Wood-rotting fungi in eastern China 1. Polypores from Wuyi Mountains, Fujian Province

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Field inventories on wood-rotting fungi from Wuyi Mountains, Fujian Province of eastern China provided 504 specimens representing 155 species of polypores, a list of which is given below with their respective hosts. *Hapalopilus flavus* is described as new and detailed description is provided.

Key words: *Hapalopilus flavus*, lignicolous and poroid fungi, taxonomy

Wood-rotting fungi are an important component of forest ecosystems, decomposing not only coarse woody materials, but they also are critical for maintaining diversity of those ecosystems (Cui *et al*. 2006). Poroid and corticioid aphyllophoroid fungi share a similar ecology in forest ecosystems (Dai *et al*. 2004). In eastern China, some mycological books including wood-rotting fungi have been published (Teng 1963, Tai 1979, Zhao 1989, Zhao & Zhang 1992). However, the knowledge of wood-rotting fungi in eastern China is highly fragmented, and many of the names in previous reports are synonyms. Hattori & Zang (1995) reported 52 species of polypores from several mountains in eastern China, since then a few more species of lignicolous and poroid fungi were reported or described from eastern China in the last 10 years (Dai 1999, Núñez & Ryvarden 2000, 2001, Dai & Cui 2005, Cui & Dai 2006, Cui *et al*. 2006, Wei & Dai 2006, Cui & Dai 2007, Cui *et al*. 2007).

This paper is one of a series of studies dealing with wood-rotting fungi in eastern China. Wuyi Mountains, with an area of 570 square kilometers at an altitude of 350 to 2158 meters a.s.l. are situated in Fujian Province, eastern China (27°32'–27°55' N, 117°24'–118°02' E). The vegetation belongs to the warm temperate to subtropical zone and, the main type is the broadleaf evergreen forest (forest coverage:

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95.3 %). This region is the largest and most perfectly preserved subtropical forest in southeast China. In this area 2, 466 higher and 840 lower plant species, and 475 vertebrate species are reported. The area was established as a national nature reserve in 1979, and it was declared as an International Biosphere Reserve (Man and Biosphere) by UNESCO in 1987. The dominant angiosperm trees are members of Fagaceae, Lauraceae, Theaceae, Magnoliaceae, Hamamelidaceae and Elaeocarpaceae, while the main gymnosperm trees are *Pinus massoniana* and *Tsuga chinensis*.

The knowledge of polypores from Wuyi Mountains is poorly known. Around 30 polypore species were recorded in Wuyi Mountains from previous reports (Tai 1979, Teng 1996, Zhao 1998, Núñez & Ryvarden 2000, Zhao & Zhang 2000, Núñez & Ryvarden 2001, Dai & Cui 2005).

Field trips were made to Wuyi Mountains during October of 2005 and August of 2006, and 504 specimens of wood-rotting fungi were collected; out of them 155 polypores were identified. A list of these species with their respective hosts is given below.

Materials and methods

The specimens collected by the authors were deposited at the herbarium of the Institute of Applied Ecology, Chinese Academy of Sciences (IFP) and the Herbarium of Beijing Forestry University (BJFC). All the materials were examined applying light microscopy (Nikon Eclipse E600) according to Dai and Niemelä (1997). The following abbreviations are used in the text below: L = mean spore length (arithmetical mean of all spores), W = mean spore width (arithmetical mean of all spores), Q = variation in the L/W ratios between the specimens studied (quotient of the mean spore length and mean spore width of each specimen), n = number of spores measured from given number of specimens. IKI = Melzer's reagent, IKI– = both inamyloid and indextrinoid, KOH = 5% potassium hydroxide, and CB = Cotton Blue. CB+ = cyanophilous and CB– = acyanophilous. The upper and lower 5% of the measurements were considered as extreme values and are given in parentheses. The width of a basidium was measured at the thickest part, and the length was measured from the apex (sterigmata excluded) to the basal septum. Sections were studied at magnification up to ×1000 by using a Nikon Eclipse E600 microscope and phase contrast illumination. Drawings were made with the aid of a drawing tube. Special colour terms are according to Petersen (1996) and Anonymous (1969).

Taxonomy

Hapalopilus flavus **B.K. Cui & Y.C. Dai**, sp. nov. (Fig. 1)
(Mycobank number: MB 511855)

Carpophorum annuum, resupinatum. Facies pororum cremea bubalina; pori rotundi vel angulati, 2–4 per mm. Systema hypharum monomiticum, hyphae generatoriae fibulatae, hyphae contexti 2.6–5.2 μm in diam. Sporae hyalinae, oblongae vel ellipsoideae, IKI–, CB–, 3.5–4.6 μm × 2.3–3 μm.

Holotypus. – **China**. Fujian Prov., Wuyishan County, Wuyishan Nature Reserve, on rotten angiosperm wood, 17.X.2005 *Cui 2920* (holotype in IFP, isotype in BJFC & H).

Etymology. – *Flavus* (Lat.): referring to the colour of pore surface when dry.

