

Polypores from northern and central Yunnan Province, Southwestern China

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126 species of polypore were identified based on approximately 350 collections from four forest parks or nature reserves in northern and central Yunnan Province, southwestern China. Most species are new to this area. A checklist of these polypores with substrate and collecting data is supplied. *Junghuhnia subnitida* H.S. Yuan & Y.C. Dai is described and illustrated as new to science.

Keywords: Basidiomycota, checklist, *Junghuhnia*, taxonomy, wood-rotting fungi

Intensive studies on the wood-rotting fungi in China were carried out in recent years, especially on polypore diversity in the temperate and boreal forests in the country (Dai 2000, Dai *et al.* 2004b, Dai & Penttilä 2006, Yuan *et al.* 2006, Li *et al.* 2007). Southwestern China, including Sichuan, Guizhou and Yunnan Provinces, is an area of high biodiversity. Some reports on wood-inhabiting fungi from the area were published (Ryvarden 1983, Maekawa & Zang 1995, Maekawa *et al.* 2002, Dai & Wu, 2003, Dai *et al.* 2004a). However, polypores have not been systematically investigated in the Yunnan Province. Up to the present, only 40 species have been reported from the province (Ryvarden 1983, Zhao Zhang 1992, Zhao 1998, Dai 1999, Dai *et al.* 2001).

Between 1999 and 2006, five field trips were carried out in four forest parks or nature reserves in northern and central Yunnan (Fig. 1). Approximately 350 specimens of poroid wood-rotting fungi were collected. Bitahai Forest Park, Shuoduhu Forest Park and Yulongxueshan Nature Reserves are located in northern Yunnan, and primeval forests grow in these areas. The main coniferous trees are *Abies georgei*, *A. forrestii*, *Picea likiangensis*, *Larix potaninii*, *Pinus densata*; common angiosperm trees are *Betula albo-sinensis*, *Quercus pannosa*, *Populus yunnanensis*, and *Salix delavayana*.

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Zixishan Nature Reserve is placed in central Yunnan. It is covered with secondary mixed forests composed of *Betula spp.*, *Lithocarpus spp.* and *Pinus spp.*

The present study supplies a checklist of polypores from these areas. One species is described as new to science.

Materials and Methods

The specimens studied are deposited at herbarium of the Institute of Applied Ecology, Chinese Academy of Sciences (IFP). The microscopic routine used in this study is described in Niemelä *et al.* (2004). Following abbreviations are used: CB = Cotton Blue, CB+ = cyanophilous, CB- = acyanophilous, IKI = Melzer's reagent, Iki = inamyloid and indextrinoid, KOH = 5 % potassium hydroxide, L = mean of spore length (arithmetical average of all spores measured), W = mean of spore width (arithmetical average of all spores measured), Q = extreme values of the length/width ratios among the studied specimens, and n = the number of spores measured from given number of specimens. Special colour terms are from Rayner (1970) and Peterson (1996).

Taxonomy

Junghuhnia subnitida H. S. Yuan & Y. C. Dai **sp. nov.** – Fig. 2–6.
Mycobank no.: MB 511634

Basidioma annuum, resupinatum. Facies pororum roseum vel cinnamomeum; pori rotundi vel angulati, 5–7 per mm. Systema hypharum dimiticum, hyphae generatoriae fibulatae, hyphae skeletales subiculi 2.2–4.5 µm in diam. Sporae hyalinae, late ellipsoideae vel subgloboae, IKI-, CB-, 4.4–5 µm × 3.3–4 µm.

Holotypus. – China, Yunnan Province, Xianggelila County, Bitahai Forest Park, on fallen branch of *Salix sp.*, 30 Aug 2006 Yuan 1970 (holotype in IFP, isotype in H).

Description – Basidiomata annual, resupinate, leathery when fresh, corky and light in weight when dry, without odour or taste when fresh, up to 10 cm long and 5 cm wide. Pore surface clay pink when fresh, becoming cinnamon to fulvous during drying; sterile margin up to 1 mm, cream, incrassate, involute when dry, pores round to angular, 5–7 per mm, dissepiments thin, entire.

Hyphal system dimitic; generative hyphae with clamp connections, skeletal hyphae IKI-, CB+; tissue unchanged in KOH.

Subiculum cream to buff, corky when dry, thin, ca. 0.5 mm thick. Generative hyphae frequent, hyaline, thin-walled, occasionally branched, 2–3.5 µm in diam; skeletal hyphae thick-walled to subsolid, flexuous, unbranched, interwoven, 2.2–4.5 µm in diam.

