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. J*unghuhnia 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 subglobosae, 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.

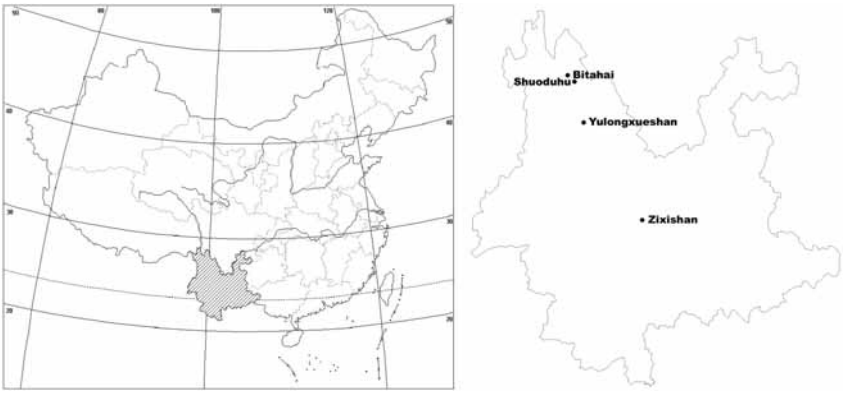


Fig. 1. Investigated areas (black dots) in the Yunnan Province (shaded area) in China.

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 × 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 × 5–6 µm; basidioles in shape similar to basidia, but smaller.

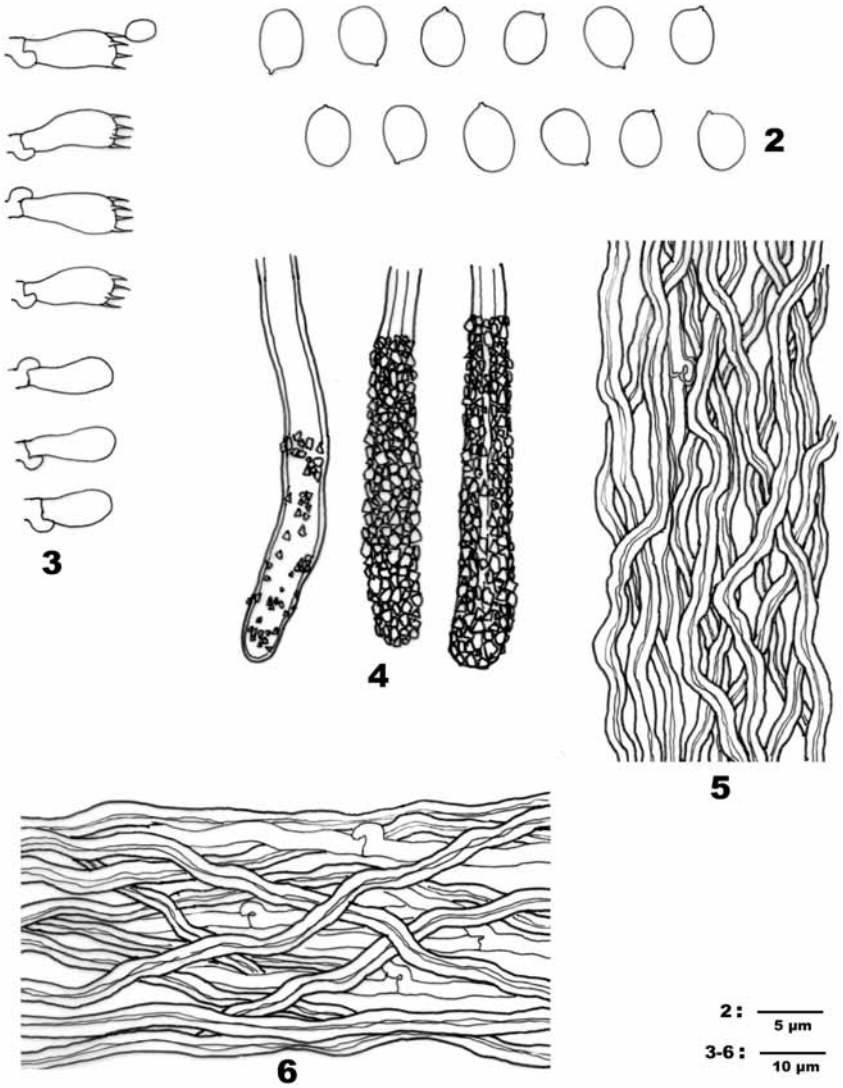
Basidiospores broadly ellipsoid to subglobose, hyaline, thin-walled, smooth, IKI–, CB–, (4.3–)4.4–5(–5.2) µm × (3.1–)3.3–4(–4.1) µm, L = 4.64 µm, W = 3.62 µm, Q = 1.27–1.29 (n = 61/2).

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 & Ryvarden 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 (3.9–4.5 µm × 3.1–3.9 µm, 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. & Ryvarden, 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.) Ryvarden, 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) Ryvarden, 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; g*ymnosperm 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.) Ryvarden & 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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