Description – Basidiomata annual, resupinate, inseparable from the substrate, soft corky, without odour or taste when fresh, becoming brittle to corky upon drying, vivid purple red when contact with KOH, ca. 13 cm or more in longest dimension, 5 cm or more in widest dimension. Sterile margin distinct, white to cream, up to 2 mm wide. Pore surface cream buff when fresh, becoming lemon chrome to buff-yellow upon drying; pores round to angular, 2–4 per mm; dissepiments thin, entire to slightly lacerate. Subiculum cream to buff, corky, thin, less than 1 mm thick. Tube layer concolorous with pore surface, cream buff when fresh, becoming buff-yellow to lemon chrome upon drying, brittle to woody corky, up to 5 mm long. Hyphal system monomitic; generative hyphae bearing clamp connections, IKI–, CB–; tissue becoming purple red in KOH. Subicular hyphae hyaline, mostly slightly thick-walled with a distinct lumen, some thin-walled, frequently septate with clamp connections, frequently branched, interwoven, 2.6–5.2 μm in diam.

Tubes. – Tramal hyphae hyaline, thin- to slightly thick-walled, frequently septate with clamp connections, frequently branched, interwoven in trama, more or less parallel towards dissepiment edges, 2–4.6 μm in diam; swollen capitate hyphal ends usually present at dissepiment edges, smooth, thin- to slightly thick-walled, up to 8.9 μm in diam. Cystidia absent; cystidioles present, clavate to fusoid, thin-walled, smooth, 13.4 μm – 19.3 × 3.5–5.8 μm; basidia clavate, with four sterigmata and a basal clamp connection, 12.8–18.7 μm × 4.2–6 μm; basidioles in shape similar to basidia, but slightly smaller.

Basidiospores oblong to ellipsoid, hyaline, thin-walled, smooth, IKI–, CB–, (3.2–)3.5–4.6(–4.9) μm × (2.1–)2.3–3 μm, L = 3.99 μm, W = 2.64 μm, Q = 1.43–1.67 (n = 90/3).

Type of rot. – White rot.

Additional specimens (paratypes) examined. – **China**. Fujian Prov., Wuyishan County, Wuyishan Nature Reserve, on angiosperm stump, 17.X.2005 *Cui 2921* (IFP, BJFC); on fallen angiosperm trunk, 19.X.2005 *Dai 7220* (IFP, BJFC).

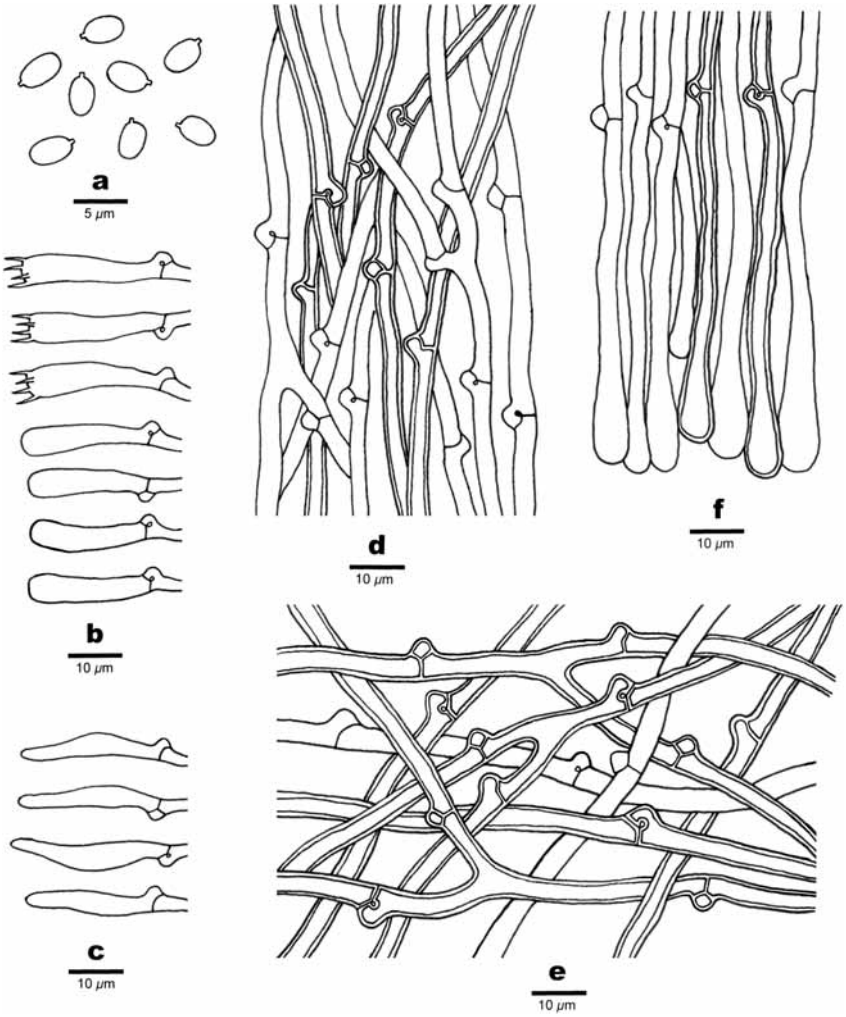

Fig. 1. Microscopic structures of *Hapalopilus flavus* B.K. Cui & Y.C. Dai (drawn from the holotype). a: Basidiospores. b: Basidia and basidioles. c: Cystidioles. d: Hyphae from trama. e: Hyphae from subiculum. f: Swollen, capitate hyphal ends from dissepiment edges.

Hapalopilus flavus is characterized by cream buff pore surface when fresh, lemon-chrome to buff-yellow upon drying, a monomitic hyphal structure with clamp connections, swollen capitate hyphal ends at dissepiment edges, oblong to ellipsoid basidiospores, and by becoming vivid purple red when contact with KOH.