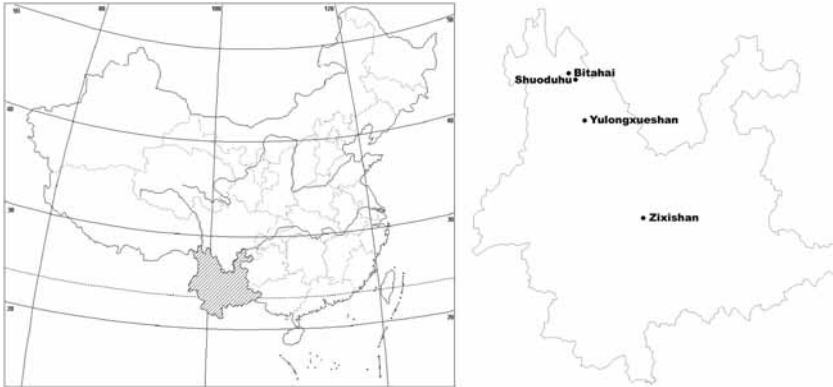


Fig. 1. Investigated areas (black dots) in the Yunnan Province (shaded area) in China.

Tubes concolorous with pore surface, corky, up to 1.5 mm long. Trama dominated by skeletal hyphae; generative hyphae hyaline, thin- to slightly thick-walled, rarely branched, 2–3 μm in diam; skeletal hyphae thick-walled to subsolid, unbranched, flexuous, interwoven, 2.2–3 μm in diam.

Skeletocystidia abundant, clavate, thick-walled to subsolid, covered with crystals, 35–110 μm \times 7–15 μm , arising from trama, distinctly protruding through (above) the hymenium. Hyphal pegs occasionally present.

Basidia barrel-shaped, bearing four sterigmata and a basal clamp connection, 8.5–13 μm \times 5–6 μm ; basidioles in shape similar to basidia, but smaller.

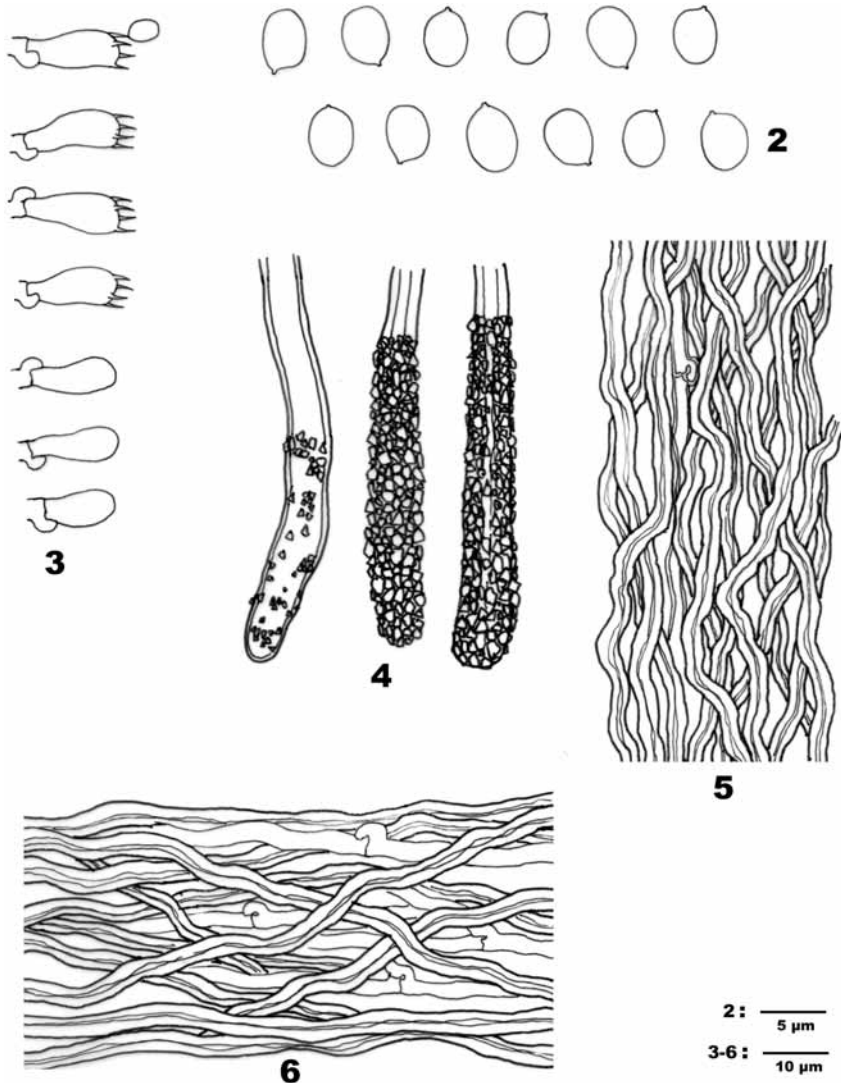
Basidiospores broadly ellipsoid to subglobose, hyaline, thin-walled, smooth, IKI–, CB–, (4.3–)4.4–5(–5.2) μm \times (3.1–)3.3–4(–4.1) μm , $L = 4.64 \mu\text{m}$, $W = 3.62 \mu\text{m}$, $Q = 1.27\text{--}1.29$ ($n = 61/2$).

