X. Xiong  
(3.7-)4.1-5.2(-5.4) × (2.2-)2.4-3.2(-3.4)μm, L=4.75μm, W=2.84μm, Q=1.51-1.8 (n=120/4)
2. Gloeoplerous hyphae present ..... *D. parmastoi* (Nikol.) Stalpers  
(3.9-)4-5(-5.1) × (2.7-)2.8-3.4(-3.6)μm, L=4.57μm, W=3.07μm, Q=1.49 (n=30/1)
3. Basidiospores > 5μm in length.....*D. fragilis* (Pers.:Fr.)  
5-5.8(-6) × (3.8-)4.1-4.9(-5.1)μm, L=5.3μm, W=4.45μm, Q = 1.19 (n=32/1)
3. Basidiospores < 5μm in length.....4
4. Basidiospores mostly > 4.2μm in length .....*D. dissita* (Berk. & Cooke) Maas Geest  
(4-)4.2-4.7(-4.8) × (3-)3.2-3.7(-3.8)μm, L=4.47μm, W=3.42μm, Q = 1.31 (n=30/1)
4. Basidiospores mostly < 4.2μm in length .....5
5. Basidiospores > 3.5μm in length.....*D. leptodon* (Mont.) Maas Geest.  
(3.4-)3.6-4.2(-4.8) × 2.8-3.3(-3.6)μm, L=3.92μm, W=3.02μm, Q=1.27-1.33 (n=61/2)
5. Basidiospores < 3.5μm in length .....6
6. Dendrohyphidia present; occurring in temperate forests..... *D. microspora* Y.C. Dai  
(2.4)2.5-3.2(-3.3) × (1.6-)1.7-2.2(-2.3)μm, L=2.9μm, W=1.95μm, Q=1.49-1.5 (n=61/2)
6. Dendrohyphidia absent; occurring in subtropical forests ..... *D. taiwaniana* Sheng H. Wu  
(2.7-)2.8-3.4(-3.5) × (2-)2.1-2.4μm, L=3.11μm, W=2.22μm, Q=1.4 (n=30/1)

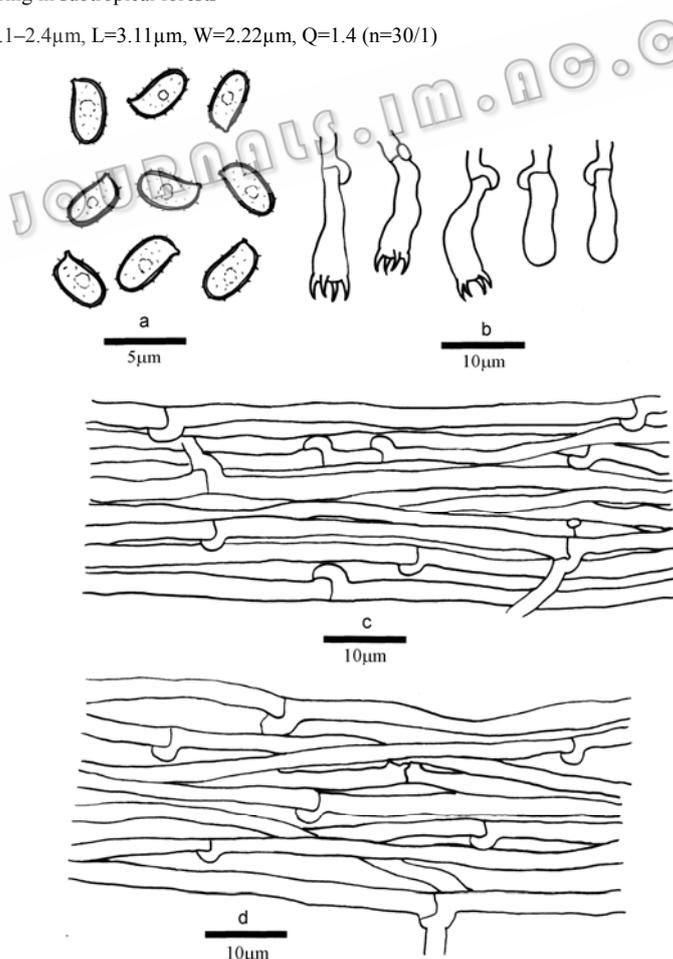


Fig. 1 Anatomical details of *Dentipellis acystidiata* (drawn from the type). a: Basidiospores; b: Basidia and basidioles; c: Subicular hyphae; d: Tramal hyphae.

Additional specimens (paratypes) examined — China. Heilongjiang Prov., Ningan County, Jingbohu Forest Park, rotten gymnosperm wood, 10/IX/2007 *Dai* 89487. Jilin Prov., Antu County, Changbaishan Nat. Res., rotten stump of *Pinus*, 26/VIII/2005 *Dai* 7010, 7014; rotten gymnosperm wood, 27/VIII/2007 *Wei* 3419. Changbai County, Wangtianhe, rotten gymnosperm wood, 17/IX/2005 *Wei* 2861.

Other specimens examined — *Dentipellis dissita*. Canada. Ontario, Dorset, 22/IX/1984 *Ginns* 8613 (DAOM 190893). U.S.A. New York, Alleghany State Park, on wood of angiosperm, 15/IX/1984 *Ginns* 8610 & *Lowe* (DAOM 190988). — *D. fragilis*. China. Jilin Prov., Antu County, Changbaishan Nat. Res., on fallen trunk of *Acer*, 14/IX/2007 *Dai* 9193; on rotten wood of *Populus*, 21/IX/2002 *Dai* 3914. — *D. leptodon*. Canada. Ontario, Algonquin Nat. Park, on *Betula*, 22/X/1966 *Cain* (DAOM 158439). China. Xizang Auto. Reg., Linzhi, Sejlilashan Mts., on fallen branch of *Abies*, coniferous forest, 9/VIII/2004 *Yu* 65; on fallen trunk of *Larix*, coniferous forest, alt. 3,000m, 4/VIII/2004 *Dai* 5727. India. Himachal Pradesh, Mahasu, Narkanda, on fallen log, 17/VIII/1965 *Khara* 4029 (DAOM 149199). — *D. microspora*. China. Jilin Prov., Antu County, Changbaishan Nat. Res., on rotten wood of *Abies*, 13/VIII/1997 *Dai* 2432 (holotype); on fallen trunk of *Pinus*, 12/IX/2007 *Dai* 9020. — *D. parmastoi*, Russia.

Khabarovsk Reg., Lazo Dist., Mukhen, on *Pinus koraiensis*, 28/IX/1961 *Parmasto* TAA 14 689 (holotype). — *D. taiwaniana*. China, Taiwan, Taizhong, Taizhong Metropolitan Park, on rotten trunk of *Cinnamomum*, 6/VI/2004 *Wu* 0406-4 (TNM F 17066, holotype).

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