The new species is morphologically similar to species of *Ceriporiopsis* Domański, by its annual habit, resupinate and light-coloured basidiomata, a monomitic hyphal system bearing clamp

connections on generative hyphae, and causing white rot (Domański 1963). However, the tissue of *Ceriporiopsis* species remains unchanged in KOH.

Hapalopilus flavus is very similar to *H. salmonicolor* by sharing resupinate basidiomata and oblong to ellipsoid basidiospores (3.5–5.5 μm × 2–2.5 μm, Núñez & Ryvarden 2001). In contrast to the new *H. flavus*, *H. salmonicolor* has a salmon pink to orange brown pore surface when fresh, an oily substance between hyphae and hymenial cells can frequently be observed, and the fungus usually growths on gymnosperm trees (Gilbertson & Ryvarden 1986, Núñez & Ryvarden 2001, Ryvarden & Gilbertson 1993).

Hapalopilus rubescens Comer is a resupinate species described from the South-East of Asia (Corner 1989). It can be distinguished from our new species by narrower pores (5–7 per mm, Hattori 2003) and smaller basidiospores (3.2–4 μm × 2–2.5 μm, Corner 1989), and it has sordid-orange to brown pore surface. *Hapalopilus phlebiiformis* (Berk. ex Cooke) Ryvarden is an another species having resupinate basidiocarps and ellipsoid basidiospores, but it differs from *Hapalopilus flavus* by having pinkish brown to dark orange pore surface and narrower pores (5–6 per mm, Lowe 1966).

A phylogenetic study carried out by Ko *et al.* (2001) revealed that the genus *Hapalopilus* can be divided into two major clades: *Hapalopilus nidulans* (Fr.) P. Karst., *H. mutans* (Peck) Gilb. & Ryvarden, *H. albocitrinus* (Petch) Ryvarden and *H. croceus* (Pers.) Donk form one clade, while *H. salmonicolor* is separated from this core group. Recently, Niemelä et al. (2005) established the new genus *Erastia* Niemelä & Kinnunen with *Erastia salmonicolor* (synonym: *Hapalopilus salmonicolor)* as type species. As the phylogenetic relationship between *Hapalopilus flavus* and other similar species is unknown, we understand the genus *Hapalopilus* in a wider sense (including *Erastia*) within this paper.

Checklist

In the following the genera are listed alphabetically while the authors of scientific names are according to the second edition of Authors of Fungal Names (http://www.indexfungorum.org/AuthorsOfFungalNames.htm). Substrate and collecting data are given after the name of each species. The hosts are listed alphabetically, and in the case of the same host tree, they were arranged by order: living tree, dead tree, fallen branch, fallen trunk, fallen twig, rotten wood, stump, and root. The concept of polypores circumscribed here is in a wide sense, including the Polyporaceae, Ganodermataceae, and poroid species in the Hymenochaetaceae, Corticiaceae and Tremellaceae.

1. *Abundisporus pubertatis* (Lloyd) Parmasto, living angiosperm tree, *Cui 4183*
2. *Anomoporia myceliosa* (Peck) Pouzar, fallen angiosperm trunk, *Dai 7367*; rotten angiosperm wood, *Cui 2919*, *Dai 7402*; angiosperm stump, *Cui 2942*; rotten angiosperm stump, *Dai 7212*
3. *Antrodia albida* (Fr.:Fr.) Donk, fallen angiosperm trunk, *Dai 7422*
4. *Antrodia hingganensis* Y.C. Dai & Penttilä, fallen angiosperm branch, *Cui 3252*; fallen angiosperm trunk, *Cui 2870*; fallen trunk of *Pinus sp.*, *Dai 7275* & *7284*
5. *Antrodia malicola* (Berk. & M.A. Curtis) Donk, fallen angiosperm trunk, *Cui 2876*; fallen trunk of *Cyclobalanopsis sp., Dai 7408*
6. *Antrodia wangii* Y.C. Dai & H.S.Yuan, living angiosperm tree, *Cui 4196*
7. *Antrodia xantha* (Fr.:Fr.) Ryvarden, rotten wood of *Pinus sp.*, *Cui 2905*
8. *Antrodiella albocinnamomea* Y.C. Dai & Niemelä, dead angiosperm tree, *Cui 2966*; fallen angiosperm trunk, *Cui 3322*, *Dai 7331*; rotten angiosperm wood, *Cui 3333*, *Dai 7292*; angiosperm stump, *Cui 3239*
9. *Antrodiella americana* Ryvarden & Gilb., fallen angiosperm trunk, *Dai 7368*
10. *Antrodiella brunneimontana* (Corner) T. Hatt., fallen angiosperm trunk, *Dai 7417*
11. *Antrodiella duracina* (Pat.) I. Lindblad & Ryvarden, fallen angiosperm trunk, *Cui 4151 & 4172*; angiosperm stump, *Cui 2847*, *2917 & 4132*; rotten angiosperm stump, *Dai 7240*; fallen trunk of *Pinus sp.*, *Cui 2851*, *2853*, *2866 & 2898*
12. *Antrodiella gypsea* (Yasuda) T. Hatt. & Ryvarden, rotten angiosperm wood, *Dai 7285*
13. *Antrodiella* cf. *micra* Y.C. Dai, fallen angiosperm trunk, *Cui 4165*
14. *Antrodiella semisupina* (Berk. & M.A. Curtis) Ryvarden *sensu lato,* fallen angiosperm branch, *Dai 7353*
15. *Antrodiella zonata* (Berk.) Ryvarden, living angiosperm tree, *Cui 2859*; fallen angiosperm branch, *Dai 7288*; fallen angiosperm trunk, *Cui 2852 & 2862, Dai 7359, 7375 & 7380*; angiosperm stump, *Cui 2856 & 2900*
16. *Bjerkandera adusta* (Willd.:Fr.) P. Karst., dead angiosperm tree, *Cui 2903*; fallen angiosperm trunk, *Cui 2869 & 4087*
17. *Castanoporus castaneus* (Lloyd) Ryvarden, fallen branch of *Pinus sp.*, *Dai 7184 & 7397*
18. *Ceriporia camaresiana* (Bourdot & Galzin) Bondartsev & Singer, angiosperm stump, *Cui 3238*