Etymology. – *subnitida* (Lat.): resembling *Junghuhnia nitida*.

Habitat. – On living angiosperm trees, fallen trunks or branches.

Additional specimens examined (paratypes). – China, Yunnan Province, Xianggelila County, Bitahai Forest Park, on fallen angiosperm branch, 30 Aug 2006 *Yuan 1953* (IFP); on fallen branch of *Betula sp.*, 30 Aug 2006 *Yuan 1990* (IFP); on living *Salix sp.*, 30 Aug. 2006 *Yuan 1983* (IFP); fallen trunk of *Salix sp.*, 30 Aug. 2006 *Yuan 1979* (IFP).

Junghuhnia subnitida is characterized by resupinate basidiomata, clay pink to cinnamon pore surface, and broadly ellipsoid to subglobose basidiospores. The species resembles *J. nitida* (Pers.:Fr.) Ryvarden by its resupinate basidiomes and its clay pink pore surface. However, *J. subnitida* have hyphal pegs in the hymenium and



Figs. 2–6 Microscopic structures of *Junghuhnia subnitida* (drawn from the holotype). 2. Basidiospores. 3. Basidia and basidioles. 4. Skeletocystidia. 5. Hyphae from tube trama. 6. Hyphae from subiculum.

distinctly broader basidiospores than *J. nitida* (2–2.8 µm vs. 3.1–4 µm in *J. subnitida*).

Junghuhnia lacera (P. Karst.) Niemelä & Kinnunen is similar to *J. subnitida* as well. But it has a pinkish buff pore surface, broader pores (2–5 per mm), and the margin of the basidiomes bears rhizomorphs (Núñez & Ryvar den 2001). Microscopically *J. lacera* has car-

rot-shaped, strongly encrusted cystidia, while they are clavate in *J. subnitida* (Fig. 4).

Rigidoporus vinctus (Berk.) Ryvarden, common in subtropic Asia (Corner 1987), shares some characters like pinkish pores and subglobose basidiospores ($3.9\text{--}4.5\ \mu\text{m} \times 3.1\text{--}3.9\ \mu\text{m}$, Lowe 1966, Ryvarden & Johansen 1980) with *J. subnitida*. *Rigidoporus vinctus* was placed within the genus *Junghuhnia* by Hood & Dick (1988). But, in contrast to *Junghuhnia*, *Rigidoporus vinctus* has a monomitic trama and lacks clamp connections.

Checklist of polypores from northern and central Yunnan Province

In the alphabetical list (according to genera) of poroid wood-rotting fungi the authorities of scientific names follow the second edition of Authors of Fungal Names (<http://www.indexfungorum.org/AuthorsOfFungalNames.htm>). Substrates and collection numbers are given, the host species are listed alphabetically.

1. *Abundisporus quercicola* Y.C. Dai, living *Quercus* sp., Dai 3084
2. *Albatrellus ellisii* (Berk.) Pouzar, ground in mixed forest, Yuan 2208
3. *Albatrellus yasudae* (Lloyd) Pouzar, ground in mixed forest, Yuan 2004
4. *Anomoporia bombycina* (Fr.) Pouzar, fallen trunk of *Abies* sp., Yuan 2029, 2048, 2082; rotten wood of *Picea* sp., Yuan 2064
5. *Antrodia albida* (Fr.: Fr.) Donk, fallen angiosperm branch, Yuan 1222
6. *Antrodia gossypium* (Speg.) Ryvarden, stump of *Pinus* sp., Yuan 2216
7. *Antrodia heteromorpha* (Fr.: Fr.) Donk, fallen trunk of *Abies* sp., Yuan 2087; fallen trunk of *Picea* sp., Yuan 1919, 1945, 1969, 2144; rotten wood of *Pinus* sp., Yuan 1984
8. *Antrodia hingganensis* Y.C. Dai & Penttilä, fallen trunk of *Picea* sp., Yuan 3066
9. *Antrodia malicola* (Berk. & M. A. Curtis) Donk, angiosperm wood, Yuan 2195; dead *Prunus* sp., Dai 8032
10. *Antrodia serialis* (Fr.) Donk, gymnosperm wood, Yuan 2204; fallen decorticated trunk of *Picea* sp., Yuan 1920
11. *Antrodiella brunneimontana* (Corner) T. Hatt., fallen trunk of *Quercus* sp., Dai 3062
12. *Antrodiella zonata* (Berk.) Ryvarden, dead *Lithocarpus* sp., Yuan 2115; fallen trunk of *Quercus* sp., Dai 3086
13. *Bjerkandera adusta* (Willd.: Fr.) P. Karst., stump of *Betula* sp., Yuan 1902, 1925

14. *Bondarzewia montana* (Quél.) Singer, ground in mixed forest, *Yuan* 2187
15. *Ceriporia alachuana* (Murrill) Hallenb., fallen angiosperm trunk, *Yuan* 1253
16. *Ceriporia spissa* (Schwein.: Fr.) Rajchenb., fallen angiosperm branch, *Yuan* 2063, 2066; dead *Trametes versicolor*, *Yuan* 2054
17. *Ceriporia viridans* (Berk. & Broome) Donk, fallen angiosperm trunk, *Yuan* 2058
18. *Ceriporiopsis aneirina* (Sommerf.: Fr.) Domański, living *Salix* sp., *Yuan* 1915
19. *Ceriporiopsis mucida* (Pers.: Fr.) Gilb. & Ryvardeen, stump of *Picea* sp., *Yuan* 1917
20. *Cerrena unicolor* (Bull.: Fr.) Murrill, fallen branch of *Betula* sp., *Yuan* 1987; living *Quercus* sp., *Dai* 3083
21. *Climacocystis borealis* (Fr.) Kotl. & Pouzar, fallen trunk of *Abies* sp., *Yuan* 2043; stump of *Picea* sp., *Yuan* 2180
22. *Coltricia cinnamomea* (Jacq.) Murrill, ground in mixed forest, *Yuan* 2209, 2251
23. *Coltricia perennis* (L.: Fr.) Murrill, ground of mixed forest, *Yuan* 2189, 2231
24. *Coltricia sideroides* (Lév.) Teng, ground in mixed forest, *Yuan* 2226
25. *Cyclomyces xeranticus* (Berk.) Y. C. Dai & Niemelä, angiosperm stump, *Yuan* 2258, 2261, 2277; rotten wood of *Lithocarpus* sp., *Dai* 8025
26. *Daedalea dickinsii* Yasuda, fallen trunk of *Quercus* sp., *Yuan* 2214
27. *Daedaleopsis confragosa* (Bolton: Fr.) J. Schröt., fallen angiosperm branch, *Yuan* 1951; living *Salix* sp., *Yuan* 1941
28. *Daedaleopsis tricolor* (Bull.: Mérat) Bondartsev & Singer, fallen angiosperm trunk, *Yuan* 2153; dead branch of living *Salix* sp., *Yuan* 1913; fallen trunk of *Salix* sp., *Yuan* 1975
29. *Datronia stereoides* (Fr.) Ryvardeen, angiosperm twig, *Yuan* 2268
30. *Diplomitoporus crustulinus* (Bres.) Domański, fallen trunk of *Abies* sp., *Yuan* 1962, 2029; fallen trunk of *Picea* sp., *Dai* 3058
31. *Fistulina hepatica* (Schaeff.: Fr.) With., living *Lithocarpus* sp., *Yuan* 1257, 2282; stump of *Lithocarpus* sp., *Yuan* 1185
32. *Fomes fomentarius* (L.: Fr.) Fr., dead *Betula* sp., *Yuan* 2000
33. *Fomitopsis cajanderi* (P. Karst.) Kotl. & Pouzar, fallen trunk of *Picea* sp., *Yuan* 1965, 1977
34. *Fomitopsis pinicola* (Sw.: Fr.) P. Karst., fallen trunk of *Abies* sp., *Yuan* 2185; fallen trunk of *Picea* sp., *Yuan* 2068, 2093, 2125; stump of *Pinus* sp., *Yuan* 1947