19. *Ceriporia purpurea* (Fr.) Donk, fallen angiosperm trunk, *Cui 2922*; rotten angiosperm wood, *Cui 2928*
20. *Ceriporia* cf. *spissa* (Schwein.:Fr.) Rajchenb., rotten angiosperm wood, *Cui 2899*
21. *Ceriporia viridans* (Berk. & Broome) Donk, fallen angiosperm trunk, *Cui 3309 & 4182*; rotten angiosperm wood, *Dai 7343*
22. *Ceriporiopsis mucida* (Pers.:Fr.) Gilb. & Ryvarden, rotten wood of *Tsuga sp., Dai 7327*
23. *Ceriporiopsis* cf. *resinascens* (Romell) Domański, fallen angiosperm trunk, *Cui 4136*
24. *Cerrena unicolor* (Bull.:Fr.) Murrill, angiosperm stump, *Dai 7400*
25. *Coltricia tsugicola* Y.C. Dai & B.K. Cui, base of living tree of *Tsuga sp., Dai 7336*; rotten wood of *Tsuga sp., Dai 7303*
26. *Coriolopsis* cf. *polyzona* (Pers.) Ryvarden, fallen angiosperm trunk, *Dai 7376*; angiosperm stump, *Cui 2833*
27. *Coriolopsis sanguinaria* (Klotzsch) Teng, angiosperm stump, *Cui 4088*
28. *Cryptoporus volvatus* (Peck) Shear, living tree of *Pinus sp., Cui 4101*; fallen trunk of *Pinus sp., Dai 7281*
29. *Cyclomyces lamellatus* Y.C. Dai & Niemelä, dead angiosperm tree, *Dai 7424;* fallen angiosperm branch, *Cui 3285, Dai 7302;* fallen angiosperm trunk, *Cui 3271*
30. *Cyclomyces tabacinus* (Mont.) Pat., rotten angiosperm wood, *Cui 2897, Dai 7242;* angiosperm stump, *Cui 4149*, *Dai 7256 & 7260*
31. *Cyclomyces xeranticus* (Berk.) Y.C. Dai & Niemelä, rotten angiosperm wood, *Cui 2910 & 2964, Dai 7338;* angiosperm stump, *Cui 2914;* fallen trunk of *Castanopsis sp., Dai 7315 & 7334*
32. *Daedaleopsis confragosa* (Bolton:Fr.) J. Schröt., fallen angiosperm trunk, *Cui 3340*
33. *Daedaleopsis tricolor* (Bull.:Mérat) Bondartsev & Singer, fallen angiosperm branch, *Cui 2863 & 2883, Dai 7356;* fallen angiosperm trunk, *Dai 7264*
34. *Datronia mollis* (Sommerf.) Donk, fallen angiosperm trunk, *Cui 3319 & 3335*
35. *Datronia scutellata* (Schwein.) Gilb. & Ryvarden, fallen angiosperm twig, *Dai 7186*
36. *Datronia stereoides* (Fr.) Ryvarden, fallen angiosperm trunk, *Cui 3307, 4105 & 4131, Dai 7374*
37. *Dichomitus squalens* (P. Karst.) D.A. Reid, fallen trunk of *Pinus sp., Dai 7276*
38. *Fomes fomentarius* (L.:Fr.) Fr., dead angiosperm tree, *Dai 7257*