35. *Fomitopsis rosea* (Alb. & Schwein.: Fr.) P. Karst., fallen trunk of *Abies* sp., Yuan 2003, 2044, 2086; fallen trunk of *Picea* sp., Yuan 1986, 2126, 2206
36. *Funalia trogii* (Berk.) Bondartsev & Singer, living *Salix* sp., Yuan 2102
37. *Ganoderma australe* (Fr.) Pat., living angiosperm tree, Yuan 1218a
38. *Ganoderma lipsiense* (Batsch) G.F. Atk., dead angiosperm tree, Yuan 2051, 2095; dead *Lithocarpus* sp., Yuan 2107; stump of *Lithocarpus* sp., Yuan 2140; fallen trunk of *Salix* sp., Yuan 1980
39. *Ganoderma tropicum* (Jungh.) Bres., living angiosperm tree, Yuan 2289
40. *Gloeophyllum abietinum* (Bull.: Fr.) P. Karst., fallen trunk of *Picea* sp., Yuan 1903; fallen trunk of *Pinus* sp., Yuan 1944
41. *Gloeophyllum sepiarium* (Wulfen: Fr.) P. Karst., fallen trunk of *Abies* sp., Yuan 2057; fallen trunk of *Picea* sp., Yuan 1963; fallen decorticated trunk of *Pinus* sp., Yuan 2215
42. *Gloeoporus dichrous* (Fr.: Fr.) Bres., fallen angiosperm branch, Yuan 2259
43. *Gloeoporus taxicola* (Pers.: Fr.) Gilb. & Ryvarden, fallen trunk of *Pinus* sp., Yuan 2210
44. *Haploporus papyracea* (Schwein.) Y. C. Dai & Niemelä, dead angiosperm tree, Yuan 2192; angiosperm stump, Yuan 1250
45. *Heterobasidion insulare* (Murrill) Ryvarden, dead gymnosperm tree, Yuan 2267; stump of *Pinus* sp., Dai 8018, Yuan 2255; root of *Pinus* sp., Yuan 1191, 1204, 1207, 1229
46. *Heterobasidion parviporum* Niemelä & Korhonen, fallen trunk of *Abies* sp., Yuan 2177; fallen trunk of *Picea* sp., Dai 3091, Yuan 2121, 2123, 2165; stump of *Picea* sp., Dai 3073, 3077, Yuan 3055; fallen trunk of *Pinus* sp., Yuan 1937, 1946
47. *Hyphodontia flavipora* (Cooke) Sheng H. Wu, fallen angiosperm branch, Yuan 1186, 1216, 2247; fallen trunk of *Lithocarpus* sp., Dai 8027; stump of *Lithocarpus* sp., Yuan 2099, 2112; stump of *Pinus* sp., Yuan 1939; stump of *Populus* sp., Yuan 2106
48. *Hyphodontia paradoxa* (Schrad.: Fr.) Langer & Vesterh., fallen angiosperm twig, Yuan 2248
49. *Hyphodontia radula* (Pers.) Langer & Vesterh., fallen angiosperm branch, Yuan 1212; rotten angiosperm wood, Yuan 1208
50. *Inonotus radiatus* (Sowerby: Fr.) P. Karst., fallen branch of *Betula* sp., Yuan 1905, 1961, 1973, 1991; stump of *Betula* sp., Yuan 1908
51. *Irpex lacteus* (Fr.: Fr.) Fr., fallen angiosperm trunk, Yuan 2207
52. *Ischnoderma benzoinum* (Wahlenb.: Fr.) P. Karst., fallen trunk of *Abies* sp., Yuan 2205; stump of *Abies* sp., Yuan 2081

53. *Junghuhnia collabens* (Fr.) Ryvarden, fallen trunk of *Abies* sp., Yuan 2160; fallen trunk of *Picea* sp., Yuan 2119, 2122, 2137, 2169, 2178
54. *Junghuhnia subnitida* H. S. Yuan & Y.C. Dai, fallen angiosperm branch, Yuan 1953; fallen branch of *Betula* sp., Yuan 1990; living *Salix* sp., Yuan 1983; fallen branch of *Salix* sp., Yuan 1970; fallen trunk of *Salix* sp., Yuan 1979
55. *Laetiporus sulphureus* (Bull.: Fr.) Murrill *sensu lato*, living *Abies* sp., Yuan 2141; dead *Abies* sp., Yuan 1998; living *Lithocarpus* sp., Yuan 2098, 2103, 2111, 2217; rotten wood of *Lithocarpus* sp., Dai 8029; fallen trunk of *Picea* sp., Yuan 2186
56. *Lenzites betulinus* (L.: Fr.) Fr., stump of *Betula* sp., Yuan 1909, 1916
57. *Leucophellinus irpicoides* (Pilát) Bondartsev & Singer, living *Populus* sp., Yuan 1904
58. *Megasporoporia major* (G. Y. Zheng & Z. S. Bi) Y.C. Dai, fallen angiosperm twig, Yuan 2266; fallen angiosperm trunk, Yuan 1183, 1237
59. *Megasporoporia quercina* Y.C. Dai, fallen trunk of *Quercus* sp., Yuan 2128; stump of *Quercus* sp., Yuan 2202; rotten wood of *Quercus* sp., Dai 3052, 3054
60. *Megasporoporia subcavernulosa* Y. C. Dai & Sheng H. Wu, fallen angiosperm twig, Yuan 1211, 1231; fallen angiosperm branch, Yuan 1187, 1190, 1192, 1209, 1213, 2171, 2281
61. *Microporus vernicipes* (Berk.) Kuntze, fallen angiosperm twig, Yuan 2269
62. *Oligoporus balsameus* (Peck) Gilb. & Ryvarden, fallen trunk of *Picea* sp., Yuan 1978; stump of *Picea* sp., Yuan 1972
63. *Oligoporus sericeomollis* (Romell) Bondartseva, fallen trunk of *Picea* sp., Yuan 2062
64. *Onnia tomentosa* (Fr.) P. Karst., ground in coniferous forest, Yuan 1964
65. *Oxyporus corticola* (Fr.) Ryvarden, fallen trunk of *Picea* sp., Yuan 2146, 2150
66. *Oxyporus obducens* (Pers.:Fr.) Donk, fallen trunk of *Lithocarpus* sp., Dai 8024
67. *Oxyporus populinus* (Schumach.: Fr.) Donk, living *Populus* sp., Yuan 1900, 1935; fallen trunk of *Populus* sp., Yuan 1957; stump of *Populus* sp., Yuan 1936
68. *Perenniporia* cf. *corticola* (Corner) Decock, fallen angiosperm trunk, Yuan 2198
69. *Perenniporia japonica* (Yasuda) T. Hatt. & Ryvarden, root of living angiosperm tree, Yuan 1243; angiosperm stump, Yuan 2264
70. *Perenniporia narymica* (Pilát) Pouzar, stump of *Pinus* sp., Yuan 2276