39. *Fomitiporia bannaensis* Y.C. Dai, fallen trunk of *Liquidambar sp., Dai 7211*
40. *Fomitiporia punctata* (P. Karst.) Murrill, living angiosperm tree, *Cui 2973, Dai 7261*; living tree of *Celtis sp., Cui 4189;* dead angiosperm tree, *Dai 7204;* fallen angiosperm trunk, *Cui 2936 & 4167, Dai 7232 & 7377;* angiosperm stump, *Cui 2871*
41. *Fomitiporia pusilla* (Lloyd) Y.C. Dai, root of living angiosperm tree, *Cui 2873*
42. *Fomitiporia robusta* (P. Karst.) Fiasson & Niemelä, dead angiosperm tree, *Cui 2850;* living tree of *Cyclobalanopsis sp., Dai 7434*
43. *Fomitiporia torreyae* Y.C. Dai & B.K. Cui, living tree of *Torreya sp., Dai 7320*
44. *Fomitopsis feei* (Fr.) Kreisel, fallen angiosperm trunk, *Dai 7253;* rotten angiosperm wood, *Dai 7398*
45. *Fomitopsis pinicola* (Sw.:Fr.) P. Karst., fallen trunk of *Pinus sp., Cui 2848, Dai 7183*
46. *Fomitopsis rosea* (Alb. & Schwein.:Fr.) P. Karst., dead tree of *Cunninghamia sp., Cui 3261;* rotten gymnosperm wood, *Cui 3258;* fallen trunk of *Pinus sp., Dai 7388*
47. *Funalia cervina* (Schwein.:Fr.) Y.C. Dai, fallen angiosperm branch, *Cui 2884*; fallen angiosperm trunk, *Cui 4173*
48. *Ganoderma australe* (Fr.) Pat., living angiosperm tree, *Cui 2839;* living tree of *Lagerstroemia sp., Cui 4193;* dead angiosperm tree, *Dai 7259;* angiosperm stump, *Cui 4115*
49. *Gloeophyllum sepiarium* (Wulfen:Fr.) P. Karst., fallen trunk of *Pinus sp., Cui 4103, Dai 7290*
50. *Gloeoporus dichrous* (Fr.:Fr.) Bres., fallen angiosperm trunk, *Cui 4192;* fallen branch of *Pinus sp., Cui 4117 & 4164*
51. *Grammothele fulgio* (Berk. & Broome) Ryvarden, stump of bamboo, *Cui 4178 & 4179*
52. *Hapalopilus salmonicolor* (Berk. & M.A. Curtis) Pouzar, rotten wood of *Pinus sp., Dai 7217;* stump of *Pinus sp., Cui 2927*
53. *Hapalopilus flavus* B.K. Cui & Y.C. Dai, fallen angiosperm trunk, *Cui 3316, Dai 7220;* rotten angiosperm wood, *Cui 2920;* angiosperm stump, *Cui 2921;* rotten angiosperm stump, *Dai 7210*
54. *Haploporus alabamae* (Berk. & M.A. Curtis) Y.C. Dai & Niemelä, fallen angiosperm twig, *Cui 2887 & 3243, Dai 7194a*
55. *Haploporus papyracea* (Schwein.) Y.C. Dai & Niemelä, dead angiosperm tree, *Cui 4100;* fallen angiosperm twig, *Cui 2930*
56. *Heterobasidion insulare* (Murrill) Ryvarden, stump of *Pinus sp., Cui 2924, 2943, 2976 & 4133, Dai 7233, 7243, 7244, 7245 & 7246;* living tree of *Tsuga sp., Dai 7298 & 7324;* fallen trunk of *Tsuga*

sp., Dai 7306; rotten wood of *Tsuga sp., Dai 7347;* stump of *Tsuga sp., Dai 7296, 7352, 7364 & 7365*

57. *Hyphodontia flavipora* (Cooke) Sheng H. Wu, living angiosperm tree, *Cui 4099;* fallen angiosperm branch, *Cui 2901 & Dai 7351;* fallen angiosperm trunk, *Cui 2844, 4090 & Dai 7321;* rotten angiosperm wood, *Dai 7426;* angiosperm stump, *Cui 4168*
58. *Hyphodontia paradoxa* (Schrad.:Fr.) Langer & Vesterh., fallen angiosperm branch, *Dai 7355*
59. *Hyphodontia radula* (Pers.) Langer & Vesterh.,fallen angiosperm branch, *Cui 2891*
60. *Hyphodontia tropica* Sheng H. Wu, dead angiosperm tree, *Cui 2906;* fallen angiosperm branch, *Cui 2909*
61. *Irpex lacteus* (Fr.:Fr.) Fr. *sensu lato*, fallen angiosperm branch, *Cui 2908 & 2958;* fallen angiosperm trunk, *Dai 7389*
62. *Ischnoderma benzoinum* (Wahlenb.:Fr.) P. Karst., stump of *Tsuga sp., Dai 7328*
63. *Junghuhnia collabens* (Fr.) Ryvarden, rotten angiosperm wood, *Cui 3294;* rotten wood of *Tsuga sp., Dai 7319*
64. *Junghuhnia japonica* Núñez & Ryvarden, rotten angiosperm wood, *Cui 3318, Dai 7346*
65. *Junghuhnia luteoalba* (P. Karst.) Ryvarden, fallen angiosperm branch, *Dai 7250;* fallen angiosperm trunk, *Dai 7274*
66. *Junghuhnia nitida* (Pers.:Fr.) Ryvarden, living angiosperm tree, *Cui 4144;* fallen angiosperm branch, *Cui 2967;* fallen decorticated angiosperm trunk, *Cui 4137, Dai 7263;* angiosperm stump, *Cui 2974, 3304, 4128 & 4143*
67. *Laetiporus sulphureus* (Bull.:Fr.) Murrill, fallen angiosperm trunk, *Cui 3306;* fallen trunk of *Pinus sp.*, *Dai 7265*
68. *Laetiporus versisporus* (Lloyd) Imazeki, living angiosperm tree, *Dai 7268*
69. *Lenzites betulinus* (L.:Fr.) Fr., fallen angiosperm branch, *Dai 7293 & 7357;* fallen angiosperm trunk, *Cui 4113, Dai 7430*
70. *Lenzites vespacea* (Pers.) Pat., angiosperm stump, *Dai 7280*
71. *Megasporoporia subcavernulosa* Y.C. Dai & Sheng H. Wu, fallen angiosperm branch, *Cui 2896, Dai 7304, 7360 & 7390;* angiosperm root, *Dai 7312*
72. *Microporus affinis* (Blume & Nees) O.Kuntze, fallen angiosperm trunk, *Cui 2845, 2855 & 2913;* angiosperm stump, *Cui 2888 & 4091*
73. *Microporus* cf. *subaffinis* (Lloyd) Imazeki, fallen angiosperm trunk, *Cui 3268*
74. *Microporus vernicipes* (Berk.) Kuntze, fallen angiosperm trunk, *Dai 7252*
75. *Microporus xanthopus* (F.) Pat., fallen angiosperm trunk, *Cui 3257*

76. *Oxyporus cuneatus* (Murrill) Aoshima, fallen branch of *Cryptomeria sp., Dai 7342;* fallen trunk of *Cryptomeria sp., Dai 7339*; root of living *Pinus sp., Cui 4104 & 4116*
77. *Oxyporus obducens* (Pers.:Fr.) Donk, fallen angiosperm trunk, *Cui 3337*
78. *Oxyporus populinus* (Schumach.:Fr.) Donk, fallen angiosperm trunk, *Dai 7329;* living tree of *Cyclobalanopsis sp., Dai 7391*
79. *Oxyporus subulatus* Ryvarden, angiosperm stump, *Cui 2931*
80. *Perenniporia* cf. *corticola* (Corner) C. Decock, rotten angiosperm wood, *Cui3240;* rotten wood of *Pinus sp., Dai 7330*
81. *Perenniporia* cf. *fraxinea* (Bull.:Fr) Ryvarden, living tree of *Cyclobalanopsis sp., Dai 7410*
82. *Perenniporia medulla-panis* (Jacq.:Fr.) Donk, fallen angiosperm trunk, *Cui 4157;* rotten angiosperm wood, *Dai 7332;* angiosperm stump, *Cui 3274*
83. *Perenniporia narymica* (Pilát) Pouzar, fallen trunk of *Pinus sp., Dai 7262*
84. *Perenniporia ochroleuca* (Berk.) Ryvarden, dead angiosperm tree, *Cui 4120;* fallen angiosperm branch, *Cui 4092 & 4159;* angiosperm stump, *Cui 4102*, *Dai 7195*
85. *Perenniporia* cf. *phloiophila* Gilb. & M. Blackwe., dead angiosperm tree, *Dai 7237*
86. *Perenniporia subacida* (Peck) Donk, dead angiosperm tree, *Cui 4174;* fallen angiosperm branch, *Cui 3248;* fallen angiosperm trunk, *Cui 3233, Dai 7316;* fallen decorticated angiosperm trunk, *Dai 7218*
87. *Perenniporia tenuis* (Schw.) Ryvarden var. *tenuis*, fallen angiosperm branch, *Dai 7247;* fallen trunk of *Schima sp., Cui 2911*
88. *Perenniporia tephropora* (Mont.) Ryvarden, living angiosperm tree, *Cui 2837;* fallen angiosperm trunk, *Cui 3317;* rotten angiosperm wood, *Cui 3328;* living tree of *Castanopsis sp., Cui 2904*
89. *Phaeolus schweinitzii* (Fr.:Fr.) Pat., stump of *Tsuga sp.*, *Cui 4141*
90. *Phellinidium lamaënse* (Murrill) Y.C. Dai, fallen angiosperm trunk, *Cui 3313*
91. *Phellinus allardii* (Bres.) Ahmad, living tree of *Lagerstroemia sp., Cui 4194*
92. *Phellinus collinus* Y.C. Dai & Niemelä, angiosperm stump, *Cui 3273*
93. *Phellinus contiguus* (Pers.:Fr.) Pat., fallen angiosperm trunk, *Dai 7311*
94. *Phellinus ferreus* (Pers.) Bourdot & Galzin, fallen angiosperm branch, *Cui 2957, 3251, 3272, 3301 & 3343;* fallen angiosperm trunk, *Dai 7317, 7370, 7379 & 7425;* fallen angiosperm twig, *Cui 3283 & 3289*