71. *Perenniporia ochroleuca* (Berk.) Ryvarden *sensu lato*, living angiosperm tree, *Yuan* 2252; fallen angiosperm trunk, *Yuan* 1237a; rotten angiosperm wood, *Yuan* 2291
72. *Perenniporia piceicola* Y. C. Dai, fallen trunk of *Picea* sp., *Dai* 3089, *Yuan* 2120, 2155
73. *Perenniporia subacida* (Peck) Donk *sensu lato*, dead *Picea* sp., *Yuan* 2006; fallen trunk of *Picea* sp., *Yuan* 2009, 2013, 2031; fallen trunk of *Pinus* sp., *Yuan* 1218
74. *Perenniporia tenuis* (Schw.) Ryvarden, rotten wood of *Lithocarpus* sp., *Dai* 8019, 8028
75. *Phaeolus schweinitzii* (Fr.: Fr.) Pat., fallen trunk of *Abies* sp., *Yuan* 2127; living *Picea* sp., *Yuan* 2182; living *Pinus* sp., *Yuan* 1949
76. *Phellinus conchatus* (Pers.: Fr.) Quél., living angiosperm tree, *Yuan* 1924; angiosperm stump, *Yuan* 1930; fallen trunk of *Quercus* sp., *Dai* 3063; living *Salix* sp., *Dai* 3064, 3065, *Yuan* 1912; stump of *Salix* sp., *Yuan* 1914
77. *Phellinus contiguus* (Pers.: Fr.) Pat., fallen angiosperm trunk, *Yuan* 2221
78. *Phellinus ferreus* (Pers.) Bourdot & Galzin, fallen angiosperm trunk, *Yuan* 1200
79. *Phellinus gilvus* (Schwein.: Fr.) Pat., fallen angiosperm twig, *Yuan* 2290
80. *Phellinus hartigii* (Allesch. & Schnabl) Pat., stump of *Abies* sp., *Yuan* 1943
81. *Phellinus himalayensis* Y.C. Dai, living *Abies* sp., *Yuan* 2045; root of living *Abies* sp., *Yuan* 2008; fallen trunk of *Abies* sp., *Yuan* 1967, 2040; living *Picea* sp., *Yuan* 1985, 2176; fallen trunk of *Picea* sp., *Dai* 3090, 3092, 3093, *Yuan* 2011, 2183
82. *Phellinus igniarius* (L.: Fr.) Quél. *sensu lato*, fallen angiosperm trunk, *Yuan* 1959; angiosperm stump, *Yuan* 2124; stump of *Betula* sp., *Yuan* 1938; dead *Salix* sp., *Yuan* 1989
83. *Phellinus laevigatus* (Fr.) Bourdot & Galzin, fallen trunk of *Betula* sp., *Dai* 3076
84. *Phellinus lundellii* Niemelä, fallen trunk of *Betula* sp., *Dai* 3075; living *Betula* sp., *Yuan* 1981; stump of *Betula* sp., *Yuan* 1997
85. *Phellinus macgregorii* (Bres.) Ryvarden, fallen angiosperm trunk, *Yuan* 1960, 2173; living *Acer* sp., *Dai* 3069; dead *Lonicera* sp., *Yuan* 1993, 2021; fallen branch of *Lonicera* sp., *Yuan* 2023; stump of *Lonicera* sp., *Yuan* 1976; rotten wood of *Quercus* sp., *Dai* 3087
86. *Phellinus nigrolimitatus* (Romell) Bourdot & Galzin, fallen trunk of *Abies* sp., *Yuan* 2001, 2033

87. *Phellinus pini* (Brot.: Fr.) A. Ames, living *Pinus* sp., *Dai* 3070, 3072; root of *Pinus* sp., *Yuan* 2234
88. *Phellinus rimosus* (Berk.) Pilát, fallen angiosperm trunk, *Dai* 8033
89. *Phellinus senex* (Nees & Mont.) Imazeki, rotten stump of *Lithocarpus* sp., *Dai* 8021
90. *Phellinus sulphurascens* Pilát, fallen trunk of *Abies* sp., *Yuan* 2034, 2038, 2041; fallen trunk of *Picea* sp., *Yuan* 1992
91. *Phellinus torulosus* (Pers.) Bourdot & Galzin, angiosperm stump, *Yuan* 1229a; dead *Lithocarpus* sp., *Yuan* 2109, *Yuan* 2110; root of living *Lithocarpus* sp., *Yuan* 2100, 2105
92. *Phellinus tremulae* (Bondartsev) Bondartsev & Borisov, dead angiosperm tree, *Yuan* 2179; stump of *Populus* sp., *Yuan* 1948
93. *Phellinus wahlbergii* (Fr.) A.D. Reid, root of living angiosperm tree, *Yuan* 1246
94. *Physisporinus rivulosus* (Berk. & M. A. Curtis) Ryvardeen, dead angiosperm tree, *Yuan* 2222
95. *Piptoporus betulinus* (Bull.: Fr.) P. Karst., living *Betula* sp., *Yuan* 2046; dead *Betula* sp., *Yuan* 1974
96. *Polyporus arcularius* Batsch:Fr., fallen angiosperm trunk, *Yuan* 2073; gymnosperm wood, *Dai* 3088; fallen trunk of *Picea* sp., *Yuan* 3059; fallen branch of *Salix* sp., *Yuan* 1971
97. *Polyporus badius* (Pers.: Gray) Schwein., dead angiosperm tree, *Yuan* 2151; fallen angiosperm trunk, *Yuan* 2076, 2194; fallen branch of *Salix* sp., *Yuan* 1994
98. *Polyporus brumalis* Pers.:Fr., fallen trunk of *Betula* sp., *Dai* 3080
99. *Polyporus dictyopus* Mont., fallen angiosperm branch, *Yuan* 1205
100. *Polyporus melanopus* (Pers.: Fr.) Fr., dead angiosperm tree, *Yuan* 2287
101. *Polyporus mikawai* Lloyd, fallen angiosperm twig, *Yuan* 2257, 2262
102. *Polyporus mongolicus* (Pilát) Y. C. Dai, fallen branch of *Betula* sp., *Yuan* 2067
103. *Polyporus mori* (Pollini: Fr.) Fr., fallen angiosperm branch, *Yuan* 2279; fallen twig of *Picea* sp., *Yuan* 1901
104. *Polyporus tubaeformis* (P. Karst.) Ryvardeen & Gilb., fallen trunk of *Abies* sp., *Yuan* 2139; fallen branch of *Picea* sp., *Yuan* 1982, 2203
105. *Polyporus varius* Pers.:Fr., fallen angiosperm twig, *Yuan* 1184, 1242; fallen angiosperm branch, *Yuan* 1196, 1235; dead *Salix* sp., *Dai* 3068
106. *Postia alni* Niemelä & Vampola, fallen angiosperm branch, *Yuan* 2022, 2147, 2158, 2190, 2227