95. *Phellinus ferruginosus* (Schrad.:Fr.) Pat., living angiosperm tree, *Cui 2881;* fallen angiosperm branch, *Cui 2885, 4095 & 4130, Dai 7372;* fallen angiosperm trunk, *Cui 2878, Dai 7189 & 7287;* rotten angiosperm wood, *Cui 3321*
96. *Phellinus gilvus* (Schwein.:Fr.) Pat., living angiosperm tree, *Cui 4160;* dead angiosperm tree, *Dai 7407;* fallen angiosperm branch, *Cui 2918 & 4106;* fallen angiosperm trunk, *Cui 2849, 4166, 4170 & 4176, Dai 7279;* angiosperm stump, *Cui 2890;* root of living angiosperm tree, *Cui 4158*
97. *Phellinus inermis* (Ellis & Everhart) G. Cunn., living angiosperm tree, *Cui 4118 & 4185*, *Dai 7207;* dead angiosperm tree, *Cui 2893, 2969 & 3250, Dai 7188, 7193, 7382 & 7399;* fallen angiosperm trunk, *Cui 3326 & 4171, Dai 7192, 7393 & 7396;* angiosperm stump, *Cui 2907*
98. *Phellinus kanehirae* (Yasuda) Ryvarden, base of living tree of *Schima sp.*, *Dai 7181*
99. *Phellinus senex* (Nees & Mont.) Imazeki, dead tree of *Koelreuteria sp., Dai 7436*
100. *Phylloporia ribis* (Schumach.:Fr.) Ryvarden, fallen angiosperm trunk, *Cui 2879*
101. *Physisporinus sanguinolentus* (Alb. & Schwein.:Fr.) Pilát, fallen angiosperm trunk, *Cui 2935;* rotten angiosperm wood, *Cui 2959*
102. *Physisporinus vitreus* (Pers.: Fr.) P. Karst., fallen angiosperm trunk, *Cui 3260*
103. *Physisporinus* cf. *xylostromatoides* (Bres.) Y.C. Dai, rotten angiosperm stump, *Cui 4142*
104. *Piptoporus soloniensis* (Dubois:Fr.) Pilát, fallen angiosperm trunk, *Dai 7270;* rotten angiosperm wood, *Dai 7354*
105. *Polyporus arcularius* Batsch:Fr., fallen angiosperm branch, *Cui 4111*
106. *Polyporus badius* (Pers.:Gray) Schwein., fallen angiosperm trunk, *Cui 4096, 4123 & 4138, Dai 7297*; rotten angiosperm wood, *Cui 4125*
107. *Polyporus elegans* Bull.: Fr., fallen angiosperm branch, *Cui 4146*
108. *Polyporus guianensis* Mont., fallen angiosperm branch, *Cui 3259;* rotten angiosperm wood, *Cui 4126;* angiosperm stump, *Cui 2846*
109. *Polyporus leprieurii* Mont., fallen angiosperm branch, *Cui 2894*
110. *Polyporus mikawai* Lloyd, rotten angiosperm wood, *Cui 2940*
111. *Polyporus minor* Z.S. Bi. & G.Y. Zheng, fallen angiosperm twig, *Cui 4156*
112. *Polyporus squamosus* (Huds.:Fr.) Fr., rotten angiosperm wood, *Dai 7420*
113. *Polyporus varius* Pers.:Fr., living angiosperm tree, *Dai 7335;* dead angiosperm tree, *Dai 7409;* fallen angiosperm branch, *Dai*

7203; fallen angiosperm trunk, *Cui 2961;* fallen angiosperm twig, *Dai 7350*

114. *Postia alni* Niemelä & Vampola, dead angiosperm tree, *Cui 2882;* fallen angiosperm branch, *Dai 7394;* rotten angiosperm wood, *Dai 7307*
115. *Postia caesia* (Schrad.:Fr.) P. Karst., fallen trunk of *Tsuga sp., Dai 7337*
116. *Postia hibernica* (Berk. & Broome) Jülich, fallen trunk of *Pinus sp., Cui 2915*
117. *Postia lactea* (Fr.:Fr.) P. Karst., fallen trunk of *Tsuga sp., Dai 7308*
118. *Postia* cf. *subcaesia* (A. David) Jülich, dead angiosperm tree, *Cui 3249;* fallen angiosperm trunk, *Dai 7314 & 7325*
119. *Postia tephroleuca* (Fr.) Jülich, fallen angiosperm trunk, *Cui 2941;* rotten angiosperm wood, *Cui 2951, Dai 7333;* rotten wood of *Tsuga sp., Dai 7299*
120. *Protomerulius caryae* (Schwein.) Ryvarden, fallen angiosperm trunk, *Cui 3245, 3275, 3296 & 3338, Dai 7225;* rotten angiosperm wood, *Cui 2968, Dai 7427;* angiosperm root, *Cui 4169*
121. *Pycnoporus cinnabarius* (Jacq.:Fr.) P. Karst., fallen angiosperm branch, *Dai 7206*
122. *Pycnoporus sanguineus* (L.:Fr.) Murrill, fallen angiosperm trunk, *Cui 4112 & 4163;* angiosperm stump, *Cui 2875*
123. *Rigidoporus cinereus* Núñez & Ryvarden, fallen angiosperm trunk, *Cui 3266*
124. *Rigidoporus crocatus* (Pat.) Ryvarden, rotten angiosperm wood, *Dai 7191;* rotten stump of *Liquidambar sp., Dai 7208*; rotten wood of *Tsuga sp., Dai 7348*
125. *Rigidoporus lineatus* (Pers.:Fr.) Ryvarden, fallen angiosperm trunk, *Cui 4162*
126. *Rigidoporus microporus* (Fr.) Overeem, living angiosperm tree, *Cui 4086*
127. *Rigidoporus minutus* B.K. Cui & Y.C. Dai, fallen angiosperm trunk, *Cui 3279, Dai 7222;* rotten angiosperm wood, *Cui 2962, 2963, 2965, 3253, 3269, 3278 & 3281;* angiosperm stump, *Cui 2925;* rotten angiosperm stump, *Cui 2939 & 4150, Dai 7241*
128. *Rigidoporus ulmarius* (Sow.:Fr.) Imazeki, living tree of *Pterocarya sp.*, *Cui 4186, 4191 & 4195*
129. *Rigidoporus vinctus* (Berk.) Ryvarden, dead angiosperm tree, *Cui 2841 & 3327;* fallen angiosperm trunk, *Cui 2916 & 3246;* rotten angiosperm wood, *Dai 7238;* stump of *Liquidambar sp., Dai 7198 & 7273*
130. *Skeletocutis alutacea* (J. Lowe) Jean Keller, fallen angiosperm branch, *Cui 3277, Dai 7345;* rotten angiosperm wood, *Cui 2954*