107. *Postia caesia* (Schrad.: Fr.) P. Karst., fallen trunk of *Abies* sp., Yuan 2162; fallen trunk of *Picea* sp., Yuan 2002, 2077, 2156, 2174, 2181; fallen trunk of *Pinus* sp., Yuan 1911; stump of *Pinus* sp., Yuan 1233
108. *Postia fragilis* (Fr.: Fr.) Jülich, stump of *Abies* sp., Yuan 2091; stump of *Picea* sp., Dai 3081, Yuan 2175
109. *Postia hibernica* (Berk. & Broome) Jülich, fallen gymnosperm branch, Yuan 2200
110. *Postia leucomallella* (Murrill) Jülich, fallen trunk of *Abies* sp., Yuan 2047
111. *Postia tephroleuca* (Fr.) Jülich, fallen trunk of *Abies* sp., Yuan 2072; fallen angiosperm trunk, Yuan 2196
112. *Pycnoporus cinnabarius* (Jacq.: Fr.) P. Karst., fallen trunk of *Betula* sp., Dai 3079
113. *Sistotrema musicola* (Pers.) S. Lundell, rotten wood of *Picea* sp., Yuan 2197
114. *Skeletocutis alutacea* (J. Lowe) Jean Keller, angiosperm stump, Yuan 1249
115. *Skeletocutis biguttulata* (Romell) Niemelä, fallen gymnosperm twig, Yuan 2236; fallen twig of *Pinus* sp., Yuan 2232, 2241
116. *Skeletocutis nivea* (Jungh.) Jean Keller, fallen angiosperm trunk, Yuan 2149
117. *Skeletocutis vulgaris* (Fr.) Niemelä & Y. C. Dai, rotten wood of *Abies* sp., Yuan 2191; fallen branch of *Pinus* sp., Yuan 1236, 1240, 1257; rotten wood of *Pinus* sp., Dai 8030
118. *Stromatoscypha fimbriata* (Pers.: Fr.) Donk, fallen trunk of *Abies* sp., Yuan 2005, 2012, 2024, 2035, 2078; fallen trunk of *Picea* sp., Yuan 2010, 2017, 2020
119. *Trametes ochracea* (Pers.) Gilb. & Ryvarden, fallen angiosperm trunk, Yuan 1929
120. *Trametes pubescens* (Schumach.: Fr.) Pilát, fallen twig of *Betula* sp., Yuan 2070
121. *Trametes versicolor* (L.: Fr.) Pilát, fallen trunk of *Abies* sp., Yuan 2079; fallen angiosperm branch, Yuan 1221, 1227, 1968; angiosperm stump, Yuan 1942; dead branch of *Rhododendron* sp., Yuan 1999
122. *Trechispora hymenocystis* (Berk. & Broome) K-H. Larsson, fallen trunk of *Abies* sp., Yuan 2014, 2027, 2089; fallen trunk of *Picea* sp., Yuan 2019
123. *Trichaptum abietinum* (Pers.: Fr.) Ryvarden, fallen trunk of *Abies* sp., Yuan 2052; fallen branch of *Pinus* sp., Yuan 2218; fallen trunk of *Pinus* sp., Yuan 1234
124. *Trichaptum fuscoviolaceum* (Ehrenb.: Fr.) Ryvarden, fallen trunk of *Picea* sp., Yuan 2145; stump of *Pinus* sp., Yuan 1940

125. *Trichaptum pargamenum* (Fr.) G. Cunn., fallen trunk of *Betula* sp., Yuan 1955, 1988
126. *Tyromyces chioneus* (Fr.) P. Karst., rotten wood of *Quercus* sp., Dai 3053

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