131. *Skeletocutis amorpha* (Fr.:Fr.) Kotl. & Pouzar, dead tree of *Pinus sp., Dai 7310;* root of *Pinus sp., Dai 7283*
132. *Skeletocutis kuehneri* A. David, fallen trunk of *Pinus sp., Cui 2835 & 3242*
133. *Skeletocutis nivea* (Jungh.) Jean Keller, fallen angiosperm branch, *Cui 2840 & 3342;* fallen angiosperm trunk, *Cui 2861 & 3341, Dai 7340;* fallen trunk of *Cyclobalanopsis sp., Dai 7423*
134. *Skeletocutis odora* (Sacc.) Ginns, fallen trunk of *Pinus sp., Dai 7262a & 7291*
135. *Skeletocutis vulgaris* (Fr.) Niemelä & Y.C. Dai, fallen angiosperm trunk, *Cui 2933;* fallen angiosperm twig, *Cui 3284;* rotten wood of *Pinus sp., Dai 7251, 7371 & 7392*
136. *Sparsitubus nelumbiformis* L.W. Xu & J.D. Zhao, rotten angiosperm wood, *Cui 4175*
137. *Tinctoporellus epimiltinus* (Berk. & Br.) Ryvarden, fallen angiosperm trunk, *Cui 2923, 3320 & 4154;* angiosperm stump, *Cui 2857 & 2868;* fallen gymnosperm trunk, *Dai 7344*
138. *Trametes elegans* (Spreng.:Fr.) Fr., fallen angiosperm trunk, *Cui 2970*
139. *Trametes gibbosa* (Pers.:Fr.) Fr., fallen angiosperm trunk, *Dai 7435*
140. *Trametes hirsuta* (Wulfen:Fr.) Pilát, fallen angiosperm branch, *Dai 7197;* fallen angiosperm trunk, *Cui 2932, Dai 7432;* angiosperm stump, *Cui 4190*
141. *Trametes lactinea* (Berk.) Sacc., dead angiosperm tree, *Dai 7323;* fallen angiosperm trunk, *Cui 2950, 3264, 3270 & 3286*
142. *Trametes ochracea* (Pers.) Gilb. & Ryvarden, fallen angiosperm trunk, *Cui 2854*
143. *Trametes orientalis* (Yasuda) Imazeki, fallen angiosperm branch, *Dai 7202;* fallen angiosperm trunk, *Dai 7229*
144. *Trametes pubescens* (Schumach.:Fr.) Pilát, fallen angiosperm branch, *Cui 3256*; fallen angiosperm trunk, *Cui 4148;* fallen angiosperm twig, *Cui 4089*
145. *Trametes versicolor* (L.:Fr.) Pilát, angiosperm stump, *Cui 2864*
146. *Trichaptum abietinum* (Pers.:Fr.) Ryvarden, fallen branch of *Pinus sp., Dai 7201 & 7205*
147. *Trichaptum byssogenum* (Jungh.) Ryvarden, fallen trunk of *Pinus sp., Dai 7267 & 7289*
148. *Trichaptum fuscoviolaceum* (Ehrenb.:Fr.) Ryvarden, fallen trunk of *Pinus sp., Dai 7196*
149. *Trichaptum pargamenum* (Fr.) G. Cunn., fallen angiosperm trunk, *Cui 2867;* angiosperm stump, *Cui 4184*
150. *Tyromyces chioneus* (Fr.) P. Karst., fallen angiosperm branch, *Dai 7349*

151. *Tyromyces galactinus* (Berk.) J. Lowe, fallen angiosperm trunk, *Dai 7219;* fallen trunk of *Pinus*, *Dai 7272*
152. *Tyromyces kemetii* (Bres.) Bondartsev & Singer, fallen angiosperm trunk, *Cui 3312*
153. *Tyromyces transformatus* Núñez & Ryvarden, dead angiosperm tree, *Cui 3302;* fallen angiosperm trunk, *Dai 7224;* rotten angiosperm wood, *Cui 3235 & 3323;* angiosperm stump, *Cui 2948*
154. *Wrightoporia lenta* (Oveh. & J. Lowe) Pouzar, stump of *Cunninghamia sp., Cui 3292, Dai 7209 & 7234;* rotten gymnosperm stump, *Cui 3290*
155. *Wrightoporia luteola* B.K. Cui & Y.C. Dai, fallen decorticated angiosperm trunk, *Dai 7221*

Discussions

Antrodiella duracina, *Fomitiporia punctata*, *Heterobasidion insulare*, *Hyphodontia flavipora, Junghuhnia nitida, Microporus affinis, Phellinus ferreus, P. ferruginosus, P. gilvus, P. inermis* and *Rigidoporus minutus* are the most common polypore species in the study areas.

Compared to previous studies in the Changbaishan Nature Reserve, Changbai Mountains, northeastern China where 213 polypores were recorded (Dai 1996), the polypore mycota in Wuyi Mountains of eastern China is poorer, although, there are more potential host trees in Wuyi Mountains than in Changbai Mountains. One reason for this phenomenon is that the forests are older and better protected in Changbai Mountains than in Wuyi Mountains. Moreover, more inventories were made in Changbai Mountains. Further investigations and studies are needed to understand the fungal diversity in Wuyi Mountains.

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porus, Ischnoderma, Loweporus, Parmastomyces, Perenniporia, Pyrofomes, Steccherícium, Trechispora, Truncospora and *Tyromyces*. Beih. *Nova Hedwigia* **86**: 1–265.
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